

2012 Annual Revision Cycle

Report on Proposals

A compilation of NFPA® Technical
Committee Reports on Proposals
for public review and comment

Public Comment Deadline: August 30, 2011

NOTE: The proposed NFPA documents addressed in this Report on Proposals (ROP) and in a follow-up Report on Comments (ROC) will only be presented for action when proper Amending Motions have been submitted to the NFPA by the deadline of April 6, 2012. The June 2012 NFPA Conference & Expo will be held June 11–14, 2012, at the Mandalay Bay Convention Center, Las Vegas, NV. During the meeting, the Association Technical Meeting (Tech Session) will be held June 13–14, 2012. Documents that receive no motions will not be presented at the meeting and instead will be forwarded directly to the Standards Council for action on issuance. For more information on the rules and for up-to-date information on schedules and deadlines for processing NFPA documents, check the NFPA website (www.nfpa.org) or contact NFPA Standards Administration.



National Fire Protection Association®

1 BATTERYMARCH PARK, QUINCY, MA 02169-7471

Information on NFPA Codes and Standards Development

I. Applicable Regulations. The primary rules governing the processing of NFPA documents (codes, standards, recommended practices, and guides) are the *NFPA Regulations Governing Committee Projects (Regs)*. Other applicable rules include *NFPA Bylaws*, *NFPA Technical Meeting Convention Rules*, *NFPA Guide for the Conduct of Participants in the NFPA Standards Development Process*, and the *NFPA Regulations Governing Petitions to the Board of Directors from Decisions of the Standards Council*. Most of these rules and regulations are contained in the *NFPA Directory*. For copies of the *Directory*, contact Codes and Standards Administration at NFPA Headquarters; all these documents are also available on the NFPA website at “www.nfpa.org.”

The following is general information on the NFPA process. All participants, however, should refer to the actual rules and regulations for a full understanding of this process and for the criteria that govern participation.

II. Technical Committee Report. The Technical Committee Report is defined as “the Report of the Technical Committee and Technical Correlating Committee (if any) on a document consisting of the ROP and ROC.” A Technical Committee Report consists of the Report on Proposals (ROP), as modified by the Report on Comments (ROC), published by the Association.

III. Step 1: Report on Proposals (ROP). The ROP is defined as “a report to the Association on the actions taken by Technical Committees and/or Technical Correlating Committees, accompanied by a ballot statement and one or more proposals on text for a new document or to amend an existing document.” Any objection to an action in the ROP must be raised through the filing of an appropriate Comment for consideration in the ROC or the objection will be considered resolved.

IV. Step 2: Report on Comments (ROC). The ROC is defined as “a report to the Association on the actions taken by Technical Committees and/or Technical Correlating Committees accompanied by a ballot statement and one or more comments resulting from public review of the Report on Proposals (ROP).” The ROP and the ROC together constitute the Technical Committee Report. Any outstanding objection following the ROC must be raised through an appropriate Amending Motion at the Association Technical Meeting or the objection will be considered resolved.

V. Step 3a: Action at Association Technical Meeting. Following the publication of the ROC, there is a period during which those wishing to make proper Amending Motions on the Technical Committee Reports must signal their intention by submitting a Notice of Intent to Make a Motion. Documents that receive notice of proper Amending Motions (Certified Amending Motions) will be presented for action at the annual June Association Technical Meeting. At the meeting, the NFPA membership can consider and act on these Certified Amending Motions as well as Follow-up Amending Motions, that is, motions that become necessary as a result of a previous successful Amending Motion. (See 4.6.2 through 4.6.9 of *Regs* for a summary of the available Amending Motions and who may make them.) Any outstanding objection following action at an Association Technical Meeting (and any further Technical Committee consideration following successful Amending Motions, see *Regs* at 4.7) must be raised through an appeal to the Standards Council or it will be considered to be resolved.

VI. Step 3b: Documents Forwarded Directly to the Council. Where no Notice of Intent to Make a Motion (NITMAM) is received and certified in accordance with the Technical Meeting Convention Rules, the document is forwarded directly to the Standards Council for action on issuance. Objections are deemed to be resolved for these documents.

VII. Step 4a: Council Appeals. Anyone can appeal to the Standards Council concerning procedural or substantive matters related to the development, content, or issuance of any document of the Association or on matters within the purview of the authority of the Council, as established by the *Bylaws* and as determined by the Board of Directors. Such appeals must be in written form and filed with the Secretary of the Standards Council (see 1.6 of *Regs*). Time constraints for filing an appeal must be in accordance with 1.6.2 of the *Regs*. Objections are deemed to be resolved if not pursued at this level.

VIII. Step 4b: Document Issuance. The Standards Council is the issuer of all documents (see Article 8 of *Bylaws*). The Council acts on the issuance of a document presented for action at an Association Technical Meeting within 75 days from the date of the recommendation from the Association Technical Meeting, unless this period is extended by the Council (see 4.8 of *Regs*). For documents forwarded directly to the Standards Council, the Council acts on the issuance of the document at its next scheduled meeting, or at such other meeting as the Council may determine (see 4.5.6 and 4.8 of *Regs*).

IX. Petitions to the Board of Directors. The Standards Council has been delegated the responsibility for the administration of the codes and standards development process and the issuance of documents. However, where extraordinary circumstances requiring the intervention of the Board of Directors exist, the Board of Directors may take any action necessary to fulfill its obligations to preserve the integrity of the codes and standards development process and to protect the interests of the Association. The rules for petitioning the Board of Directors can be found in the *Regulations Governing Petitions to the Board of Directors from Decisions of the Standards Council* and in 1.7 of the *Regs*.

X. For More Information. The program for the Association Technical Meeting (as well as the NFPA website as information becomes available) should be consulted for the date on which each report scheduled for consideration at the meeting will be presented. For copies of the ROP and ROC as well as more information on NFPA rules and for up-to-date information on schedules and deadlines for processing NFPA documents, check the NFPA website (www.nfpa.org) or contact NFPA Codes & Standards Administration at (617) 984-7246.

2012 Annual Revision Cycle ROP Contents

by NFPA Numerical Designation

Note: Documents appear in numerical order.

NFPA No.	Type Action	Title	Page No.
13	P	Standard for the Installation of Sprinkler Systems	13-1
13D	P	Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes	13D-1
13R	P	Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height	13R-1
20	P	Standard for the Installation of Stationary Pumps for Fire Protection	20-1
24	P	Standard for the Installation of Private Fire Service Mains and Their Appurtenances	24-1
51	P	Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes	51-1
55	P	Compressed Gases and Cryogenic Fluids Code	55-1
61	P	Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities	61-1
72®	P	<i>National Fire Alarm and Signaling Code®</i>	72-1
80	P	Standard for Fire Doors and Other Opening Protectives	80-1
101A	P	Guide on Alternative Approaches to Life Safety	101A-1
105	P	Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives	105-1
110	P	Standard for Emergency and Standby Power Systems	110-1
111	P	Standard on Stored Electrical Energy Emergency and Standby Power Systems	111-1
291	P	Recommended Practice for Fire Flow Testing and Marking of Hydrants	291-1
301	P	Code for Safety to Life from Fire on Merchant Vessels	301-1
400	P	Hazardous Materials Code	400-1
402	P	Guide for Aircraft Rescue and Fire-Fighting Operations	402-1
415	P	Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways	415-1
424	P	Guide for Airport/Community Emergency Planning	424-1
450	P	Guide for Emergency Medical Services and Systems	450-1
472	P	Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents	472-1
473	P	Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents	473-1
555	P	Guide on Methods for Evaluating Potential for Room Flashover	555-1

654	P	Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids.....	654-1
1001	P	Standard for Fire Fighter Professional Qualifications.....	1001-1
1122	P	Code for Model Rocketry.....	1122-1
1124	P	Code for the Manufacture, Transportation, Storage, and Retail Sales of Fireworks and Pyrotechnic Articles.....	1124-1
1127	P	Code for High Power Rocketry.....	1127-1
1128DS	N	Draft Standard for Standard Method of Fire Test for Flame Breaks.....	1128DS-1
1129DS	N	Draft Standard for Standard Method of Fire Test for Covered Fuse on Consumer Fireworks.....	1129DS-1
1144	P	Standard for Reducing Structure Ignition Hazards from Wildland Fire	1144-1
1221	P	Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems.....	1221-1
1500	P	Standard on Fire Department Occupational Safety and Health Program.....	1500-1
1582	P	Standard on Comprehensive Occupational Medical Program for Fire Departments.....	1582-1
1801	P	Standard on Thermal Imagers for the Fire Service.....	1801-1
1917	N	Standard for Automotive Ambulances.....	1917-1

TYPES OF ACTION

P Partial Revision

C Complete Revision

N New Document

R Reconfirmation

W Withdrawal

Agricultural Dusts			
61	Standard for the Prevention of Fire and Dust Explosions in Agricultural and Food Processing Facilities	P	61-1
Aircraft Rescue and Fire Fighting			
402	Guide for Aircraft Rescue and Fire-Fighting Operations	P	402-1
424	Guide for Airport/Community Emergency Planning	P	424-1
Airport Facilities			
415	Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways	P	415-1
Ambulances			
1917	Standard for Automotive Ambulances	N	1917-1
Automatic Sprinkler Systems			
13	Standard for the Installation of Sprinkler Systems	P	13-1
Residential Sprinkler Systems			
13D	Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes	P	13D-1
13R	Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height	P	13R-1
Private Water Supply Piping Systems			
24	Standard for the Installation of Private Fire Service Mains and Their Appurtenances	P	24-1
291	Recommended Practice for Fire Flow Testing and Marking of Hydrants	P	291-1
Fire and Emergency Services Protective Clothing Equipment			
Electronic Safety Equipment			
1801	Standard on Thermal Imagers for the Fire Service	P	1801-1
Emergency Medical Services			
450	Guide for Emergency Medical Services and Systems	P	450-1
Fire Doors and Windows			
80	Standard for Fire Doors and Other Opening Protectives	P	80-1
105	Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives	P	105-1
Fire Pumps			
20	Standard for the Installation of Stationary Pumps for Fire Protection	P	20-1
Fire Service Occupational Safety and Health			
1500	Standard on Fire Department Occupational Safety and Health Program	P	1500-1
1582	Standard on Comprehensive Occupational Medical Program for Fire Departments	P	1582-1
Forest and Rural Fire Protection			
1144	Standard for Reducing Structure Ignition Hazards from Wildland Fire	P	1144-1
Handling and Conveying of Dusts, Vapors, and Gases			
654	Standard for the Prevention of Fire and Dust Explosions from the Manufacturing Processing, and Handling of Combustible Particulate Solids	P	654-1
Hazard and Risk of Contents and Furnishings			
555	Guide on Methods for Evaluating Potential for Room Flashover	P	555-1
Hazardous Chemicals			
400	Hazardous Materials Code	P	400-1
Hazardous Materials Response Personnel			
472	Standard for Competence of Responders to Hazardous Materials/ Weapons of Mass Destruction Incidents	P	472-1
473	Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents	P	473-1
Industrial and Medical Gases			
51	Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes	P	51-1
55	Compressed Gases and Cryogenic Fluids Code	P	55-1
Merchant Vessels			
301	Code for Safety to Life from Fire on Merchant Vessels	P	301-1

National Electrical Code		
Emergency Power Supplies		
110	Standard for Emergency and Standby Power Systems	P 110-1
111	Standard on Stored Electrical Energy Emergency and Standby Power Systems	P 111-1
Professional Qualifications		
Fire Fighter Professional Qualifications		
1001	Standard for Fire Fighter Professional Qualifications	P 1001-1
Public Emergency Service Communication		
1221	Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems	P 1221-1
Pyrotechnics		
1122	Code for Model Rocketry	P 1122-1
1124	Code for the Manufacture, Transportation, Storage, and Retail Sales of Fireworks and Pyrotechnic Articles	P 1124-1
1127	Code for High Power Rocketry	P 1127-1
1128DS	Draft Standard for Standard Method of Fire Tests for Flame Breaks	N 1128DS-1
1129DS	Draft Standard for Standard Method of Fire Test for Covered Fuse on Consumer Fireworks	N 1129DS-1
Safety to Life		
Alternative Approaches to Life Safety		
101A	Guide on Alternative Approaches to Life Safety	P 101A-1
Signaling Systems for the Protection of Life and Property		
72®	<i>National Fire Alarm Code®</i>	P 72-1

COMMITTEE MEMBER CLASSIFICATIONS^{1,2,3,4}

The following classifications apply to Committee members and represent their principal interest in the activity of the Committee.

1. M Manufacturer: A representative of a maker or marketer of a product, assembly, or system, or portion thereof, that is affected by the standard.
2. U User: A representative of an entity that is subject to the provisions of the standard or that voluntarily uses the standard.
3. IM Installer/Maintainer: A representative of an entity that is in the business of installing or maintaining a product, assembly, or system affected by the standard.
4. L Labor: A labor representative or employee concerned with safety in the workplace.
5. RT Applied Research/Testing Laboratory: A representative of an independent testing laboratory or independent applied research organization that promulgates and/or enforces standards.
6. E Enforcing Authority: A representative of an agency or an organization that promulgates and/or enforces standards.
7. I Insurance: A representative of an insurance company, broker, agent, bureau, or inspection agency.
8. C Consumer: A person who is or represents the ultimate purchaser of a product, system, or service affected by the standard, but who is not included in (2).
9. SE Special Expert: A person not representing (1) through (8) and who has special expertise in the scope of the standard or portion thereof.

NOTE 1: "Standard" connotes code, standard, recommended practice, or guide.

NOTE 2: A representative includes an employee.

NOTE 3: While these classifications will be used by the Standards Council to achieve a balance for Technical Committees, the Standards Council may determine that new classifications of member or unique interests need representation in order to foster the best possible Committee deliberations on any project. In this connection, the Standards Council may make such appointments as it deems appropriate in the public interest, such as the classification of "Utilities" in the National Electrical Code Committee.

NOTE 4: Representatives of subsidiaries of any group are generally considered to have the same classification as the parent organization.

FORM FOR COMMENT ON NFPA REPORT ON PROPOSALS
2012 ANNUAL REVISION CYCLE
FINAL DATE FOR RECEIPT OF COMMENTS: 5:00 pm EDST, August 30, 2011

For further information on the standards-making process, please contact the Codes and Standards Administration at 617-984-7249 or visit www.nfpa.org/codes.

For technical assistance, please call NFPA at 1-800-344-3555.

FOR OFFICE USE ONLY

Log #: _____

Date Rec'd: _____

Please indicate in which format you wish to receive your ROP/ROC ☐ electronic ☐ paper ☒ download
(Note: If choosing the download option, you must view the ROP/ROC from our website; no copy will be sent to you.)

Date 8/1/200X Name John B. Smith Tel. No. 253-555-1234
Company _____ Email _____
Street Address 9 Seattle St. City Tacoma State WA Zip 98402

***If you wish to receive a hard copy, a street address **MUST** be provided. Deliveries cannot be made to PO boxes.

Please indicate organization represented (if any) Fire Marshals Assn. of North America

1. (a) NFPA Document Title National Fire Alarm Code NFPA No. & Year NFPA 72, 200X ed.

(b) Section/Paragraph 4.4.1.1

2. Comment on Proposal No. (from ROP): 72-7

3. Comment Recommends (check one): ☐ new text ☐ revised text ☒ deleted text

4. Comment (include proposed new or revised wording, or identification of wording to be deleted): [Note: Proposed text should be in legislative format; i.e., use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording to be deleted (~~deleted wording~~).]

Delete exception.

5. **Statement of Problem and Substantiation for Comment:** (Note: State the problem that would be resolved by your recommendation; give the specific reason for your Comment, including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.)

A properly installed and maintained system should be free of ground faults. The occurrence of one or more ground faults should be required to cause a 'trouble' signal because it indicates a condition that could contribute to future malfunction of the system. Ground fault protection has been widely available on these systems for years and its cost is negligible. Requiring it on all systems will promote better installations, maintenance and reliability.

6. Copyright Assignment

(a) ☒ I am the author of the text or other material (such as illustrations, graphs) proposed in the Comment.

(b) ☐ Some or all of the text or other material proposed in this Comment was not authored by me. Its source is as follows: (please identify which material and provide complete information on its source)

I hereby grant and assign to the NFPA all and full rights in copyright in this Comment and understand that I acquire no rights in any publication of NFPA in which this Comment in this or another similar or analogous form is used. Except to the extent that I do not have authority to make an assignment in materials that I have identified in (b) above, I hereby warrant that I am the author of this Comment and that I have full power and authority to enter into this assignment.

Signature (Required)

John B. Smith

PLEASE USE SEPARATE FORM FOR EACH COMMENT

Mail to: Secretary, Standards Council · National Fire Protection Association
1 Batterymarch Park · Quincy, MA 02169-7471 OR
Fax to: (617) 770-3500 OR Email to: proposals_comments@nfpa.org

FORM FOR COMMENT ON NFPA REPORT ON PROPOSALS
2012 ANNUAL REVISION CYCLE
FINAL DATE FOR RECEIPT OF COMMENTS: 5:00 pm EDST, August 30, 2011

For further information on the standards-making process, please contact the Codes and Standards Administration at 617-984-7249 or visit www.nfpa.org/codes.

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FOR OFFICE USE ONLY

Log #: _____

Date Rec'd: _____

Please indicate in which format you wish to receive your ROP/ROC ☐ electronic ☐ paper ☐ download
(Note: If choosing the download option, you must view the ROP/ROC from our website; no copy will be sent to you.)

Date _____ Name _____ Tel. No. _____
Company _____ Email _____
Street Address _____ City _____ State _____ Zip _____

*****If you wish to receive a hard copy, a street address *MUST* be provided. Deliveries cannot be made to PO boxes.**

Please indicate organization represented (if any) _____

1. (a) NFPA Document Title _____ NFPA No. & Year _____

(b) Section/Paragraph _____

2. Comment on Proposal No. (from ROP): _____

3. Comment Recommends (check one): ☐ new text ☒ revised text ☐ deleted text

4. Comment (include proposed new or revised wording, or identification of wording to be deleted): [Note: Proposed text should be in legislative format; i.e., use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording to be deleted (~~deleted wording~~).]

5. **Statement of Problem and Substantiation for Comment:** (Note: State the problem that would be resolved by your recommendation; give the specific reason for your Comment, including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.)

6. Copyright Assignment

(a) ☐ I am the author of the text or other material (such as illustrations, graphs) proposed in the Comment.

(b) ☐ Some or all of the text or other material proposed in this Comment was not authored by me. Its source is as follows: (please identify which material and provide complete information on its source)

I hereby grant and assign to the NFPA all and full rights in copyright in this Comment and understand that I acquire no rights in any publication of NFPA in which this Comment in this or another similar or analogous form is used. Except to the extent that I do not have authority to make an assignment in materials that I have identified in (b) above, I hereby warrant that I am the author of this Comment and that I have full power and authority to enter into this assignment.

Signature (Required) _____

PLEASE USE SEPARATE FORM FOR EACH COMMENT

Mail to: Secretary, Standards Council · National Fire Protection Association
1 Batterymarch Park · Quincy, MA 02169-7471 OR
Fax to: (617) 770-3500 OR Email to: proposals_comments@nfpa.org

Sequence of Events Leading to Issuance of an NFPA Committee Document

Step 1 Call for Proposals

▼ Proposed new document or new edition of an existing document is entered into one of two yearly revision cycles, and a Call for Proposals is published.

Step 2 Report on Proposals (ROP)

▼ Committee meets to act on Proposals, to develop its own Proposals, and to prepare its Report.

▼ Committee votes by written ballot on Proposals. If two-thirds approve, Report goes forward. Lacking two-thirds approval, Report returns to Committee.

▼ Report on Proposals (ROP) is published for public review and comment.

Step 3 Report on Comments (ROC)

▼ Committee meets to act on Public Comments to develop its own Comments, and to prepare its report.

▼ Committee votes by written ballot on Comments. If two-thirds approve, Report goes forward. Lacking two-thirds approval, Report returns to Committee.

▼ Report on Comments (ROC) is published for public review.

Step 4 Association Technical Meeting

▼ "*Notices of intent to make a motion*" are filed, are reviewed, and valid motions are certified for presentation at the Association Technical Meeting. ("Consent Documents" that have no certified motions bypass the Association Technical Meeting and proceed to the Standards Council for issuance.)

▼ NFPA membership meets each June at the Association Technical Meeting and acts on Technical Committee Reports (ROP and ROC) for documents with "certified amending motions."

▼ Committee(s) vote on any amendments to Report approved at NFPA Association Technical Meeting.

Step 5 Standards Council Issuance

▼ Notification of intent to file an appeal to the Standards Council on Association action must be filed within 20 days of the NFPA Association Technical Meeting.

▼ Standards Council decides, based on all evidence, whether or not to issue document or to take other action, including hearing any appeals.

The Association Technical Meeting

The process of public input and review does not end with the publication of the ROP and ROC. Following the completion of the Proposal and Comment periods, there is yet a further opportunity for debate and discussion through the Association Technical Meeting that takes place at the NFPA Annual Meeting.

The Association Technical Meeting provides an opportunity for the final Technical Committee Report (i.e., the ROP and ROC) on each proposed new or revised code or standard to be presented to the NFPA membership for the debate and consideration of motions to amend the Report. The specific rules for the types of motions that can be made and who can make them are set forth in the NFPA *Regulations Governing Committee Projects (Regs)*, which should always be consulted by those wishing to bring an issue before the membership at an Association Technical Meeting. The following presents some of the main features of how a Report is handled.

The Filing of a Notice of Intent to Make a Motion. Before making an allowable motion at an Association Technical Meeting, the intended maker of the motion must file, in advance of the session, and within the published deadline, a Notice of Intent to Make a Motion. A Motions Committee appointed by the Standards Council then reviews all notices and certifies all amending motions that are proper. The Motions Committee can also, in consultation with the makers of the motions, clarify the intent of the motions and, in certain circumstances, combine motions that are dependent on each other together so that they can be made in one single motion. A Motions Committee report is then made available in advance of the meeting listing all certified motions. Only these Certified Amending Motions, together with certain allowable Follow-Up Motions (that is, motions that have become necessary as a result of previous successful amending motions) will be allowed at the Association Technical Meeting.

Consent Documents. Often there are codes and standards up for consideration by the membership that will be noncontroversial and no proper Notices of Intent to Make a Motion will be filed. These "Consent Documents" will bypass the Association Technical Meeting and head straight to the Standards Council for issuance. The remaining documents are then forwarded to the Association Technical Meeting for consideration of the NFPA membership.

What Amending Motions Are Allowed. The Technical Committee Reports contain many Proposals and Comments that the Technical Committee has rejected or revised in whole or in part. Actions of the Technical Committee published in the ROP may also eventually be rejected or revised by the Technical Committee during the development of its ROC. The motions allowed by NFPA rules provide the opportunity to propose amendments to the text of a proposed code or standard based on these published Proposals, Comments, and Committee actions. Thus, the list of allowable motions include motions to accept Proposals and Comments in whole or in part as submitted or as modified by a Technical Committee action. Motions are also available to reject an accepted Comment in whole or part. In addition, Motions can be made to return an entire Technical Committee Report or a portion of the Report to the Technical Committee for further study.

The NFPA Annual Meeting, also known as the NFPA Conference & Expo, takes place in June of each year. A second Fall membership meeting was discontinued in 2004, so the NFPA Technical Committee Report Session now runs once each year at the Annual Meeting in June.

Who Can Make Amending Motions. NFPA rules also define those authorized to make amending motions. In many cases, the maker of the motion is limited by NFPA rules to the original submitter of the Proposal or Comment or his or her duly authorized representative. In other cases, such as a Motion to Reject an accepted Comment, or to Return a Technical Committee Report or a portion of a Technical Committee Report for Further Study, anyone can make these motions. For a complete explanation, the NFPA Regs should be consulted.

Action on Motions at the Association Technical Meeting. In order to actually make a Certified Amending Motion at the Association Technical Meeting, the maker of the motion must sign in at least an hour before the session begins. In this way a final list of motions can be set in advance of the session. At the session, each proposed document up for consideration is presented by a motion to adopt the Technical Committee Report on the document. Following each such motion, the presiding officer in charge of the session opens the floor to motions on the document from the final list of Certified Amending Motions followed by any permissible Follow-Up Motions. Debate and voting on each motion proceeds in accordance with NFPA Regs. NFPA membership is not required in order to make or speak to a motion, but voting is limited to NFPA members who have joined at least 180 days prior to the Association Technical Meeting and have registered for the meeting. At the close of debate on each motion, voting takes place, and the motion requires a majority vote to carry. In order to amend a Technical Committee Report, successful amending motions must be confirmed by the responsible Technical Committee, which conducts a written ballot on all successful amending motions following the meeting and prior to the document being forwarded to the Standards Council for issuance.

Standards Council Issuance

One of the primary responsibilities of the NFPA Standards Council, as the overseer of the NFPA codes and standards development process, is to act as the official issuer of all NFPA codes and standards. When it convenes to issue NFPA documents, it also hears any appeals related to the document. Appeals are an important part of assuring that all NFPA rules have been followed and that due process and fairness have been upheld throughout the codes and standards development process. The Council considers appeals both in writing and through the conduct of hearings at which all interested parties can participate. It decides appeals based on the entire record of the process as well as all submissions on the appeal. After deciding all appeals related to a document before it, the Council, if appropriate, proceeds to issue the document as an official NFPA code or standard. Subject only to limited review by the NFPA Board of Directors, the decision of the Standards Council is final, and the new NFPA code or standard becomes effective twenty days after Standards Council issuance.

Report of the Committee on Ambulances

Alternates

David H. Fischler, Chair

Pompano Beach, FL [U]

Rep. Fire Chiefs' Council of Suffolk County, Inc.

Andrew J. Alger, Progressive Engineering Inc., IN [RT]
Wesley D. Chestnut, Spartan Motors, Inc., MI [M]
David B. Cole, Life Line Emergency Vehicles, IA [M]
Donald Frazeur, Los Angeles Fire Department, CA [U]
Randy M. Freiburger, Ford Motor Company, MI [M]
James D. Green, National Institute for Occupational Safety & Health, WV [RT]
Thomas Hillenbrand, Underwriters Laboratories Inc., IL [RT]
Paul Holzapfel, ASV/Wheeled Coach Industries, Inc., FL [M]
Jerry A. Johnston, National Association of EMTs (NAEMT), IA [L]
 Rep. National Association of Emergency Medical Technicians
James J. Juneau, Juneau, Boll, Stacy, & Ucherek, PLLC, TX [SE]
J. Roger Lackore, Oshkosh Corporation, WI [M]
Joseph V. Maruca, West Barnstable Fire Department, MA [U]
 Rep. National Volunteer Fire Council
John W. McDonald, US General Services Administration, VA [E]
Michael T. McEvoy, Saratoga County, NY [L]
 Rep. New York State Emergency Medical Services Council
John McLoughlin, Fire Research Corporation, NY [M]
 Rep. Fire Apparatus Manufacturers Association
Mark D. Meijer, Life EMS Ambulance, MI [U]
 Rep. American Ambulance Association
Gary P. Morris, Strawberry, AZ [U]
 Rep. International Association of Fire Chiefs
John Mike Myers, Las Vegas Fire & Rescue, NV [U]
Robert Neitzel, Navistar, IL [M]
Richard W. Patrick, US Department of Homeland Security, MD [E]
Kevin W. Peters, Carilion Clinic Patient Transport, VA [L]
Suzanne M. Prentiss, New Hampshire Department of Safety, NH [E]
 Rep. National Association of State EMS Officials
Steven Alan Rabine, Glatfelter Insurance Group (VFIS), PA [I]
Aarron Reinert, Lakes Region EMS, MN [U]
 Rep. National EMS Management Association
Kenneth Southard, Plano Fire Department, TX [L]
 Rep. NFPA Fire Service Section
Stephen C. Spata, National Truck Equipment Association, MI [M]
William J. Tansey, Ballston Lake, NY [SE]
Ronald W. Thackery, American Medical Response, Inc., CO [U]
William Walton, Jr., Delaware State Fire School, DE [U]
 Rep. Delaware Volunteer Firefighters Association
Stephen Wilde, Certified Fleet Services, Inc., IL [IM]
 Rep. Emergency Vehicle Technician Certification Commission

Ken Beers, Canandaigua Emergency Squad, Inc., NY [L]
 (Alt. to Michael T. McEvoy)
A. Bradley, VFIS, PA [I]
 (Alt. to Steven Alan Rabine)
Terry L. Eckert, Eckert Enterprises, IL [IM]
 (Alt. to Stephen Wilde)
John T. Haley, American Medical Response, Inc., MA [U]
 (Alt. to Ronald W. Thackery)
Randy A. Hanson, ASV/American Emergency Vehicles, NC [M]
 (Alt. to Paul Holzapfel)
Mary F. Hedges, National Association of State EMS Officials, VA [E]
 (Alt. to Suzanne M. Prentiss)
Brian D. Hicks, Navistar (International Trucks), OH [M]
 (Alt. to Robert Neitzel)
Jason Holdeman, Progressive Engineering Inc., IN [RT]
 (Alt. to Andrew J. Alger)
James E. Johannessen, Underwriters Laboratories Inc., PA [RT]
 (Alt. to Thomas Hillenbrand)
Kenneth R. Knipper, Melbourne, KY [U]
 (Alt. to Joseph V. Maruca)
Kevin M. Lyons, Lyons Ambulance Service LLC, MA [U]
 (Alt. to Mark D. Meijer)
Keith D. Purdy, Plastics Composites North America LLC, NY [M]
 (Alt. to John McLoughlin)
Fred Schimmel, SJC Industries Corporation, IN [M]
 (Voting Alt. to SJC Rep.)
Jeffrey Wertz, Spartan Chassis, Inc., MI [M]
 (Alt. to Wesley D. Chestnut)
Rob Wilkey, Medtec Ambulance Corporation, IN [M]
 (Alt. to J. Roger Lackore)

Nonvoting

Drew E. Dawson, US Department of Transportation, DC [E]

Committee Scope: This committee shall have primary responsibility for documents on the design and performance of ambulances used to provide patient care and transport under emergency conditions.

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the front of this book.

The Report of the Technical Committee on **Ambulances** is presented for adoption.

This Report was prepared by the **Technical Committee on Ambulances** and proposes for adoption, a new document, NFPA 1917, **Standard for Standard for Automotive Ambulances**.

This Report has been submitted to letter ballot of the **Technical Committee on Ambulances**, which consists of 32 voting members. The results of the balloting, after circulation of any negative votes, can be found in the report.

1917-1 Log #2 **Final Action: Reject**
(Entire Document)

Submitter: Dan O'Brien, Malley Industries, Inc.

Recommendation: Add text to read as follows:

Breakover angle means the supplement of the largest angle, in the plan side view of an automobile, that can be formed by the lines tangent to the front and rear static loaded radii arcs and intersecting at a point on the underside of the automobile.

Substantiation: To avoid any departure from governing regulations.

Committee Meeting Action: Reject

Committee Statement: Current wording matches NFPA 1901, *Standard for Automotive Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: This Committee was charged with the responsibility to make improvements to ambulance design guidelines. The proposed standard continues to fail to enhance the safety and operational efficiency of transport ambulances. The proposed standard is substantially similar to the GSA KKK standard which brings into question the need for a hasty replacement, as opportunities for enhancements have been summarily dismissed in an effort for quick adoption of NFPA 1917. The unanimous desire of the Committee to reconvene immediately following any issuance of NFPA 1917 speaks clearly to its recognition that speed has helped prevent efforts to enhance patient and caregiver safety. While the Committee has indicated its unanimous interest in continuing the revision, there has been no confirmation from the Standards Council that this will be honored. Without that confirmation, it must be assumed that the Standards Council might easily question why the Committee did not include the enhancement of safety and efficiency in its review process over the past few years. Consequently, I am committed to the inclusion of provisions in NFPA 1917 that in fact enhance the safety of patients and caregivers while improving the efficiency of EMS operations. Thus, I vote no to each provision in the proposed Standard.

THACKERY, R.: The proposed standard continues to fail to enhance the safety and operational efficiency of patient care and transportation in an ambulance. This Committee has the responsibility to make improvements to the design of ambulance configurations, however this process has been rushed in an effort to replace the existing GSA KKK standard. The proposed standard is substantially similar to the GSA KKK standard which brings into question the need for replacement, while opportunities for enhancements have been summarily dismissed in an effort for quick adoption of NFPA 1917. The desire of the Committee to unanimously reconvene immediately following the issuance of NFPA 1917 speaks clearly to the recognition that speed has inhibited the ability to enhance patient and caregiver safety. While the Committee has indicated its unanimous interest in continuing the revision, there has been no confirmation from the Standards Council that this will be honored. Absent that confirmation, it must be assumed that the Standards Council might easily question why the Committee did not include the enhancement of safety and efficiency in its review process over the past few years. Consequently, I am committed to the inclusion of provisions in NFPA 1917 that in fact enhance the safety of patients and caregivers while improving the efficiency of EMS operations. Thus I vote no to each provision in the proposed Standard.

Comment on Affirmative:

REINERT, A.: The proposed standard is substantially similar to the GSA KKK standard which in itself lacked current safety standards. Failing to slow the process and add new information and technologies will mean many years will pass before new information can be added.

1917-1a Log #CP27 **Final Action: Accept**
(Entire document)

Submitter: Technical Committee on Ambulances,

Recommendation: The Technical Committee for Ambulances proposes a new document, NFPA 1917, *Standard for Automotive Ambulances*, here as shown at the end of this report.

Substantiation: NFPA 1917 provides standardized performance, design and testing criteria for automotive ambulances. Currently no national standard exists to evaluate such vehicles. The committee developed this document based on existing material from GSA purchasing specifications KKK-1822. This document will provide minimum safety requirements for ambulances.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-2 Log #11 **Final Action: Accept in Principle**
(Entire Document)

Submitter: Dan O'Brien, Malley Industries, Inc.

Recommendation: Revise text to read as follows:

GVWR less greater than 36,000 lb...".

Substantiation: It is presumed that auxiliary braking systems are being recommended for heavy vehicles not light ones.

Committee Meeting Action: Accept in Principle

Revise A.5.7.3 to read as follows

A.5.7.3 Purchasers of ambulances with a GVWR less than 36,000 lb (16,300 kg) should also consider equipping the ambulance with an auxiliary braking system. Ambulances commonly make repeated stops from high speeds that cause rapid brake lining wear and brake fade, sometimes leading to accidents. Auxiliary braking systems are recommended on ambulances that are exposed regularly to steep or long grades, operate in congested areas where repeated stops are normal, or respond to a high number of emergencies.

Examples of auxiliary braking systems include engine retarders, transmission retarders, exhaust retarders, and driveline retarders. These devices have various levels of effectiveness on braking. In addition, the systems can be activated by various means and settings, both automatic and manual in operation. The purchaser should carefully evaluate all auxiliary braking systems based on vehicle weight, terrain, duty cycle, and many other factors.

Some auxiliary braking devices should be disconnected when the apparatus is operated on slippery surfaces. Follow the auxiliary braking device manufacturer's recommendations for proper instructions.

Committee Statement: An auxiliary brake could be useful on any GVW vehicle.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-3 Log #12 **Final Action: Accept in Principle in Part**
(Entire Document)

Submitter: Roger Lackore, Oshkosh Corporation / Rep. Pierce Manufacturing

Recommendation: The NFPA 1917 committee produced a draft standard with test criteria included in chapter 9, and performance criteria referencing this test criteria in appropriate places throughout the document. NFPA staff re-wrote the draft to eliminate this work and replace it with references to the AMD standards. This was done because the AMD had not given formal permission to include their work in the document, and some of the wording was similar to the AMD text. AMD has since voted to give NFPA permission to use their work in whatever way NFPA sees fit. Propose that the original committee wording from chapter 9, and the subsequent references in the other chapters, be restored to the form as they existed from the NFPA 1917 committee in Phoenix as follows

NFPA 1917

Standard for Automotive Ambulances

Chapter 1 Administration

1.1* Scope.

1.1.1 This standard establishes the minimum requirements for new automotive emergency medical services (EMS) ground vehicles used for out-of-hospital medical care and patient transport.

1.1.2 The term new as applied in this standard is intended to refer to the original construction of an ambulance using all new materials and parts.

1.2 Purpose. The purpose of this document is to specify minimum requirements, performance parameters, and essential criteria for the design of ground ambulances.

1.3 Application.

1.3.1 This standard shall apply equally to vehicles intended for use in both emergency and non-emergency operations.

1.3.2 This standard shall not apply to the following:

1. Refurbished and re-mounted vehicles
2. Vehicles that are used for transport of more than two stretcher-bound patients at the same time
3. Mass casualty vehicles
4. Military field ambulances
5. Vehicles intended for use as fire apparatus as specified in NFPA 1901 or NFPA 1906

1.4* Retroactivity. This standard shall not be applied retroactively.

1.5 Equivalency. Nothing in this standard is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this standard.

1.5.1 Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.

1.5.2 The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

1.6* Units and Formulas. In this standard, values for measurement in U.S. customary units are followed by equivalents in SI units. Either set of values can be used, but the same set of values (either U.S. customary units or SI units) shall be used consistently.

Chapter 2 Referenced Publications

2.1 General.

The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471, www.nfpa.org.

NFPA 70®, National Electrical Code®, 2008 edition.

2.3 Other Publications.

2.3.x ANSI Publications.

American National Standards Institute, Inc., 25 West 43rd Street, 4th floor, New York, NY 10036.

ANSI S1.4, Specification for Sound Level Meters, for Type II Meters, 2006
ANSI Z535.4, Product Safety Signs and Labels, 2007

2.3.x ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, www.astm.org.

ASTM E 661, Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads, 2009.

ASTM D 4956, Standard Specification for Retroreflective Sheeting for Traffic Control, 2009.

2.3.x California Government Publications.

Office of Administrative Law, 300 Capitol Mall, Suite 1250, Sacramento, California 95814-4339

California Administrative Code, Title 13, Article 8

2.3.x IPC Publications.

International Printed Circuits & Electronics, 309 S. Bannockburn, IL 60015
IPC-A-610D Acceptability of Electronic Assemblies, 2005

2.3.x ISO Publications.

International Standards Organization, 1 rue de Varembe, Case Postale 56, CH-1211 Genève 20, Switzerland, www.standardsinfo.net.

ISO/IEC 17020, General criteria for the operation of various types of bodies performing inspection, 1998.

ISO/IEC Guide 65, General requirements for bodies operating product certification systems, 1996.

2.3.x SAE Publications.

Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, www.sae.org.

SAE J156, Fusible Links, 2005.

SAE J541, Voltage Drop for Starting Motor Circuits, 1996.

SAE J551/1, Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz), 2006.

SAE J553, Circuit Breakers, 2004.

SAE J554, Electric Fuses (Cartridge Type), 1987.

SAE J560, Primary and Auxiliary Seven Conductor Electrical Connector for Truck-Trailer Jumper Cable, 2004.

SAE J575, Test Methods and Equipment for Lighting Devices and Components for Use on Vehicles Less Than 2032 mm in Overall Width, 2007.

SAE J578, Color Specification, 2006.

SAE J595, Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles, 2005.

SAE J683, Tire Chain Clearance — Trucks, Buses (Except Suburban, Intercity, and Transit Buses), and Combinations of Vehicles, 1985.

SAE J689 Approach, Departure, and Ramp Break over Angles, 2009

SAE J833, Human Physical Dimensions, 1989.

SAE J845, Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles, 2007.

SAE J994, Alarm — Backup — Electric, Laboratory Performance Testing, 2003.

SAE J1127, Low Voltage Battery Cable, 2005.

SAE J1128, Low Voltage Primary Cable, 2005.

SAE J1292, Automobile, Truck, Truck-Tractor, Trailer, and Motor Coach Wiring, 1981.

SAE J1318, Gaseous Discharge Warning Lamp for Authorized Emergency, Maintenance, and Service Vehicles, 1998.

SAE J1330, Photometry Laboratory Accuracy Guidelines, 2007.

SAE J1349, Engine Power Test Code, Spark Ignition and Diesel, 2004

SAE J1690, Flashers, 1996.

SAE J1849, Emergency Vehicle Sirens, 2008.

SAE J1888, High Current Time Lag Electric Fuses, 1990.

SAE J1889, L.E.D. Signal and Marking Lighting Devices, 2005.

SAE J2077, Miniature Blade Type Electrical Fuses, 1990.

SAE J2180, A Tilt Table Procedure for Measuring the Static Rollover Threshold for Heavy Trucks, 1998.

SAE J2394, Seven-Conductor Cable for ABS Power — Truck and Bus, 2007.

SAE J2420, COE Frontal Strength Evaluation — Dynamic Loading Heavy Trucks, 2003.

SAE J2422, Cab Roof Strength Evaluation — Quasi-Static Loading Heavy Trucks, 2003.

2.3.x UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096, www.ul.com.

UL 969, Standard for Marking and Labeling Systems, 2006.

2.3.x U.S. Government Publications.

U.S. Government Printing Office, Washington, DC 20402, www.gpo.gov.

Title 21, Code of Federal Regulations, Part 820: Quality System Regulation.

Title 29, Code of Federal Regulations, Part 1910.7 Definition and

Requirements for a Nationally Recognized Testing Laboratory.

Title 29, Code of Federal Regulations, Part 1910.169, “Air receivers.” 29 CFR 1910.169.

Title 29, Code of Federal Regulations, Part 1910.1030: Blood borne Pathogens.

Title 40, Code of Federal Regulations, Part 86: Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines.

Title 47, Code of Federal Regulations, Part 90: Public Safety Radio Services (FCC).

Title 49, Code of Federal Regulations, Part 178.37, “Specification 3AA and 3AAX, seamless steel cylinders.” 49 CFR 178.37.

Title 49, Code of Federal Regulations, Part 393 Federal Motor Carrier Safety Regulations (FMCSR).

Title 49, Code of Federal Regulations, Part 567, “Certification.” 49 CFR 567.

Title 49, Code of Federal Regulations, Part 571 Federal Motor Vehicle Safety Standards (FMVSS).

2.3.x GSA Publications.

U.S. General Services Administration, 1800 F Street, N.W., Washington, DC 20405.

Single copies of GSA publications generally are available at the General Services Administration Business Centers in cities throughout the United States. They also are available from the U.S. Government Printing Office.

KKK-A 1822F Federal Specification for Ambulances, 2007

RR-C-901C/GEN(1) — General Specification for Cylinders, Compressed Gas, High Pressure, Steel DOT 3Aa, and Aluminum Applications, 1981

2.3.x U.S. Federal Standards:

U.S. Government Printing Office, Washington, DC 20402.

Federal Standard No. 297 — Rustproofing of Commercial (Nontactical)

Vehicles

National Highway Traffic Safety Administration, Document Number DOT HS 808 721, Rev. June 1995.

2.3.x Military Standards:

Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

MIL-STD-461 Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment, 1999

MIL-STD-1223 Non-tactical Wheeled Vehicles, Painting, Identification Marking, and Data Plate Standards, 1991.

2.3.x American College of Emergency Physicians (ACEP):

ACEP, 1125 Executive Circle, Irving, TX 75038-2522

Guidelines for Ambulance Equipment, 2007

2.3.x National EMSC (Emergency Medical Services for Children) Resource Alliance:

Emergency Medical Services for Children (EMSC) National Resource Center, 111 Michigan Ave., N.W., Washington, D.C. 20010

Performance Measures Checklist for Recommended Pediatric Equipment and Supplies for BLS and ALS Ambulances, 2010

2.3.x Automotive Manufacturers Equipment Compliance Agency (AMECA):
AMECA, 1025 Connecticut Avenue, NW Suite #1012, Washington, D.C.

20036

AMECA Compliance Handbook, 2010

2.3.x Other Publications.

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections.

NFPA 70®, National Electrical Code®, 2008 edition.

NFPA 1451, Standard for Fire Service Vehicle Operations Training Program, 2007 edition.

Chapter 3 Definitions

3.1 General.

The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. Merriam-Webster's Collegiate Dictionary, 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3 Labeled. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

3.2.4* Listed. Equipment, materials, or services included in a list published

by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.5 Shall. Indicates a mandatory requirement.

3.2.6 Should. Indicates a recommendation or that which is advised but not required.

3.2.7 Standard. A document, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions shall be located in an appendix or annex, footnote, or fine-print note and are not to be considered a part of the requirements of a standard.

3.3 General Definitions.

3.3.1 Acceptance. An agreement between the purchasing authority and the contractor that the terms and conditions of the contract have been met.

3.3.2 Acceptance Tests. Tests performed on behalf of or by the purchaser at the time of delivery to determine compliance with the specifications for the ambulance

3.3.3 Ambulance. A vehicle used for emergency medical care that provides a driver’s compartment; a patient compartment to accommodate an emergency medical services provider (EMSP) and one patient located on the primary cot so positioned that the primary patient can be given intensive life-support during transit; equipment and supplies for emergency care at the scene as well as during transport; safety, comfort, and avoidance of aggravation of the patient’s injury or illness; two-way radio communication; and audible and visual traffic warning devices.

3.3.3.1 Substantially Similar Ambulance. An ambulance of the same type and that employs the same chassis make and engine model.

3.3.3.2 Type I Ambulance (10,001 to 14,000 GVWR). An ambulance with a cab chassis furnished with a modular ambulance body.

3.3.3.3 Type I-AD (Additional Duty) Ambulance (14,001 GVWR or More). An ambulance with a Cab-Chassis with modular ambulance body, increased GVWR, storage, and payload.

3.3.3.4 Type II Ambulance (10,000 and Under GVWR). An ambulance with a long wheelbase Van, with Integral Cab-Body.

3.3.3.5 Type III Ambulance (10,001 to 14,000 GVWR). An ambulance with a Cutaway Van with integrated modular ambulance body.

3.3.3.6 Type III-AD (Additional Duty) Ambulance (14,001 GVWR or More). An ambulance with a Cutaway Van with integrated modular body, and increased GVWR, storage, and payload.

3.3.4 Angle.

3.3.4.1 Angle of Approach. The smallest angle made between the road surface and a line drawn from the front point of ground contact of the front tire to any projection of the ambulance in front of the front axle.

3.3.4.2 Angle of Departure. The smallest angle made between the road surface and a line drawn from the rear point of ground contact of the rear tire to any projection of the ambulance behind the rear axle.

3.3.4.3 Ramp Breakover Angle. The angle measured between two lines tangent to the front and rear tire static loaded radius, and intersecting at a point on the underside of the vehicle that defines the largest ramp over which the vehicle can roll.

3.3.5 Automatic Electrical Load Management System. A device that continuously monitors the electrical system voltage and automatically sheds predetermined loads in a selected order to prevent overdischarging of the ambulance’s batteries.

3.3.6 Bonded (Bonding). Connected to establish electrical continuity and conductivity.

3.3.7 Bulkhead. The partition dividing the drivers compartment from the patient compartment.

3.3.8 Center of Gravity. The point at which the entire weight of the ambulance is considered to be concentrated so that, if supported at this point, the ambulance would remain in equilibrium in any position.

3.3.9 Chassis. The basic operating motor vehicle including the engine, frame, and other essential structural and mechanical parts, but exclusive of the body and all appurtenances for the accommodation of driver, property, passengers, appliances, or equipment related to other than control. Common usage might, but need not, include a cab (or cowl).

3.3.10 Compartment.

3.3.10.1 Enclosed Compartment. An area designed to protect stored items from environmental damage (weather resistant) that is confined on six sides and equipped with an access opening(s) that can be closed and latched.

3.3.10.2 Patient Compartment. The portion of the ambulance aft of the cab.

3.3.10.2.1 Type I Patient Compartment. The modular body area added on behind the cab.

3.3.10.2.2 Type II Patient Compartment. The body area beginning immediately behind the forward bulkhead.

3.3.10.2.3 Type III Patient Compartment. The modular body area added on behind the cab.

3.3.11 Conductor.

3.3.11.1 Grounding Conductor. A non-current-carrying conductor used to connect equipment or the ground circuit of a wiring system to the power source grounding system.

3.3.11.2 Line Voltage Conductor. An ungrounded current-carrying conductor of a line voltage circuit.

3.3.11.3 Neutral Conductor. The conductor connected to the neutral point of a system that is intended to carry current under normal conditions.

3.3.12 Continuous Duty. Operation at a substantially constant load for an indefinitely long time.

3.3.13 Contractor. The person or company responsible for fulfilling an agreed upon contract.

3.3.14 Defect. A discontinuity in a part or a failure to function that interferes with the service or reliability for which the part was intended.

3.3.15 Documentation. Any data or information supplied by the manufacturer or contractor relative to the ambulance, including information on its operation, service, and maintenance.

3.3.16 Electrical Appliance. An electrical device or instrument designed to perform a specific function, such as scene lights, battery charger, medical equipment, etc.

3.3.17* Electronic Siren. An audible warning device that produces sound electronically through the use of amplifiers and electromagnetic speakers.

3.3.18 Exterior. A nonsheltered location exposed to the environment, either continuously or intermittently.

3.3.19 Fixed Power Source. Any line voltage power source except a portable generator.

3.3.20 FMVSS. Abbreviation for Federal Motor Vehicle Safety Standards. Regulations promulgated by the National Highway Transportation Safety Administration (NHTSA) of the United States under Public Law 89-563, which are mandatory and must be complied with when motor vehicles or items of motor vehicle equipment are manufactured and certified thereto.

3.3.21 Fully Latched Position. The last or fully closed position on the striker of a FMVSS 206 compliant door latch.

3.3.22 Gallon. United States gallon.

3.3.23 Gauge. A visual device that indicates a measurement.

3.3.24* GAWR. See 3.3.63.1, Gross Axle Weight Rating.

3.3.25* GCWR. See 3.3.63.2, Gross Combination Weight Rating.

3.3.26 Generator. An electromechanical device for the production of electricity.

3.3.27* Grade. A measurement of the angle used in road design and expressed as a percentage of elevation change over distance.

3.3.28 Ground Clearance. The clearance under a vehicle at all locations except the axles and driveshaft connections to the axle or items designed to swing clear.

3.3.29* GVWR. See 3.3.63.3, Gross Vehicle Weight Rating.

3.3.30 High-Idle Speed Control. A control or switch system that provides a means to increase the engine operating speed from an idle condition to a higher preset operating speed.

3.3.31 Instruction Plate. A visual indication whether in pictorial or word format that provides instruction to the operator in the use of a component on the ambulance.

3.3.32 Interior. A sheltered location not exposed to the environment.

3.3.33 Interlock. A device or arrangement by means of which the functioning of one part is controlled by the functioning of another.

3.3.34 Label. A visual indication whether in pictorial or word format that provides for the identification of a control, switch, indicator, or gauge, or the display of information useful to the operator.

3.3.35 Latch. A mechanical device used to position the door in a closed position relative to the body framework with provision for controlled release or operation.

3.3.36 Line Voltage Circuit, Equipment, or System. An ac or dc electrical circuit, equipment, or system where the voltage to ground or from line to line is 30 V rms (ac), 42.4 V peak (ac), or 60 V dc; or greater.

3.3.37 Load.

3.3.37.1 Live Load. Forces acting on the aerial device from personnel, portable equipment, water, and nozzle reaction.

3.3.37.2 Total Continuous Electrical Load. The total current required to operate all of the devices permanently connected to the ambulance that can be simultaneously energized excluding intermittent-type loads such as primers and booster reel rewind motors.

3.3.38 Low Voltage Circuit, Equipment, or System. An electrical circuit, equipment, or system where the voltage does not exceed 30 V rms (ac), 42.4 V peak (ac), or 60 V dc; usually 12 V dc in an ambulance.

3.3.39 Manufacturer. The person or persons, company, firm, corporation, partnership, or other organization responsible for turning raw materials or components into a finished product.

3.3.40 Optical Center. The point specified by the optical warning device manufacturer of highest intensity when measuring the output of an optical warning device.

3.3.41 Optical Power. A unit of measure designated as candela-seconds/minute that combines the flash energy and flash rate of an optical source into one power measurement representing the true visual effectiveness of the emitted light.

3.3.42* Optical Source. Any single, independently mounted, light-emitting component in a lighting system.

3.3.43 Optical Warning Device. A manufactured assembly of one or more optical sources.

3.3.44 Panelboard. A single panel or group of panel units designed for assembly in the form of a single panel, including buses and automatic

overcurrent devices, and equipped with or without switches for the control of light, heat, or power circuits; designed to be placed in a cabinet or cutout box placed in or against a wall, partition, or other support; and accessible only from the front. [70, 2008]

3.3.45 Patient Cot. The cot, gurney or litter upon which the primary patient is transported.

3.3.46 Power Source. A device that produces line voltage electricity.

3.3.47 Power Supply Assembly. Any cord or distribution assembly that is partly comprised of the neutral conductor, grounding conductor, and line voltage conductors connected from the output terminals of the power source to the first main overcurrent protection device.

3.3.48 Proper(ly). In accordance with the manufacturer's specifications or as recommended by the manufacturer.

3.3.49 psi. Pounds per square inch.

3.3.50 PTO. Power takeoff.

3.3.51 Purchaser. The authority having responsibility for the specification and acceptance of the ambulance.

3.3.52 Purchasing Authority. The agency that has the sole responsibility and authority for negotiating, placing, and, where necessary, modifying each and every solicitation, purchase order, or other award issued by a governing body.

3.3.53 Qualified Person. A person who, by possession of a recognized degree, certificate, professional standing, or skill, and who, by knowledge, training, and experience, has demonstrated the ability to deal with problems relating to a particular subject matter, work, or project. [1451, 2007]

3.3.54 Readily Accessible. Able to be located, reached, serviced, or removed without removing other components or parts of the ambulance and without the need to use special tools to open enclosures.

3.3.55 Reserve Capacity. The ability of a battery to sustain a minimum electrical load in the event of a charging system failure or a prolonged charging system deficit.

3.3.56 Seat.

3.3.56.1 Child Restraint Seat. A seat capable of transporting a child 66 lb or less in accordance with FMVSS 213 and mounted in accordance with the seat manufacturer's recommendation.

3.3.56.2 Infant Restraint Seat. A seat capable of transporting an infant 22 lb or less in accordance with FMVSS 213 and mounted in accordance with the seat manufacturer's recommendation.

3.3.57 Side Entry Door. The body door on the side of the ambulance body that provides entry into the patient compartment and through which patients may be loaded/unloaded.

3.3.58 Sign. A visual indication whether in pictorial or word format that provides a warning to the operator or other persons near the ambulance.

3.3.59 Striker. A mechanical device with which the latch engages on the opposing member of the body framework.

3.3.60 Switch. Any set of contacts that interrupts or controls current flow through an electrical circuit.

3.3.61* Turning Clearance Radius. One-half the larger of the left or right full circle wall-to-wall turning diameter.

3.3.62 Weight.

3.3.62.1 Curb Weight. The total weight of the complete ambulance less the payload. The curb weight includes such items as the chassis; cab; body; batteries; spare tire; jack tire changing tools; and any other permanently attached or dedicated equipment along with a full complement of fuel, lubricants and coolant.

3.3.62.2 Estimated In-Service Weight. The amount that the ambulance manufacturer estimates the ambulance will weigh when it is placed in service with all fixed and portable equipment installed, all tanks full, and all personnel seating positions occupied.

3.3.62.3 In-Service Weight. The maximum actual vehicle weight under any conditions of mobile operation, sometimes referred to as gross vehicle weight.

3.3.63 Weight Rating.

3.3.63.1* Gross Axle Weight Rating (GAWR). The final stage manufacturer's specified maximum load-carrying capacity of an axle system, as measured at the tire-ground interfaces.

3.3.63.2* Gross Combination Weight Rating (GCWR). The final stage manufacturer's specified maximum loaded weight for a combination (articulated) vehicle consisting of a tow vehicle and one or more towed units.

3.3.63.3* Gross Vehicle Weight Rating (GVWR). The final stage manufacturer's specified maximum load-carrying capacity of a single vehicle.

3.3.64 Wet Location. A nonsheltered location inside a compartment with a door or cover that, while open, exposes the electrical enclosure or panelboard to the same environmental conditions as the exterior of the ambulance. A location on a nonenclosed, exterior surface of a ambulance body or driving and crew compartment where the enclosure or panel is exposed to the environment.

Chapter 4 General Requirements

4.1 General.

All ambulances shall comply with the following chapters:

- (1) Chapter 1, "Administration"
- (2) Chapter 2, "Referenced Publications"
- (3) Chapter 3, "Definitions"
- (4) Chapter 4, "General Requirements"
- (5) Chapter 5, "Chassis"
- (6) Chapter 6, "Body"
- (7) Chapter 7, "Low Voltage Electrical Systems and Warning Devices"
- (8) Chapter 8, "Line Voltage Electrical Systems"

(9) Chapter 9, "Testing"

4.2 Responsibility of the Purchaser.

4.2.1 It shall be the responsibility of the purchaser to consider the amount of equipment and personnel that will be carried on the ambulance and to specify a minimum usable payload that will accommodate this weight once the ambulance is placed in service.

4.2.2 It shall be the responsibility of the purchaser to specify any details of the ambulance that would exceed the minimum specifications of this standard.

4.2.3 After acceptance of the ambulance, the purchaser shall be responsible for ongoing training of personnel to develop and maintain proficiency regarding the proper and safe use of the ambulance and the associated equipment.

4.3 Responsibility of the Contractor.

4.3.1 The contractor shall provide a detailed description of the ambulance, a list of equipment to be furnished, and other construction and performance details to which the ambulance shall conform.

4.3.1.1 The detailed description of the ambulance shall include, but shall not be limited to, minimum usable payload, wheelbase, curb-to-curb turning clearance radius, principal dimensions, angle of approach, and angle of departure.

4.3.1.2 The contractor's detailed description shall include a statement specifically describing each aspect of the delivered ambulance that will not be fully compliant with the requirements of this standard.

4.3.1.3 The purpose of these contractor specifications shall be to define what the contractor intends to furnish and deliver to the purchaser.

4.3.2 Responsibility for the ambulance and equipment shall remain with the contractor until they are accepted by the purchaser.

4.4 Ambulance Components.

4.4.1 All components shall be installed in accordance with the applicable manufacturer's installation instructions.

4.4.2 The emergency medical care vehicles; including chassis, ambulance body, equipment, devices, medical accessories, and electronic equipment shall be standard commercial products, tested and certified to meet or exceed the requirements of this standard.

4.4.3 All medical devices furnished shall comply with Food and Drug Administration (FDA) regulatory requirements.

4.4.4 Vehicles shall be free from defects that may impair their serviceability or detract from appearance.

4.4.5 All bodies, systems, equipment, and interfaces with the chassis shall be done in accordance with the OEM Body Builders Book.

4.5 Legal Requirements. The ambulance shall comply with the following:

- (1) Applicable Federal Motor Vehicle Safety Standards (FMVSS)
- (2) State regulations as specified by the purchaser

4.6 Third-Party Certification of Test Results. Where this standard requires the witnessing or performing of tests by an independent third-party organization, that organization shall meet the requirements of this section.

4.6.1 All testing unique to this standard other than those outlined in Chapter 9 shall be witnessed or performed by an organization that is accredited for inspection of ambulances in accordance with ISO/IEC 17020, General Criteria For The Operation Of Various Types Of Bodies Performing Inspection.

4.6.2 The certification organization shall not be owned or controlled by manufacturers or vendors of the product that is being tested.

4.6.3 The certification organization shall be primarily engaged in certification work and shall not have a monetary interest in the product's ultimate profitability.

4.6.4 The certification organization shall witness all tests and shall refuse to certify any test results for a system if all components of that system requiring testing do not pass the testing required by this standard.

4.6.5 There shall be no conditional, temporary, or partial certification of test results.

4.6.6 Appropriate forms or data sheets shall be provided and used during the testing.

4.6.7 Programs shall be in place for training, proficiency testing, and performance verification of any staff involved with certification.

4.6.8 Appeal Process.

4.6.8.1 The certification organization's operating procedures shall provide a mechanism for the manufacturer to appeal decisions.

4.6.8.2 The procedures shall include provisions for the presentation of information from representatives of both sides of a controversy to a designated appeals panel.

4.6.9 Accredited Laboratory.

4.6.9.1 All testing specified by AMD Standards shall be witnessed or performed by an organization that is accredited for inspection of ambulances in accordance with an ISO/IEC 17025 accredited laboratory that is recognized by a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA).

4.6.9.2 The scope of accreditation shall include all tests outlined by Chapter 9 of this document.

4.6.10 Certification letters submitted for the ambulance model, components, and equipment being certified shall contain the following information on contractor's letterhead stationery in electronic format (pdf files):

- (1) To whom certifying
- (2) Date
- (3) Units or items
- (4) Contractor and address

- (5) Date product tested
- (6) Model number and specification data
- (7) Applicable specification references and test requirement
- (8) Summary of the test report
- (9) A certifying statement with official signature

4.6.11 The testing facility for each certification shall supply the following supportive verification data and information on letterhead stationery in electronic format (pdf files):

- (1) For whom tested
- (2) Report date
- (3) Name of sample product or device
- (4) Contractor's address
- (5) Serial and model number(s)
- (6) Specification referral and amendment number(s), and test requirement(s)
- (7) Test facilities used and location
- (8) Test equipment used
- (9) Test procedure
- (10) Test results
- (11) Verifying test data
- (12) Photographs
- (13) Test conclusion(s)
- (14) Witness(es)
- (15) Authorized signature

4.7 Manufacturer Certification of Test Results. Where this standard requires the results of tests or the performance of a component to be certified by the manufacturer, the manufacturer shall meet the requirements of this section.

4.7.1 A representative of the manufacturer shall witness all tests and shall refuse to certify any test results for a system unless all components of that system requiring testing pass the testing required by this standard.

4.7.2 There shall be no conditional, temporary, or partial certification of test results.

4.7.3 The manufacturer shall have the facilities and equipment necessary to conduct the required testing, a program for the calibration of all instruments, and procedures to ensure the proper control of all testing.

4.7.4 Appropriate forms or data sheets shall be provided and used during the testing.

4.7.5 Programs shall be in place for training, proficiency testing, and performance verification of any personnel involved with certification.

4.7.6 An official of the company that manufactures or installs the product shall designate in writing who is qualified to witness tests and certify results.

4.7.7 Certification documentation shall be delivered with the ambulance, including results of the certification tests.

Certification tests performed on a Substantially Similar Ambulance shall be valid for up to 7 years or until such time as the production product changes are so significant that they no longer meet the definition of a Substantially Similar Ambulance.

4.8 Personnel Protection.

4.8.1* Guards, shields, or other protection shall be provided where necessary in order to prevent injury of personnel by hot, moving, or rotating parts during nonmaintenance operations.

4.8.2 Electrical insulation or isolation shall be provided where necessary in order to prevent electrical shock from onboard electrical systems.

4.8.3 Vehicular workmanship shall ensure an operating environment free of accessible sharp projections and edges.

4.8.4 Safety-related (caution, warning, danger) signs shall meet the requirements of ANSI Z535.4, Product Safety Signs and Labels.

4.9 Controls and Instructions.

4.9.1 Illumination shall be provided for controls, switches, instruction plates, labels, gauges, and instruments necessary for the operation of the ambulance and the equipment provided on it.

4.9.2* All required signs, instruction plates, and labels shall be permanent in nature and securely attached and shall meet the requirements of 4.9.4 and UL 969, Standard for Marking and Labeling Systems.

4.9.2.1 The signs, instruction plates, and labels shall be resistant to the following:

- (1) Fluids to which they will normally be exposed
- (2) Temperatures between -30°F and 176°F (-35°C and 80°C)
- (3) Ultra violet radiation

4.9.2.2 The exterior mounted labels relating to safety or critical operational instructions shall be reflective or illuminated.

4.9.2.3 Controls and Switches.

4.9.2.3.1 Controls and switches that are expected to be operated by the belted driver while the ambulance is in motion shall be visible and within reach.

4.9.2.3.2 Controls and switches that are expected to be operated by the belted EMSP while the ambulance is in motion shall be visible and within reach of the designated Primary Patient Care Position.

4.9.2.4 Lever controls, equipment, items, and devices shall be installed, located, and stowed for the convenience of the purpose intended and shall not interfere with the EMSP or patient's ingress or egress of respective compartments.

4.9.2.5 Marking of switches, indicators, and control devices shall be perceptively and permanently identified with at least 12 point letters for the noun or function, and 8 point letters for the remainder of the legend.

4.9.2.6 The identifications shall be contrasting colors etched or engraved in plastic or metal, or printed and laminated in see through plastic, and grouped

according to function, and mounted in illuminated or backlit panel(s) or the console.

4.10 Vehicle Data Recorder.

4.10.1 All ambulances shall be equipped with an on-board vehicle data recorder (VDR).

4.10.2 The VDR shall be capable of recording the data shown in Table 4.10.2 in that order at least once per second.

Table 4.10.2 VDR Data

Data	Unit of Measure
Vehicle speed	mph
Acceleration (from speedometer)	mph/sec
Deceleration (from speedometer)	mph/sec
Engine speed	rpm
Engine throttle position	% of full throttle
Anti-lock braking system event	On/off
Seat occupied status	Occupied: Yes/No by position
Seat belt status	Buckled: Yes/No by position
Master optical warning device switch	On/off
Time	24-hour clock
Date	Year/month/day

4.10.3 Data shall be stored at the sampling rate in a 48-hour loop.

4.10.4 Memory shall be sufficient to record 100 engine hours' worth of minute-by-minute summary showing the data in Table 4.10.4.

Table 4.10.4 VDR Summary Data

Data	Unit of Measure
Maximum vehicle speed	mph
Maximum acceleration (from speedometer)	mph/sec
Maximum deceleration (from speedometer)	mph/sec
Maximum engine speed	rpm
Maximum engine throttle position	% of full throttle
Anti-lock braking system event	On/off
Seat occupied with seat belt unbuckled	Yes/no by position at 30 sec into minute
Master optical warning device switch	On/off at 30 sec into minute
Time	24-hour clock

4.10.5 When the memory capacity is reached, the system shall erase the oldest data first.

4.10.6 All data stored in the VDR shall be uploadable by the user to a computer and importable into a data management software package.

4.10.7 Data shall be password protected with access controlled by the purchaser.

4.10.8 Software shall be delivered with the ambulance that will run on both Windows® and Apple® operating systems and produce the following formatted reports from the uploaded data:

- (1) Raw second-by-second data over a specified data/time range
- (2) Daily log for the time the engine is running for a given date (minute-by-minute output of all values)
- (3) Weekly summary (maximum values each hour for each day of the week)
- (4) Monthly summary (maximum values each day for each day of the month)

4.11 Component Protection.

4.11.1* Hydraulic hose lines, air system tubing, control cords, and electrical harnesses shall be mechanically attached to the frame or body structure of the ambulance.

4.11.2 The types of equipment described in 4.11.1 shall be furnished with protective looms, grommets, or other devices at each point where they pass through body panels or structural members or wherever they lie against a sharp metal edge.

4.11.3 A through-the-frame connector shall be permitted to be used in place of protective looms or grommets.

4.12 Ambulance Performance.

4.12.1 The ambulance shall meet the requirements of this standard at elevations of 2,000 ft (600 m) above sea level.

4.12.2 The ambulance shall meet all the requirements of this standard while stationary on a grade of 6 percent in any direction.

4.12.3* Where temperature requirements are not otherwise specified, the ambulance shall be designed to function in ambient temperature conditions

between -20°F (-29°C) and 110°F (43°C).

4.12.4 The ambulance shall be capable of being driven for at least 250 mi (402 km) without refueling.

4.12.5 The vehicle shall be capable of three fordings, without water entering patient and equipment compartments while being driven through a minimum of 8 in. (203 mm) of water, at speeds of 5 mph (8 km/hr), for a distance of at least 100 ft (30 m)

4.13 Roadability.

4.13.1 The ambulance, when loaded to its estimated in-service weight, shall be capable of the following performance while on dry, paved roads that are in good condition.

4.13.2 The determination shall be made by actual test or OEM's certified computer prediction.

(1) From a standing start, the ambulance shall be able to attain a speed of 55 mph (88 km/hr) within 25 seconds on a level road.

(2) The ambulance shall be able to maintain a speed of at least 5 mph (8 km/hr) on any grade up to 35 percent.

(3) The ambulance shall be able to maintain a speed of at least 55 mph (88 km/hr) on any grade up to 3 percent.

4.13.3 The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

4.13.4* The ambulance shall be capable of a sustained speed of not less than 65 mph (105 km/hr) over dry, hard surfaced, level roads, at sea level, and passing speeds of 70 mph (112 km/hr) when tested under normal ambient conditions.

4.14 Serviceability.

4.14.1 The ambulance shall be designed so that all the manufacturer's recommended routine maintenance checks of lubricant and fluid levels can be performed by the operator without the need for hand tools.

4.14.2 Where special tools are required for routine service on any component of the ambulance, such tools shall be provided with the ambulance.

4.14.3 Ambulance components that interfere with repair or removal of other major components shall be attached with fasteners, such as cap screws and nuts, so that the components can be removed and installed with ordinary hand tools.

4.14.4 These components shall not be welded or otherwise permanently secured into place.

4.15 Tests on Delivery.

4.15.1 If acceptance tests are required at the point of delivery, the purchaser shall specify the details of the tests to be performed, and they shall not be performed in a manner that requires the ambulance or a component to operate outside its designed operating range.

4.15.4 Certification from OEM and individual equipment manufacturers are acceptable providing they are not part of a system(s) or altered.

4.16* Documentation.

4.16.1 Any documentation delivered with the ambulance shall be permitted to be in printed format, electronic format, audiovisual format, or a combination thereof.

4.16.2* The ambulance manufacturer shall calculate the load distribution plan for the ambulance, and that load distribution plan be delivered with the ambulance.

4.17 Data Required of the Contractor.

4.17.1 Ambulance Documentation. The contractor shall deliver with the ambulance at least one copy of the following documents:

(1) The manufacturer's record of ambulance construction details, including the following information:

- (a) Owner's name and address
- (b) Ambulance manufacturer, model, and serial number
- (c) Chassis make, model, and VIN
- (d) GVWR of front and rear axles and GVWR
- (e) Front tire size and total rated capacity in pounds (kilograms)
- (f) Rear tire size and total rated capacity in pounds (kilograms)
- (g) Engine make, model, serial number, rated horsepower.
- (h) Type of fuel and fuel tank capacity
- (i) Electrical system voltage and alternator output in amps
- (j) Battery make, model, and capacity in cold cranking amps (CCA)
- (k) Chassis transmission make, model, and serial number
- (l) Ratios of all driving axles
- (m) Maximum governed road speed
- (n) Paint manufacturer and paint number(s)
- (o) Company name and signature of responsible company representative

(p) Documents from a certified scale showing curb weight on the front axle and rear axle(s) (without personnel and equipment).

(2) Certification of compliance of the optical warning system (see 7.9.16)

(3) Siren manufacturer's certification of the siren (see 7.10.1.1)

(4) Written load analysis and results of the electrical system performance tests (see 9.5 and Section 9.9)

(5) Certification of slip resistance of all exterior stepping, standing, and walking surfaces (see 6.12)

4.17.2 Operations and Service Documentation.

4.17.2.1 The contractor shall deliver with the ambulance at least one set of complete operation and service documentation covering the completed ambulance as delivered and accepted.

4.17.2.2 The documentation shall address at least the inspection, service, and operations of the ambulance and all major components thereof.

4.17.2.3* The contractor shall also deliver with the ambulance the following documentation for the entire ambulance and each major operating system or major component of the ambulance:

- (1) Manufacturer's name and address
- (2) Country of manufacture
- (3) Source for service and technical information
- (4) Parts replacement information
- (5) Descriptions, specifications, and ratings of the chassis
- (6) Wiring diagrams for low voltage and line voltage ambulance-specific systems to include the following information:
 - (a) Pictorial representations of circuit logic for all electrical components and wiring
 - (b) Circuit identification
 - (c) Connector pin identification
 - (d) Zone location of electrical components
 - (e) Safety interlocks
 - (f) Alternator-battery power distribution circuits
 - (g) Input/output assignment sheets or equivalent circuit logic implemented in multiplexing systems
- (7) Lubrication charts
- (8) Operating instructions for the chassis, any major components
- (9) Instructions regarding the frequency and procedure for recommended maintenance
- (10) Overall ambulance operating instructions
- (11) Safety considerations
- (12) Limitations of use
- (13) Inspection procedures
- (14) Recommended service procedures
- (15) Troubleshooting guide
- (16) Ambulance body, chassis, and other component manufacturer's warranties
- (17) Special data required by this standard
- (18) A material safety data sheet (MSDS) for any fluid that is specified for use on the ambulance.

4.17.3 Certification and Payload Signage.

4.17.3.1* All ambulances shall have a certification and payload label as shown in Figure 4.17.3.1.

4.17.3.2 The label shall be mounted on the body (module) interior in a conspicuous location.

4.17.3.3 All text in Figure 4.17.3.1 shall be included on the certification and payload label.

Ambulance Data	
Manufactured By _____	Mo./Yr. _____
Address _____	
City _____	State _____ Zip _____
VIN _____	Job No. _____
Chassis Model _____	Statement of Exception Applies _____
Vehicle Type _____	Usable Payload (lbs)* _____
<p>This ambulance is certified by the manufacturer to conform to the edition of NFPA 1917 Standard for Automotive Ambulance in effect on the date the ambulance as contracted for subject to any applicable statement of exception as mandated by this standard.</p> <p>*Usable payload is the weight of the loose equipment, occupants, and cot as defined by NFPA 1917 Standard for Automotive Ambulances that can be carried in this ambulance without exceeding the GVWR.</p>	

FIGURE 4.17.3.1 Certification and Payload Label.

4.17.4 Payload Calculation Form.

4.17.4.1* The completed payload calculation form in Figure 4.17.4.1 shall be provided in accordance with 4.17.3.

4.17.4.2 All text shown in Figure 4.17.4.1 shall be included.

CUSTOMER USABLE PAYLOAD INFORMATION
Final Stage Ambulance Manufacturer's
Name: _____
OEM Chassis Year, Make, Model: _____

1) Ambulance Model, Type, Prod. #: _____

2) OEM GAWR — Front: _____ lb (kg)
3) OEM GAWR — Rear: _____ lb (kg)
4) OEM GVWR: _____ lb (kg)
5) Minimum Payload: _____ lb (kg)
6) Curb Weight — AS BUILT — Front Axle: _____ lb (kg)
7) Curb Weight — AS BUILT — Rear Axle: _____ lb (kg)
8) Total Curb Weight — AS BUILT: _____ lb (kg)
9) CUSTOMER USABLE Total Payload AS BUILT (item 4 minus item 8): _____ lb (kg)
10) CUSTOMER USABLE Front Axle Payload AS BUILT (item 2 minus item 6): _____ lb (kg)
11) Total Weight of Permanently mounted Options Specified (only required if item 9 does not meet or exceed item 5): _____ lb (kg)
12) Payload of Basic Vehicle (item 9 plus item 11) (only required if item 9 does not meet or exceed item 5): _____ lb (kg)

FIGURE 4.17.4.1 Payload Calculation Form.

4.18 Statement of Exceptions.

The entity responsible for final assembly of the ambulance shall deliver with the ambulance either a certification that the ambulance fully complies with all requirements of this standard or, alternatively, a Statement of Exceptions specifically describing each aspect of the completed ambulance that is not fully compliant with the requirements of this standard at the time of delivery.

4.18.1 The Statement of Exceptions shall contain, for each noncompliant aspect of the ambulance or missing required item, the following information:

- (1) A separate listing of the section(s) of the applicable standard for which compliance is lacking
- (2) A description of the particular aspect of the ambulance that is not in compliance therewith or required equipment that is missing
- (3) A description of the further changes or modifications to the delivered ambulance that must be completed to achieve full compliance
- (4) Identification of the entity that will be responsible for making the necessary post delivery changes or modifications or for supplying and installing any missing required equipment to the ambulance to achieve full compliance with this standard

4.18.2 Prior to, or at the time of, delivery of the ambulance, the Statement of Exceptions shall be signed by an authorized agent of the entity responsible for final assembly of the ambulance and by an authorized agent of the purchasing entity, indicating mutual understanding and agreement between the parties regarding the substance thereof.

4.18.3 An ambulance that is delivered subject to a Statement of Exceptions other than a certification of full compliance shall not be placed in emergency service until the ambulance has been modified as necessary to accomplish full compliance with this standard.

Chapter 5 Chassis

5.1 Carrying Capacity.

5.1.1 The manufacturer shall establish the estimated in-service weight during the design of the ambulance.

5.1.2 The estimated in-service weight shall include the following:

- (1) The chassis and body
- (2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs
- (3) Equipment load prescribed by the purchaser
- (4) 171 lb (78 kg) in each designated seating position
- (5) 171 lb (78 kg) to account for patient
- (6) Patient cot
- (7) 200 lb (91 kg) spare capacity

5.1.3 The manufacturer shall design the ambulance such that the completed ambulance, when loaded to its estimated in-service weight, with all movable weights distributed as close as is practical to their intended in-service configuration, does not exceed the GVWR or GAWRs.

5.1.4 Label.

5.1.4.1 The ambulance manufacturer shall provide a high-visibility label in a location visible to the driver while seated.

5.1.4.2* The label shall show the height of the completed ambulance in feet and inches or in meters, and the GVWR in tons or metric tons.

5.2* Weight Distribution.

5.2.1 Longitudinal Weight Distribution.

5.2.1.1 When the ambulance is loaded to its estimated in-service weight, the front-to-rear weight distribution and vertical center of gravity shall be within the limits set by the chassis manufacturer.

5.2.1.2 The front GAWR shall be not less than 20 percent of the GVWR.

5.2.1.3 The rear GAWR shall be not less than 50 percent of the GVWR.

5.2.2* Lateral Weight Distribution.

The vehicle, when loaded to its estimated in-service weight, shall have a side-to-side tire load variation of no more than 5 percent of the total tire load for that axle.

5.2.3 The front axle loads shall not be less than the minimum axle loads specified by the chassis manufacturer under full load and all other loading conditions.

5.2.4 Vehicle and component ratings shall be the manufacturer's published ratings and shall not be modified without written authorization from the OEM.

5.2.5 The manufacturer shall design the ambulance to comply with the gross axle weight ratings (GAWR), the overall gross vehicle weight rating (GVWR), and the chassis manufacturer's load balance guidelines.

5.3 Engine and Engine System Design.

5.3.1 Cold Start Performance Requirements.

5.3.1.1 The chassis engine shall start and run for 5 minutes without stalling at 0°F (-18°C) without the use of external power or starting fluids and without the aid of engine block preheating devices (except glow plugs or combustion air pre-heater).

5.3.1.2 Compliance shall be validated by testing a substantially similar ambulance in accordance with Section 9.22.

5.3.2 Indicators shall be provided to alert the driver to high engine temperature or low oil pressure conditions.

5.3.3 An engine hourmeter shall be provided.

5.3.4 Idle reduction engine shut-down device shall be disabled if provided in accordance with federal and state exemptions.

5.4 Engine Speed Auxiliary Control Device.

5.4.1* An engine speed auxiliary control device (high idle switch or throttle) shall be installed to allow an increase in the engine speed when the ambulance is parked.

5.4.2 An interlock shall prevent the operation of the engine speed auxiliary control device unless the parking brake is engaged and the transmission is in neutral or park, or the parking brake is engaged and the engine is disengaged from the drive wheels.

5.5 Cooling System.

5.5.1* The engine's cooling system shall maintain a temperature at or below the engine manufacturer's maximum coolant temperature.

5.5.2 Compliance of the engine's cooling system shall be validated by testing a substantially similar ambulance in accordance with Section 9.14.

5.6 Exhaust System.

5.6.1 The exhaust piping and discharge outlet shall be located or shielded so as not to expose any portion of the ambulance or equipment to excessive heating.

5.6.2 Where parts of the exhaust system are exposed so that they are likely to cause injury to operating personnel, protective guards shall be provided.

5.6.3 The tailpipe outlet shall not terminate within 12 in. (300 mm) of the vertical axis of the fuel fill opening, oxygen storage, or patient entry doors when these features are located on the same side of the vehicle.

5.6.4 If the ambulance is driven by a diesel engine equipped with a diesel particulate filter (DPF), the DPF shall not regenerate on its own unless the vehicle is in motion.

5.7 Braking System.

5.7.1 All brakes shall be readily accessible for inspection.

5.7.2 Where air-actuated braking systems are provided, they shall include the following:

- (1) An automatic moisture ejector
- (2) An air dryer
- (3) A pressure protection valve to prevent all air-operated accessories from drawing air from the air brake system when the air system's pressure drops below 80 psi (550 kPa)

5.7.3* Any time a secondary braking device such as transmission retarders or exhaust restriction devices are used, they shall have a switch to turn them off during adverse road conditions.

5.8 Suspension.

5.8.1* With the exception of the OEM's furnished and installed components, the ambulance shall provide not less than the following clearance, measured in accordance with SAE J689:

- (1) Approach angle 20 degrees
- (2) Ramp breakover 10 degrees
- (3) Departure angle 10 degrees

5.8.2* A traction control feature shall be provided.

5.8.3 Shock absorbers, double-acting type, heaviest duty available from OEM for model offered, shall be furnished on the front and rear axles.

5.8.4 Any ambulance with an air-ride suspension shall include an air dryer and automatic heated moisture ejection devices to ensure that the air system is provided with dry and protect the suspension control components.

5.9 Wheels and Tires.

5.9.1 Wheel/tire, hubs, and brake drum assemblies of the vehicle shall be dynamically balanced to a minimum of 70 mph (113 km/hr).

5.9.2 Hub caps or wheel covers shall not obscure the wheel nuts so that they can be readily observed for daily inspection.

5.9.3 Mud flaps, at least as wide as the tire(s), shall be provided behind the front and rear wheels and shall be reinforced at the point of attachment to the vehicle. Mud flaps may be incorporated into the running boards.

5.9.4 Clearance for tire chains shall be provided for rear wheels in accordance with SAE J683, Tire Chain Clearance — Trucks, Buses (Except Suburban, Intercity, and Transit Buses), and Combinations of Vehicles.

5.9.5 Bodies designed with wheel openings shall have the rear wheels centered, within +/- 2 in. (+/- 52 mm) of those openings.

5.9.6* Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.

5.10* Vehicle Stability.

The ambulance shall meet the requirements of either 5.10.1 or 5.10.2.

5.10.1 The ambulance shall be equipped with a stability control system, the system shall have, at a minimum, a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls.

5.10.2 The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr).

5.11 Bumpers.

5.11.1* OEM's standard front bumper shall be furnished in the front of the chassis.

5.11.2 The rear of the ambulance shall be furnished with a full-width bumper.

5.11.2.1 The rear bumper shall be secured to the vehicle's chassis frame.

5.11.2.2 Each rear bumper shall be provided with an integrated step.

5.11.2.3 The step shall be designed to prevent the accumulation of mud, ice, or snow and made of anti-skid open grating material.

5.11.2.4 The step shall not be located or exposed to the interior of the ambulance when the door(s) are closed.

5.11.2.5 The step shall be at least the width of the door opening for which it is provided.

5.11.2.6 The stepping surface shall have a minimum depth of 5 in. (127 mm) and a maximum depth of 10 in. (254 mm)

5.11.2.7 If the step protrudes more than 7 in. (178 mm) from the rear of the vehicle, a fold-up step shall be furnished.

5.11.2.8 Rear Stepping Surface

5.11.2.8.1 The rear stepping surface shall withstand a load of 500 lb (227 kg) with no more than 1.0 in. (25.4 mm) of deflection nor more than 0.25 in. (6.4 mm) of permanent deformation.

5.11.2.8.2 Compliance of the rear step surface shall be validated by testing a substantially similar ambulance or bumper and step structure in accordance with Section 9.18.

5.11.2.9 The height of the rear step shall not exceed 22 in. (559 mm) with the vehicle loaded to its estimated in-service weight and/or the suspension in the kneeling condition.

5.12 Cab Seal.

5.12.1 If the cab and patient compartment are separate enclosures, the cab shall be provided with a sealing device.

5.12.2 The seal shall be fabricated from a material resistant to ozone, sunlight, oil, and fungus.

5.12.3 The seal shall remain flexible in temperatures between -20°F (-29°C) and 110°F (43°C).

5.12.4 The seal shall be designed for proper fit and finish and be able to absorb lateral, vertical, and torsional displacement due to body/cab movement.

5.13 Front Seats.

5.13.1 Driver and front passenger seating shall consist of two individual bucket-type seats.

5.13.2 The driver's seat shall have the OEM's full, unobstructed seat track travel range of longitudinal adjustment and a minimum of 30 percent of the range of inclination, but not less than the angle furnished on the OEM's standard non-reclining high back seat.

5.14* Mirrors.

5.14.1 Dual side-view mirrors having a combination flat and convex mirror system shall be furnished.

5.14.2 The mirrors shall be the largest available from the chassis OEM.

5.14.3 All primary side view mirrors used by the driver shall be adjustable from the driver's position.

5.14.4 Hardware and mirror heads shall have a corrosion resistant exterior finish.

5.15 Cab Integrity.

Cabs on ambulances with a GVWR greater than 26,000 lb (11,800 kg) shall meet the requirements of one of the following sets of standards:

(1) SAE J2420, COE Frontal Strength Evaluation — Dynamic Loading Heavy Trucks, and SAE J2422, Cab Roof Strength Evaluation — Quasi-Static Loading Heavy Trucks

(2) ECE Regulation number 29, Uniform Provisions Concerning the Approval of Vehicles with Regard to the Protection of the Occupants of the Cab of a Commercial Vehicle

Chapter 6 Patient Compartment

6.1 Patient Compartment Configuration.

The patient compartment shall provide a minimum of 325 ft³ (9.2 m³) of space or 275 ft³ (7.7 m³) of space for a Type II, less volume for cabinets, while complying with 6.1.1 through 6.1.3.

6.1.1 A minimum of 10 in. (254 mm) shall be provided, from the rear edge of the cot mattress to the rear loading doors, to permit clearance for traction or long board splints.

6.1.2 The compartment shall provide a minimum of 12 in. (300 mm) of clear aisle walkway on at least one side of the patient cot.

6.1.3 The patient compartment shall provide at least 60 in. (1.5 m) height, over the primary patient area, measured from floor to ceiling panels.

6.2 Mounting.

If the body is of a modular construction it shall be supported by full floating, automotive style, rubber body mounts.

6.3 Structural Integrity – Roof Loading.

6.3.1 Any Type I ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to the roof of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with Section 9.1.

6.3.2 Any Type II ambulance body shall withstand a force equal to 1.5 times the curb weight of the vehicle applied to the roof of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with Section 9.1.

6.3.3 Any Type III ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to the roof of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with Section 9.1.

6.3.4 The downward vertical movement at any point on the roof application plate shall not exceed 5.12 in. (130 mm).

6.3.5 Each exterior exit door of the vehicle shall be capable of opening and closing during the full application of the force and after release of the force.

6.3.6 No structural damage to any load bearing or supporting members (i.e., torn or broken material, broken welds, popped or sheared body rivets, bolts and/or fasteners) shall be evident during the application of the force and after the release of the force.

6.4 Body Structural Integrity – Side Loading.

6.4.1 Any Type I ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to either the driver or passenger side of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with Section 9.1.

6.4.2 Any Type III ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to either the driver or passenger side of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with Section 9.1.

6.4.3 The downward vertical movement at any point on the side application plate shall not exceed 5.12 in. (130 mm).

6.4.4 The rear doors of the vehicle shall be capable of opening and closing during the full application of the force and after release of the force.

6.4.5 No structural damage to any load-bearing or supporting members (i.e., torn or broken material, broken welds, popped or sheared body rivets, bolts and/or fasteners) shall be evident during the application of the force and after the release of the force.

6.5 Body Sealing.

6.5.1 Sealing Out Water.

6.5.1.1 There shall be no water leakage into the cab, any exterior compartment, the patient compartment, or through any door seal, light seal, or cab-to-module seal.

6.5.1.2 Compliance of the body sealing out water shall be validated by testing a substantially similar ambulance in accordance with Section 9.10.

6.5.2 Sealing Out Exhaust Gas.

6.5.2.1 The body shall be sealed and vented so that the interior carbon monoxide level does not exceed 10 ppm of CO above ambient conditions.

6.5.2.2 The patient compartment shall include a carbon monoxide detector.

6.6 Wheel Housings.

6.6.1 Wheel housings of modular bodies shall include metal or plastic splash shields between the body wheel housing and the wheels extending over the top of the tires to the bottom of the body side skirting.

6.6.2 Wheel house openings shall allow for tire chain usage and easy tire removal and service and conform to SAE J683.

6.6.3 Type II OEM's standard wheel housings shall be acceptable.

6.7 Patient Compartment to Cab Partition.

6.7.1 Where a bulkhead partition is provided it shall be placed between the driver and patient's compartment.

6.7.2 The partition(s) shall be located directly behind the driver and cab passenger seats when in the rearmost position

6.7.3 The partition shall extend from the floor to the ceiling.

6.7.4 The partition shall be wide enough to cover the width of each cab seat excluding arm rests.

6.7.5 The ambulance and body bulkheads shall have an aligned window opening of at least 150 in.2 (139 mm2) or other means of visual and hands free audio communication.

6.7.6 If equipped with a window in the cab or body it shall be of the sliding type, shall be aligned, and connect with the modular body window opening.

6.7.7 The window shall be latchable from the cab side and shall be a transparent, shatterproof panel.

6.8 Access Handrails or Handholds.

6.8.1 Interior or exterior access handrails or handholds shall be provided at each entrance to a driving or crew compartment and at each position where steps or ladders for climbing are located.

6.8.2 Exterior access handrails shall be constructed of or covered with a slip-resistant, noncorrosive material.

6.8.3 Exterior access handrails shall be between 1 in. and 1 5/8 in. (25 mm and 42 mm) in diameter and have a minimum clearance between the handrails and any surface of at least 2 in. (50 mm).

6.8.4 All exterior access handrails shall be designed and mounted to reduce the possibility of hand slippage and to avoid snagging equipment, or clothing.

6.8.5 Handrails and handholds shall be constructed so that three points of contact (two hands and one foot, or one hand and two feet) can be maintained at all times while ascending and descending.

6.8.6 Access handrails supplied by the chassis manufacturer on a commercial chassis shall be permitted to be used to meet the requirements of this section.

6.8.7 Handrail Testing.

6.8.7.1 Handrails shall withstand a force of 300 lb (136 kg) applied in any direction without detaching, loosening, or permanently deforming.

6.8.7.2 Compliance of the handrail shall be validated by testing a substantially similar ambulance or body structure in accordance with Section 9.8.

6.9 Patient Compartment Entry Doors.

6.9.1 Door handles shall be designed and installed to protect against accidental or inadvertent opening.

6.9.2 Doors shall be designed to minimize inadvertent snagging of apparel.

6.9.3 Door latches, hinges, and hardware furnished by OEM and FSAMs shall meet the performance requirements of FMVSS 206.

6.9.4 When doors are open, the hinges, latches, and door-checks shall not protrude into the access area.

6.9.5 Doors shall have hardware or devices to prevent inadvertent closing.

6.9.6 One externally operated lock for each door opening shall be provided.

6.9.7 An internal lock on each patient compartment primary entry door shall be provided.

6.9.8 If a key lock is provided all patient compartment entry door locks shall be identically keyed.

6.9.9 Doors shall be equipped with not less than 250 in.² (161.3 m²) of safety glass area per door.

6.9.10 Doors shall be sealed to prevent leakage of exhaust fumes, dust, water, and air.

6.9.11 Doors shall, in addition to meeting applicable FMVSS standards, withstand the loads on the latches and hinges listed in Table 6.9.11 when tested in accordance to Section 9.2.

Table 6.9.11 Loads Withstood on Ambulance Door Latches and Hinges (not provided))

6.9.11.1 Compliance of the door shall be validated by testing on a patient compartment sample of a substantially similar design.

6.9.11.2 During these tests the door(s) or its retention components shall not do either of the following:

(1) Open at any time during the test procedure

(2) Fail at the latch, striker(s), hinge, or their points of attachment to the door or the body framework

6.10 Means of Escape.

6.10.1 Any interior area to be occupied by personnel shall have a minimum of two means of escape.

6.10.2 Each means of escape opening shall be a minimum of 24 in. × 24 in. (610 mm × 610 mm).

6.11 Steps.

6.11.1 Steps shall be provided in the door openings.

6.11.2 Height of the bottom step shall not exceed 22 in. (559 mm).

6.11.3 Step wells shall be illuminated.

6.11.4 Step surfaces shall be constructed with anti-slip material.

6.11.5* All steps shall have a minimum area of 35 in.² (22,580 mm²), shall be of such a shape that a 5 in. (125 mm) diameter disk does not overlap any side when placed on the step, and shall be arranged to provide at least 8 in. (200 mm) of clearance between the leading edge of the step and any obstruction.

6.12 Exterior Stepping Surfaces.

All materials used for exterior surfaces designated as stepping, standing, and walking areas and all interior steps shall have a minimum slip resistance in any orientation of 0.68 when tested wet using the English XL tester in accordance with the manufacturer's instructions or 0.52 when tested wet using the Brungraber Mark II tester in accordance with the manufacturer's instructions.

6.13 Exterior Storage.

6.13.1 Exterior storage shall be furnished for all equipment specified by the purchaser.

6.13.2 Exterior storage compartments shall be weather resistant.

6.13.3 Doors shall provide secure closure properties.

6.13.4 All hinged doors wider than 14 in. (356 mm) and excluding battery compartments shall have positive hold open devices that permit one hand closure.

6.13.5 Hardware (hinges, locks, latches, etc.) shall be rust resistant.

6.13.6 All primary exterior compartment doors shall have latches with locks.

6.13.7 If key locks are provided they shall be keyed alike.

6.13.8 All exterior compartments greater than 4 ft³ (0.11 m³) shall be automatically illuminated when opened.

6.13.9 Any absorbent material such as carpeting, fabric, or inside/outside plastic type carpeting, etc. that resists cleaning and decontamination shall not be used.

6.14 Floor.

6.14.1 The patient compartment floor shall be flat, except when the area near the rear entrance door is sloped for a lower entering height.

6.14.2 With the exception of cot related hardware, the floor shall be unencumbered in the door(s) access and work area.

6.14.3 The sub floor of the modular body patient compartment shall be designed to prevent water penetration.

6.14.4 The sub floor of the modular body shall include a heat shield.

6.14.5 The floor shall be designed to eliminate voids or pockets, where water or moisture can become trapped.

6.14.6 The sub floor construction shall cover the full length and width of the patient compartment.

6.14.7 The sub floor of the patient compartment shall be not less than 0.5 in. (13 mm) thick.

6.14.8 The sub floor material shall be non-hygroscopic.

6.14.9 If plywood is used in the sub floor it shall be marine or exterior grade.

6.14.10 Body Floor Structural Integrity.

6.14.10.1 Sub floor shall have an American Plywood Association (APA) floor rating of 16 in. (406 mm) on center or shall be tested using a 3 in. (76 mm) disk, having a maximum of 0.125 in. (3 mm) deflection at 200 pounds (91 kg) force, and an ultimate load of 400 lbs (181 kg).

6.14.10.2 In the case where the floor structure spacing is greater than 16 in. (406 mm) on center or a non-rated material is used; the maximum floor structure spacing shall be used for testing.

6.14.10.3 Compliance of the floor structural integrity shall be validated by testing the mid-point of the longest unsupported section of a substantially similar ambulance or floor structure in accordance with the concentrated static load test procedure in ASTM E661.

6.15 Floor Covering.

6.15.1 Floor covering shall be non permeable, seamless and easily cleaned.

6.15.2 The floor covering shall cover the entire length and width of the compartment's working area. The covering of joints (corners, etc.), where the sidewalls and covering meet, shall be sealed and bordered with corrosion resistant cove molding or the covering shall extend at least 3 in. (76 mm) up the sidewalls.

6.16 Insulation.

6.16.1 Where the patient compartment is insulated it shall be insulated with a non-settling type, vermin-proof, mildew-proof, fire retardant, non-toxic, and non-hygroscopic.

6.16.2 If fiberglass insulation is used, it shall be protected from exposure to water.

6.17* Interior Storage.

6.17.1 The interior of the patient compartment shall provide a minimum volume of 30 ft³ (0.85 m³) of enclosed storage cabinetry, compartment space, and shelf space.

6.17.2 Compartment(s) under the floor, with opening panel(s) inside the patient compartment, shall not be acceptable.

6.17.3 When furnished, top opening squad bench lids shall be fitted with an automatic hold open device and a quick release slam type latching device when closed.

6.17.4 All interior systems, components and permanently attached equipment shall function satisfactorily over a temperature range of 32°F (0°C) to 95°F (35°C).

6.17.4.1 Compliance of the equipment function shall be validated by testing a substantially similar ambulance in accordance with Section 9.11.

6.17.4.2 The ambulance and all systems, components and equipment shall be capable of being stored at 32°F (0°C) to 95°F (35°C) without damage or deterioration.

6.17.5 Storage compartment doors shall be provided with low profile handles.

6.17.6 Storage compartments shall be divided into sections.

6.17.7 Drawer slides shall be self-locking.

6.17.8 Shelves shall be removable.

6.17.9 Doors shall remain closed during transport.

6.17.10 Storage compartments shall be firmly fastened to the body structure.

6.18 *Cabinet Measuring.

6.19 Interior Surfaces.

6.19.1 The interior of the body shall be free of all sharp projections and sharp corners.

6.19.2 All hangers or supports for equipment and devices shall be mounted as flush as possible with the surrounding surface.

6.19.3 The finish of the entire patient compartment and exterior storage, including interiors of storage cabinets, shall be as follows:

(1) Impervious to soap, water, body fluids, and disinfectants

(2) Mildew resistant

(3) Fire resistant in compliance with FMVSS 302

(4) Able to be cleaned and disinfected

6.19.4 Counter tops and shelves shall be surrounded by a lip of not less than 0.5 in. (13 mm) in height.

6.19.5 Counter top horizontal surface shall be seamless and impervious to contaminants.

6.19.6 All edges that meet vertical cabinets shall be sealed.

6.20 Equipment Mounting.

Supplies, devices, tools, etc., shall be stored in enclosed compartments or fastened to secure them during vehicle motion.

6.21 Waste and Sharps Disposal.

A receptacle for general waste and an OSHA compliant container for sharps disposal shall be provided in the patient compartment.

6.22 Holder For Intravenous Fluid Containers.

6.22.1 One ceiling mounted "hook" style device specifically designed for holding IV containers shall be provided, including hook and loop straps to adequately secure an IV bag/bottle.

6.22.2 The device shall not protrude more than 1.0 in. (25 mm).

6.23 Personnel Capacity.

A label that states the maximum number of occupants the vehicle is designed to carry shall be located in an area visible to the driver.

6.24 Patient Compartment Seats.

6.24.1 Seat Integrity.

Any independent seat with integrated belt system (ABTS) shall be dynamically tested by the seat manufacturer in accordance with FMVSS 208 for any locked orientation in which it will be installed.

6.24.2* SCBA Storage.

SCBA packs shall not be stored in the seat backs of seats in the patient compartment.

6.24.3 Seat Belts.

6.24.3.1* Each crew riding position shall be provided with a seat belt.

6.24.3.2 Ambulances above 19,500 lb (8,845 kg) GVWR shall provide seat belts in accordance with 6.24.3.2.1 and 6.24.3.2.2.

6.24.3.2.1 The effective seat belt web length for a Type 1 lap belt for pelvic restraint shall be a minimum of 60 in. (1524 mm) with the seat adjusted all the way back and down when measured using the following procedure:

(1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (line 1 in Figure 6.24.3.2.1). For seats with an SCBA seat back, use a plane that simulates the position of an SCBA back pad installed in the SCBA holder.

(2) Locate point A on line 1 at the outside of the seat on the retractor side of the seat.

(3) Locate point C on line 1 at the outside of the seat on the receiver side of the seat.

(4) Locate point D at the tip of the receiver.

(5) Pull the seat belt webbing entirely out of the retractor and measure along the webbing between point A and the male seat belt buckle. Record this length as AD.

(6) Measure from point C to point D and record this length as CD.

(7) The effective seat belt web length equals AD + CD.

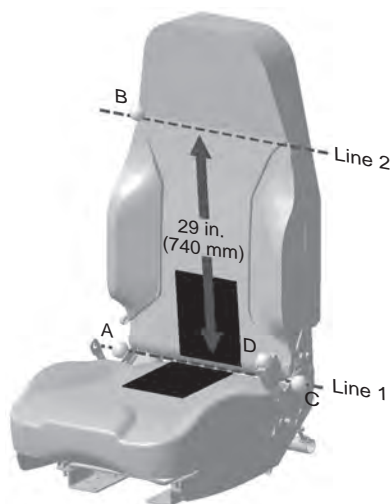


FIGURE 6.24.3.2.1 Dimension Lines for Measuring Seat Belt Effective Length.

6.24.3.2.2 The effective seat belt web length for a Type 2 pelvic and upper torso restraint-style seat belt assembly shall be a minimum of 110 in. (2800 mm) with the seat adjusted all the way back and down when measured using the following procedure:

(1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (line 1 in Figure 6.24.3.2.1). For seats with an SCBA seat back, use a plane that simulates the position of an SCBA back pad installed in the SCBA holder.

(2) Locate an imaginary line parallel with line 1 and lying on the center of the seat back surface 29 in. (740 mm) from line 1 (line 2 in Figure 6.24.3.2.1).

(3) Locate point A on line 1 at the outside of the seat on the retractor side of the seat.

(4) Locate point B on line 2 at the shoulder strap edge of the seat back.

(5) Locate point C on line 1 at the outside of the seat on the receiver side of the seat.

(6) Locate point D at the tip of the receiver.

(7) Pull the seat belt webbing entirely out of the retractor and measure along the webbing between points A and B. Record this length as AB.

(8) Measure from point C to point D and record this length as CD.

(9) The effective seat belt web length equals AB + 2CD.

6.24.4 Seated Head Clearance.

6.24.4.1 The minimum seat-to-ceiling dimension from the top surface of the seat bottom cushion to the nearest overhead obstruction for each designated seating position shall be 43 in. (1092 mm).

6.24.4.2 The measurement shall be in accordance with Section 9.25.

6.24.4.3 When independent horizontal seat adjustment is provided, it shall be fully adjustable within 10 seconds.

6.24.5 Seating Position Width.

Each designated seating space in vehicles greater than 10,000 lb (4,500 kg) GVWR shall have a minimum width of 24 in. (610 mm) at the shoulder height.

6.24.6 Seat Size.

6.24.6.1 Seat bottom cushions shall be a minimum of 18 in. (460 mm) in width.

6.24.6.2 Seat bottom cushion shall be between and 15 in. (380 mm) and 19 in. (483 mm) from the front of the cushion to the face of the seat back.

6.24.6.3 A back cushion that extends from the face of the seat vertically at least 7.0 in. (460 mm) and that is a minimum of 18 in. (460 mm) wide at the base shall be provided.

6.24.6.4 Each seat shall provide back and head support beginning no more than 24 in. (610 mm) above the seat bottom cushion and continuing to at least 36 in. (914 mm) above the seat bottom cushion.

6.24.6.5 The top of the seat back or head rest shall be a minimum of 10 in. (254 mm) in width.

6.24.7 Access to Patient.

6.24.7.1 If the designated Primary Patient Care Seat is the Patient Torso Position it shall be capable of being adjusted such that the nearest edge of the seat bottom cushion can be positioned no less than 6 in. (152 mm) from the nearest edge of the Patient Cot.

6.24.7.2 The fore-aft position of the seat shall line up within 6 in. (152 mm) of the centerline of the torso as defined by the cot manufacturer.

6.24.7.3 If the designated Primary Patient Care Seat is the Patient Head Position it shall be capable of being adjusted such that the nearest edge of the seat bottom cushion positioned no less than 6 in. (152 mm) from the nearest edge of the Patient Cot.

6.24.7.4 The longitudinal centerline of the seat shall line up within 11 in. (280 mm) of the longitudinal centerline of the cot.

6.24.8 Child Seating Restraints.

6.24.8.1 Any seat capable of transporting a child or infant shall not be oriented in a side facing direction during transport.

6.24.8.2 If the purchaser specifies that the ambulance will transport infants in a seat it shall include an Infant Restraint Seat or have provisions to accommodate an infant seat.

6.24.8.3 If the purchaser specifies that the ambulance will transport children in a seat it shall include a Child Restraint Seat or have provisions to accommodate a child seat.

6.25 Patient Cot Retention.

6.25.1 Each Patient Cot retention system shall not fail or release when subjected to the cot manufacturers recommended load or a minimum force of 2,200 lb (998 kg) applied in the longitudinal, lateral, and vertical direction.

6.25.2 Compliance of the cot retention system shall be validated by testing a sample retention device using a substantially similar ambulance or body structure in accordance with Section 9.4.

6.26 Seat Belt Indication.

6.26.1 Signs that read "Occupants Must be Seated and Belted When Ambulance Is in Motion" shall be visible from each seated position.

6.26.2 A seat belt warning system shall be provided.

6.26.3 The warning system shall consist of an audible warning device that can be heard at all seating positions designed to be occupied while the vehicle is in motion and a visual display visible to the driver showing the condition of each seating position.

6.26.4 The warning shall be activated anytime the parking brake is released or the automatic transmission is not in park.

6.26.5 The seat position display shall indicate conditions in accordance with Table 6.26.5.

Table 6.26.5 Display for Seating System

Display Indication	Seat Belt	Seat Sensor
Affirmative indication	Buckled	Senses occupant
Negative indication	Buckled	No occupant
Negative indication	Unbuckled	Senses occupant
Dark	Unbuckled	No occupant

6.26.6 The display indication shall be permitted to consist of lights, text, graphical indicators, digital displays, or other methods.

6.26.7 The warning system shall not show an affirmative indication unless it has determined that the seat was occupied before the seat belt was buckled.

6.27 HVAC.

6.27.1 HVAC units shall be independently controlled between the driving and patient compartments.

6.27.2 Connecting hoses for heating and the air conditioning system shall be supported by rubber-insulated metal clamping devices at least every 18 in. (457 mm).

6.27.3 Heating.

6.27.3.1 A heating system shall be provided capable of raising the interior temperature from 32° F to 68° F (0° C to 20° C) within 30 minutes.

6.27.3.2 Compliance of the heating system shall be validated by testing a substantially similar ambulance in accordance with Section 9.12.

6.27.4 Air Conditioning.

6.27.4.1 An air conditioning system shall be provided capable of lowering the interior temperature from 95° F to 78° F (35° C to 25° C) at a minimum of 40 percent relative humidity within 30 minutes.

6.27.4.2 Compliance of the air conditioning system shall be validated by testing a substantially similar ambulance in accordance with Section 9.12.

6.27.5 Ventilation.

6.27.5.1 Ventilation system(s) of the driver and patient compartments shall provide a change of ambient air within both compartments with the vehicle stationary.

6.27.5.2 Ventilation shall be separately controlled within the cab and patient compartments.

6.27.5.3 Fresh air intakes shall not be located near the engine exhaust outlet.

6.27.5.4 Fresh air exhaust fan shall provide a minimum of 400 cfm (11 m³/min).

6.28 Interior Noise.

6.28.1 The interior sound level in the patient compartment shall not exceed 80 decibels.

6.28.2 Compliance of the patient compartment interior sound shall be validated by testing a substantially similar ambulance in accordance with Section 9.6.

6.29* Reflective Striping.

6.29.1* A retroreflective stripe or combination of stripes shall be affixed to the ambulance in the following proportions:

(1) 25 percent of the width of the front of the apparatus visible when approaching from the front.

(2) 50 percent of the over-all ambulance length visible when approaching from each side

6.29.1.1 At least 50 percent of the rear-facing vertical surfaces, visible from the rear of the ambulance shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees.

6.29.1.2 Each stripe in the chevron shall be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green.

6.29.1.3 Each stripe shall be 6 in. (150 mm) in width.

6.29.2 The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total vertical width.

6.29.3 The 4 in. (100 mm) wide stripe or combination of stripes shall be permitted to be interrupted by objects (i.e., receptacles, cracks between slats in roll up doors, and so forth) provided the full stripe is seen as conspicuous when approaching the apparatus.

6.29.4 A graphic design shall be permitted to replace all or part of the required striping material if the design or combination thereof covers at least the same perimeter length(s) required by 6.29.1.

6.29.5 Any vertically hinged door shall have at least 60 in.2 (38710 mm²) of retroreflective material affixed to the inside of the door.

6.29.6 All retroreflective shall conform to the requirements of ASTM D 4956, Standard Specification for Retroreflective Sheeting for Traffic Control, Section 6.1.1 for Type I Sheeting.

6.29.7 All retroreflective materials that are colors not listed in ASTM D 4956, Section 6.1.1, shall have a minimum coefficient of retroreflection of 10 with observation angle of 0.2 degrees and entrance angle of -4 degrees.

6.29.8 Any printed or processed retroreflective film construction shall conform to the standards required of an integral colored film as specified in ASTM D 4956, Section 6.1.1.

6.30 Metal Finish.

Where dissimilar metals that pose a galvanic corrosion or reactive threat are to be mounted together, the mounting base material shall have an isolation barrier prior to assembly to prevent dissimilar metal reaction.

6.31 Painting.

6.31.1 All exposed ferrous metal surfaces that are not plated or stainless steel shall be cleaned and prepared and shall be painted or coated.

6.31.2 The paint or coating, including any primer, shall be applied in accordance with the paint or coating manufacturer's recommendation.

6.32 Oxygen, Main Supply and Installation.

6.32.1 The ambulance shall have a piped medical oxygen system capable of storing and supplying a minimum of 3,000 liters of medical oxygen.

6.32.2 The main oxygen supply shall be from a compressed gas cylinder(s) that the purchaser will provide and install at the time the vehicle is placed in service.

6.32.3 A cylinder changing wrench shall be furnished.

6.32.4 The wrench shall be tethered and secured within the oxygen cylinder compartment.

6.32.5 The cylinder controls shall be accessible from the inside the vehicle.

6.32.6 A cylinder pressure indication device shall be visible from the designated primary patient care seating position.

6.32.7 The oxygen outlet shall be accessible from the designated primary patient care seating position

6.32.8 The purchaser shall specify the type of oxygen outlet.

6.32.9 Oxygen system shall include the following:

(1) A pressure regulator

(2) Low pressure, electrically conductive, hose and fittings approved for medical oxygen

(3) Oxygen piping shall be concealed and not exposed to the elements, securely supported to prevent damage, and be readily accessible for inspection and replacement.

(4) Oxygen shall be piped to a self-sealing oxygen outlet with a minimum flow rate of 100 LPM at the outlet.

(5) Outlet(s) shall be marked and identified and not interfere with the suction outlet

6.32.10 Oxygen Pressure Regulator.

6.32.10.1 The medical, oxygen pressure reducing, and regulating valve with inlet filter at the cylinder shall be provided with the following features:

1) Line relief valve set at 200 psi (1380 kPa) maximum

2) Gauge or digital monitor with a minimum range of 0 to 2,500 psi (17,237 kPa)

3) Gauge scale or digital monitor display graduated in not more than 100 psi (690 kPa) increments.

4) Locking adjustment, at 50 +/- 2 psi line pressure.

5) Regulator performance as required at an inlet pressure range from 150 psi to 2,500 psi (1,034 kPa to 17,237 kPa).

6.32.10.2 With the regulator set at 50 +/- 2 psi, a 100 LPM minimum flow rate shall be available at all oxygen outlets.

6.32.11 Oxygen Tank Storage.

6.32.11.1 Storage for the main oxygen cylinder shall be accessible for replacement from an outside position.

6.32.11.2 The oxygen compartment shall be provided with at least a 9 in.2 (580 mm²) of open vent to dissipate/vent leaking oxygen to the outside of the ambulance.

6.32.11.3 Oxygen cylinder compartment shall not be utilized for storage of any other equipment and shall be labeled "Oxygen Storage Only".

6.32.12 Oxygen Tank Retention.

6.32.12.1 Any oxygen tank shall be retained to withstand a force equal to 25 times the weight of a full tank for which the tank holder was designed.

6.32.12.2 The oxygen tank holder components shall not fail or separate along attachment points.

6.32.12.3 The oxygen tank holder or any component thereof shall not separate from the vehicle at any attachment point.

6.32.12.4 The part of the vehicle to which the oxygen tank holder is attached shall not fail and/or separate at any attachment point.

6.32.12.5 The simulated cylinder shall not disengage from the oxygen tank holder.

6.32.12.6 Compliance of the oxygen tank retention shall be validated by testing a sample retention device using a substantially similar ambulance or body structure in accordance with Section 9.3.

6.32.13 Oxygen System Integrity.

6.32.13.1 Each ambulance equipped with an oxygen system shall be tested prior to delivery.

6.32.13.1.1 The oxygen system shall lose no more than 5 psi (34 kPa) of pressure in a 2 hour period.

6.32.13.1.2 Oxygen flow through each outlet shall be capable of delivering at least 100 LPM of oxygen.

6.32.13.1.3 Compliance of the oxygen system integrity shall be validated by testing a sample system in a substantially similar ambulance in accordance with Section 9.15.

6.32.13.2 A label shall be provided near the oxygen tank stating: "This oxygen system was tested in accordance with NFPA 1917 and meets the requirements thereof".

6.32.13.3 This label shall be signed and dated by an authorized representative of the ambulance manufacturer or test agency.

6.33 Suction Aspirator.

6.33.1 An electrically powered suction aspirator system shall be furnished.

6.33.2 The vacuum control, vacuum indicator, and collection bottle or bag shall be located so that it can be operated from the primary patient care position.

6.33.3 The aspirator system shall be wired in accordance with Figure 6.33.3.

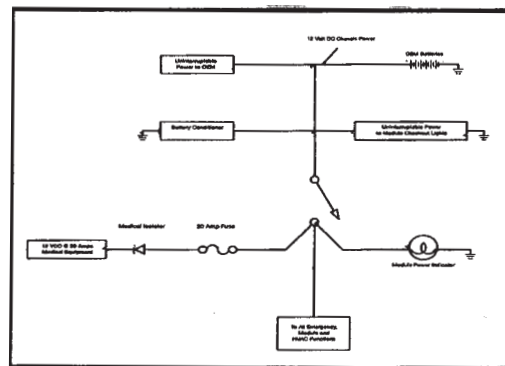


Figure 6.33.3 Aspirator System Wiring

6.33.4 The suction pump shall be located in an area that is accessible and insulated from the patient compartment.

6.33.5 The pump, when permanently mounted, shall be vented to the vehicle's exterior.

6.33.6 A vacuum control and a shut-off valve, or combination thereof, shall be provided to adjust vacuum levels.

6.33.7 A vacuum indicator gauge graduated at least every 100 mm Hg and a minimum total range of 0 to 760 mm Hg shall be provided.

6.33.8 The collection bottle or bag shall be shatter resistant and transparent with a minimum 1,000 mL capacity.

6.33.9 The minimum inside diameter for the suction tubing connectors shall be at least 1/4 in. (6.4 mm).

6.33.10 The end user shall provide any suctioning catheters desired.

6.33.11 Aspirator System Performance.

6.33.11.1 If an aspirator system is provided, it shall provide a free airflow of at least 30 Lpm.

6.33.11.2 If an aspirator system is provided, it shall achieve a minimum of 300 mm Hg vacuum within 4 seconds after the suction tube is closed.

6.33.11.3 Compliance of the aspirator system shall be validated by testing a sample aspirator system installed in a substantially similar ambulance in accordance with Section 9.21.

Chapter 7 Low Voltage Electrical Systems and Warning Devices

7.1* General.

Any low voltage electrical systems or warning devices installed on the ambulance shall be appropriate for the mounting location and intended electrical load and shall meet the specific requirements of Chapter 7.

7.1.1 Printed Circuits.

7.1.1.1 When printed circuits are utilized, they shall conform to IPC A-610D standards, "Acceptability of Electronic Assemblies."

7.1.1.2 Printed circuit assemblies provided shall qualify under Classification 1.4.1 as class 3 for "Life Support or other Critical Assemblies."

7.1.1.3 Printed circuit board connections and components shall conform to all other specification requirements.

7.1.2 Electrical System Performance Tests.

The low voltage electrical system performance test shall be done according to Section 9.5

7.2 Wiring.

7.2.1 All electrical circuit feeder wiring supplied and installed by the ambulance manufacturer shall meet the requirements of 7.2.1.1 through 7.2.1.6.

7.2.1.1* The circuit feeder wire shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for which the circuit is protected.

7.2.1.2 Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent.

7.2.1.3 The use of star washers for circuit ground connections shall not be permitted.

7.2.1.4 All circuits shall otherwise be wired in conformance with SAE J1292, Automobile, Truck, Truck-Tractor, Trailer, and Motor Coach Wiring.

7.2.1.5 Electrical wiring and components shall not terminate in the oxygen storage compartment except for the oxygen controlled solenoid, compartment light, and switch plunger or trigger device.

7.2.1.6 If electrical harnesses or wires pass through the oxygen compartment it shall be enclosed in conduit.

7.2.2 Wiring and Wire Harness Construction.

7.2.2.1 All insulated wire and cable shall conform to SAE J1127, Low Voltage Battery Cable, or SAE J1128, Low Voltage Primary Cable, type SXL, GXL, or TXL.

7.2.2.1.1 All conductors shall be constructed in accordance with SAE J1127 or SAE J1128, except where good engineering practice dictates special strand construction.

7.2.2.1.2 Conductor materials and stranding, other than copper, shall be permitted if all applicable requirements for physical, electrical, and environmental conditions are met as dictated by the end application.

7.2.2.1.3 Physical and dimensional values of conductor insulation shall be in conformance with the requirements of SAE J1127 or SAE J1128, except where good engineering practice dictates special conductor insulation.

7.2.2.2 The overall covering of conductors shall be moisture-resistant loom or braid that has a minimum continuous rating of 194°F (90°C) except where good engineering practice dictates special consideration for loom installations exposed to higher temperatures.

7.2.2.3 The overall covering of jacketed cables shall be moisture resistant and have a minimum continuous temperature rating of 194°F (90°C), except where good engineering practice dictates special consideration for cable installations exposed to higher temperatures.

7.2.2.4 All wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection.

7.2.2.4.1 The wiring connections and terminations shall be installed in accordance with the device manufacturer's instructions.

7.2.2.4.2 Wire nut, insulation displacement, and insulation piercing connections shall not be used.

7.2.2.5 All ungrounded electrical terminals and electrical panels shall have protective covers or be in enclosures.

7.2.2.6 A minimum 6 in. (152 mm) service loop of wire or harness shall be provided at all electrical components, terminals, and connection points.

7.2.2.7 All wiring connecting to exterior lights and fixtures shall utilize sealed connectors or splices.

7.2.2.8 Wiring Protection.

7.2.2.8.1 Wiring shall be restrained to prevent damage caused by chafing or ice buildup and protected against heat, liquid contaminants, or other environmental factors.

7.2.2.8.2 Wiring shall not be secured to brake lines and/or fuel lines.

7.2.2.9* Wiring Identification.

7.2.2.9.1 Wiring shall be uniquely identified at least every 2 ft (0.6 m) by color coding or permanent marking with a circuit function code.

7.2.2.9.2 The identification shall reference a wiring diagram. [See 4.17.2.3(6).]

7.2.2.10 Circuits shall be provided with properly rated low voltage overcurrent protective devices.

7.2.2.10.1 Such devices shall be readily accessible and protected against heat in excess of the overcurrent device's design range, mechanical damage, and water spray.

7.2.2.10.2 Circuit protection shall be accomplished by utilizing fuses, circuit breakers, fusible links, or solid state equivalent devices.

7.2.2.10.3 If a mechanical-type device is used, it shall conform to one of the following SAE standards:

- (1) SAE J156, Fusible Links
- (2) SAE J553, Circuit Breakers
- (3) SAE J554, Electric Fuses (Cartridge Type)
- (4) SAE J1888, High Current Time Lag Electric Fuses
- (5) SAE J2077, Miniature Blade Type Electrical Fuses

7.2.2.11 Terminals.

7.2.2.11.1 All terminals shall be permanently numbered or coded.

7.2.2.11.2 Terminal strip(s) block(s), or multi-pin connector(s) shall be readily accessible for checking and service.

7.2.2.12 The ambulance electrical system shall incorporate a master circuit breaker panel with circuit breakers or other electronic, non-disposable, current protection devices, in each circuit, which comply with SAE J553 Type I, or Type III (if circuit breaker is readily accessible for resetting by the driver or EMSP).

7.2.2.13 One extra 15 amp circuit breaker shall be provided for future use.

7.2.2.14 Grounding.

7.2.2.14.1 Dedicated grounds for all appliances, circuits, etc. shall be furnished.

7.2.2.14.2 The use of appliance mounting screws/hardware shall not be used for grounding purposes.

7.2.2.15 All switches, indicators, and controls shall be located and installed in a manner that facilitates easy removal and servicing.

7.2.2.16 Switches, relays, terminals, and connectors shall have a direct current (dc) rating of 125 percent of maximum current for which the circuit is protected.

7.2.2.17 The ambulance body and accessory electrical equipment shall be served by circuit(s) separate and distinct from vehicle chassis circuits.

7.3 Power Supply.

7.3.1 A 12 V or greater electrical alternator shall be provided.

7.3.2* Low Idle Alternator Output.

7.3.2.1 The alternator shall have a minimum output at low idle to meet the minimum continuous electrical load of the ambulance at 95°F (35°C) ambient temperature.

7.3.2.2 Compliance of the low idle alternator output shall be validated by testing a substantially similar ambulance in accordance with 9.5.3.3.

7.3.3 The alternator shall be provided with full automatic regulation.

7.3.4 High Idle Alternator Output.

7.3.4.1 The alternator shall have a minimum output at high idle to power the full system electrical load at 95°F (35°C) ambient temperature.

7.3.4.2 Compliance of the high idle alternator output shall be validated by testing a substantially similar ambulance in accordance with 9.5.2.3.

7.4 Minimum Continuous Electrical Load.

7.4.1* The minimum continuous electrical load shall consist of the total amperage required to simultaneously operate the following in a stationary mode during emergency operations:

- (1) The propulsion engine and transmission
- (2) All legally required clearance and marker lights, headlights, and other electrical devices except windshield wipers and four-way hazard flashers
- (3) The radio(s) at a duty cycle of 10 percent transmit and 90 percent receive (for calculation and testing purposes, a default value of 5 A continuous)
- (4) The lighting necessary to illuminate walking surfaces at entry points and 50 percent of the total compartment light load as required by this standard.
- (5) The minimum optical warning system required in Section 7.8, where the ambulance is blocking the right-of-way
- (6) The continuous electrical current required to simultaneously operate an additional 20 amp load.
- (7) Cab air conditioning (at coldest setting with highest blower speed).
- (8) Patient module air conditioning (at coldest setting with highest blower speed).
- (9) Patient module dome lighting (in the high intensity setting).
- (10)* Other warning devices and electrical loads defined by the purchaser as critical to the mission of the ambulance.

7.4.2 If the ambulance is equipped to tow a trailer, an additional 45 amps shall be added to the minimum continuous electrical load to provide electrical power for the federally required clearance and marker lighting and the optical warning devices mounted on the trailer.

7.4.3* The condition of the low voltage electrical system shall be monitored by a warning system that provides both an audible and a visual signal to persons on, in, or near the ambulance of an impending electrical system failure caused by the excessive discharge of the battery set.

7.4.3.1 The charge status of the battery shall be determined either by direct

measurement of the battery charge or indirectly by monitoring the electrical system voltage.

7.4.3.2 Voltage Alarm.

7.4.3.2.1 The alarm shall sound if the system voltage at the battery or at the master load disconnect switch drops below 11.8 V for 12 V nominal systems, 23.6 V for 24 V nominal systems, or 35.4 V for 42 V nominal systems for more than 120 seconds.

7.4.3.2.2 Compliance of the voltage alarm shall be validated by testing a substantially similar ambulance in accordance with 9.5.3.

7.4.4 A voltmeter shall be mounted on the driver's instrument panel to allow direct observation of the system voltage.

7.5 Load Management.

7.5.1* If the total continuous electrical load exceeds the minimum continuous electrical output rating of the installed alternator(s) operating under the conditions specified in 7.4.1, an automatic electrical load management system shall be required.

7.5.2 The minimum continuous electrical loads defined in 7.4.1 shall not be subject to automatic load management.

7.5.3 An Engine High-Idle speed control shall be furnished.

7.5.3.1 The control shall be set to automatically increase the engine speed (RPM) to the engine manufacturer's recommended setting to sustain the ambulance's total continuous electrical load at the regulated voltage and provide maximum heating/air conditioning output.

7.5.3.2 The device shall operate only when switched to the "ON" position and the transmission is in "PARK" or "NEUTRAL."

7.5.3.3 The parking brake shall be applied at all times when the Engine High-Idle speed control is in use.

7.5.3.4 The device shall disengage high idle operation according to the chassis manufacturer's and/or engine manufacturer's disablement strategy, or if not specified, when the operator depresses the service brake pedal, the parking brake is released or the transmission is placed in gear.

7.6* Batteries.

7.6.1 Continuous Electrical Load.

7.6.1.1 With the engine off, the battery system shall be able to provide the minimum continuous electrical load for 10 minutes without discharging more than 50 percent of the reserve capacity and then to restart the engine.

7.6.1.2 Compliance of the battery system shall be verified on every ambulance prior to delivery in accordance with 9.5.2.2.

7.6.2 The battery system cold cranking amps (CCA) rating shall meet or exceed the minimum CCA recommendations of the engine manufacturer.

7.6.3 The batteries shall be mounted to prevent movement during ambulance operation and shall be protected against accumulations of road spray, snow, and road debris.

7.6.3.1 The batteries shall be readily accessible for examination, testing, and maintenance.

7.6.3.2 Where an enclosed battery compartment is provided, it shall be ventilated to the exterior to prevent the buildup of heat and explosive fumes and separated from the occupant compartments.

7.6.3.3* The batteries shall be protected against vibration and temperatures that exceed the battery manufacturer's recommendation.

7.6.4 A means shall be provided for jump-starting the engine if the batteries are not accessible without lifting the cab of a tilt-cab ambulance.

7.6.5* An onboard battery conditioner or charger shall be provided for maintaining batteries in a fully charged condition.

7.6.6 Any associated line voltage electrical power system shall be installed in accordance with Chapter 8 Line voltage systems.

7.6.7* A master load disconnect switch shall be provided between the starter solenoid(s) and the patient compartment electrical loads.

7.6.8 Starter Solenoid

7.6.8.1 The starter solenoids shall be connected directly to the batteries.

7.6.8.2 Electronic control systems and similar devices shall be permitted to be otherwise connected if so specified by their manufacturer.

7.6.9 The alternator shall be wired directly to the batteries through the ammeter shunt(s), if one is provided, and not through the master load disconnect switch.

7.6.10 A sequential switching device shall be permitted to energize the optical warning devices required in Section 7.9 and other high current devices, provided the switching device shall first energize the electrical devices required in Section 7.9 within 5 seconds.

7.6.11 Two automotive "Power Point" type connectors shall be furnished in the patient compartment

for charging all portable battery powered devices (i.e. suction units, hand lights, defibrillators, portable radios, etc.).

7.6.11.1 The "Power Point" circuits shall prevent discharge of chassis batteries by only permitting the charging of portable devices when the vehicle is either running or the Automatic charger/Conditioner is connected to shore power.

7.6.11.2 The "Power Point" circuits shall be protected by a minimum 10 amp circuit breaker.

7.6.11.3 The "Power Point" circuits shall include a (low voltage drop) "Schottky" diode to isolate medical equipment batteries from any electrical loads that the remainder of the ambulance electrical system may impose.

7.6.11.3.1 The "Schottky" diode shall be heat-sink mounted, have an inverse voltage rating of at least 45 volts and also be rated to carry the maximum short circuit current, until the circuit breaker opens.

7.6.11.3.2 The diode shall be physically located in an accessible location and be electrically connected between the circuit breaker and the "Power Point" connectors.

7.6.12 An additional tagged, identified lead shall be furnished in both the cab and module for connection of additional (future) portable equipment that requires recharging.

7.7 Temperature Exposure.

Any alternator, electrical starting device, ignition wiring, distributor, or ignition coil shall be moisture resistant and protected such that it is not exposed to a temperature that exceeds the component manufacturer's recommendations.

7.8* Electromagnetic Interference.

Electromagnetic interference suppression shall be provided, as required, to satisfy the radiation limits specified in SAE J551/1, Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz).

7.9 Optical Warning Devices.

Each ambulance shall have a system of optical warning devices that meets or exceeds the requirements of this section.

7.9.1* The optical warning system shall consist of an upper and a lower warning level.

7.9.2 The requirements for each level shall be met by the warning devices in that particular level without consideration of the warning devices in the other level.

7.9.3 For the purposes of defining and measuring the required optical performance, the upper and lower warning levels shall be divided into four warning zones.

7.9.3.1 The four zones shall be determined by lines drawn through the geometric center of the ambulance at 45 degrees to a line drawn lengthwise through the geometric center of the ambulance.

7.9.3.2 The four zones shall be designated A, B, C, and D in a clockwise direction, with zone A to the front of the ambulance as shown in Figure 7.9.3.2.

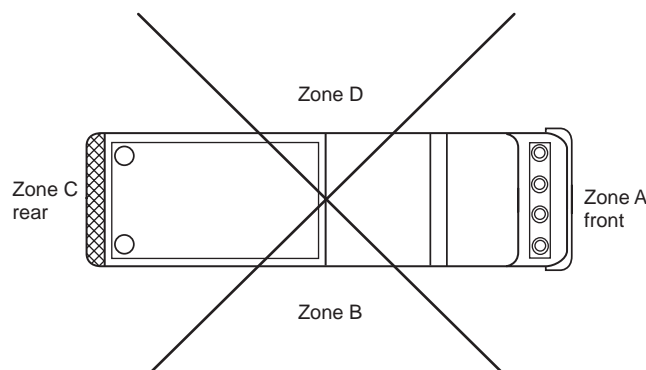


Figure 7.9.3.2 Warning Zones for Optical Warning Devices.

7.9.4 Each optical warning device shall be installed on the ambulance and connected to the ambulance's electrical system in accordance with the requirements of this standard and the requirements of the manufacturer of the device.

7.9.5 A master optical warning system switch that energizes all the optical warning devices shall be provided.

7.9.6 The optical warning system on the ambulance shall be capable of two separate signaling modes during emergency operations.

7.9.6.1 One mode shall signal to drivers and pedestrians that the ambulance is responding to an emergency and is calling for the right-of-way.

7.9.6.2 One mode shall signal that the ambulance is stopped and is blocking the right-of-way.

7.9.6.3 The use of some or all of the same warning lights shall be permitted for both modes provided the other requirements of this chapter are met.

7.9.7 A switching system shall be provided that senses the position of the parking brake or the park position of an automatic transmission.

7.9.7.1 When the master optical warning system switch is closed and the parking brake is released or the automatic transmission is not in park, the warning devices signaling the call for the right-of-way shall be energized.

7.9.7.2 When the master optical warning system switch is closed and the parking brake is on or the automatic transmission is in park, the warning devices signaling the blockage of the right-of-way shall be energized.

7.9.7.3* The system shall be permitted to have a method of modifying the two signaling modes.

7.9.8 The optical warning devices shall be constructed or arranged so as to avoid the projection of light, either directly or through mirrors, into any driving or crew compartment(s).

7.9.9 The front optical warning devices shall be placed so as to maintain the maximum possible separation from the headlights.

7.9.10* The optical sources on each level shall be of sufficient number and arranged so that failure of a single optical source does not create a measurement point in any zone on the same level as the failed optical source without a warning signal at a distance of 100 ft (30 m) from the geometric center of the ambulance.

7.9.11 Flash Rate.

7.9.11.1 The minimum flash rate of any optical source shall be 75 flashes per minute, and the minimum number of flashes at any measurement point shall be 150 flashes per minute.

7.9.11.1.1 Steadily burning, nonflashing optical sources shall be permitted to be used.

7.9.11.1.2 The optical energy provided by nonflashing optical sources shall not be included in the calculations of the zone's total optical power.

7.9.11.2 The flasher of any current-interrupted flashing device shall otherwise meet the requirements of SAE J1690, Flashers.

7.9.12* Color of Warning Lights.

7.9.12.1 Permissible colors or combinations of colors in each zone, within the constraints imposed by applicable laws and regulations, shall be as shown in Table 7.9.12.1.

Table 7.9.12.1 Zone Colors		
Color	Calling for Right-of-Way	Blocking Right-of-Way
Red	Any zone	Any zone
Blue	Any zone	Any zone
Yellow	Any zone except A	Any zone
White	Any zone except C	Not permitted

7.9.12.2 All colors shall be as specified in SAE J578, Color Specification, for red, blue, yellow, or white.

7.9.13* Requirements for Large ambulances.

7.9.13.1 If the ambulance has a bumper-to-bumper length of 25 ft (7.6 m) or more or has an optical center on any optical warning device greater than 8 ft (2.4 m) above level ground, the requirements of 7.9.13.2 through 7.9.13.6 shall apply.

7.9.13.2 Upper-Level Optical Warning Devices.

7.9.13.2.1 The upper-level optical warning devices shall be mounted as high and as close to the corner points of the ambulance as is practical to define the clearance lines of the ambulance.

7.9.13.2.2 The upper-level optical warning devices shall not be mounted above the maximum height, specified by the device manufacturer, that gives an intensity value at 4 ft (1.2 m) above level ground and at 100 ft (30.5 m) from the optical warning device of less than 50 percent of that required at the optical center.

7.9.13.3 Lower-Level Optical Warning Devices.

7.9.13.3.1 To define the clearance lines of the ambulance, the optical center of the lower-level optical warning devices in the front of the vehicle shall be mounted on or forward of the front axle centerline and as close to the front corner points of the ambulance as is practical.

7.9.13.3.2 The optical center of the lower-level optical warning devices at the rear of the vehicle shall be mounted on or behind the rear axle centerline and as close to the rear corners of the ambulance as is practical.

7.9.13.3.3 The optical center of any lower-level device shall be between 18 in. and 62 in. (460 mm and 1600 mm) above level ground.

7.9.13.4 Midship Optical Warning Devices.

7.9.13.4.1 A midship optical warning device shall be mounted on both the right and the left sides of the ambulance if the distance between the front and rear lower-level optical devices exceeds 25 ft (7.6 m) at the optical center.

7.9.13.4.2 Additional midship optical warning devices shall be required, where necessary, to maintain a horizontal distance between the centers of adjacent lower-level optical warning devices of 25 ft (7.6 m) or less.

7.9.13.4.3 The optical center of any midship mounted optical warning device shall be between 18 in. and 62 in. (460 mm and 1600 mm) above level ground.

7.9.13.5* For each operating mode, the combined optical power of all the optical sources shall meet or exceed the zone total optical power requirements shown in Table 7.9.13.5.

See Table 7.9.13.5 on the next page

7.9.13.6 No individual measurement point shall be less than that shown in Table 7.9.13.5.

7.9.14* Requirements for Small Ambulances.

7.9.14.1 If the ambulance has a bumper-to-bumper length of less than 25 ft (7.6 m) and has the optical center of all optical warning devices at 8 ft (2.4 m) or less above level ground, the requirements of 7.9.14.2 through 7.9.14.5 shall apply.

7.9.14.2 Upper-Level Optical Warning Devices.

7.9.14.2.1 The upper-level optical warning devices shall be mounted as high as practical, but not over 8 ft (2.4 m), at the optical center.

7.9.14.2.2 The upper-level optical warning devices shall be permitted to be combined in one or more enclosures and shall be permitted to be mounted on the cab roof or any other convenient point.

7.9.14.3 Lower-Level Optical Warning Devices.

7.9.14.3.1 One or more lower-level optical warning devices shall be visible from the front and the side of the ambulance.

7.9.14.3.2 The optical center of the lower-level optical warning devices in the front of the vehicle shall be mounted on or forward of the front wheel centerline and as close to the front corner points of the ambulance as is practical.

7.9.14.3.3 The optical center of the device(s) shall be between 18 in. and 48 in. (460 mm and 1,220 mm) above level ground.

7.9.14.4 For each operating mode, the combined optical power of all the optical sources mounted on both the upper and lower levels shall meet or exceed the zone's total optical power requirements shown in Table 7.9.14.4.

Table 7.9.14.4 Minimum Optical Power Requirements for Small Ambulance						
Zone	Mode of Operation					
	Calling for Right-of-Way			Blocking Right-of-Way		
	H Total	At Any H Point	At Any Point 5 Degrees Up or 5 Degrees Down from H	H Total	At Any H Point	At Any Point 5 Degrees Up or 5 Degrees Down from H
A	1,000,000	10,000	3,500	400,000	10,000	3,500
B	200,000	8,000	3,500	200,000	8,000	3,500
C	400,000	10,000	3,500	800,000	10,000	3,500
D	200,000	8,000	3,500	200,000	8,000	3,500

Notes:

1. All values are in candela-seconds/minute.

2. H = Horizontal plane passing through the optical center.

3. The values in the H Total columns are the total of 19 data point values for each light, with data points on the boundary between zones counted in both zones.

7.9.14.5 No individual measurement point shall be less than that shown in Table 7.9.14.4.

7.9.15 Tests of Optical Warning Devices.

7.9.15.1 Mechanical and Environmental Test.

7.9.15.1.1 All optical warning devices shall be tested to the requirements of SAE J595, Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles; SAE J845, Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles; SAE J1318, Gaseous Discharge Warning Lamp for Authorized Emergency, Maintenance, and Service Vehicles; or SAE J1889, L.E.D. Signal and Marking Lighting Devices.

7.9.15.1.2 Optical devices and components designed for mounting only in weatherproof, interior spaces shall be tested in conformance with the applicable SAE standard listed in 7.9.15.1.1 and shall comply with the vibration test and the warpage test for plastic components.

7.9.15.1.3 Optical devices and components designed for mounting on the exterior of the ambulance or in nonweatherproof interior spaces shall be tested in conformance with SAE J845 and shall comply with the following performance requirements of that standard:

Table 7.9.13.5 Minimum Optical Power Requirements for Large Ambulance

Zone	Level	Mode of Operation					
		Calling for Right-of-Way			Blocking Right-of-Way		
		<i>H</i> Total	At Any <i>H</i> Point	At Any Point 5 Degrees Up or 5 Degrees Down from <i>H</i>	<i>H</i> Total	At Any <i>H</i> Point	At Any Point 5 Degrees Up or 5 Degrees Down from <i>H</i>
A	Upper	1,000,000	10,000	3,500	400,000	10,000	3,500
B	Upper	400,000	10,000	3,500	400,000	10,000	3,500
C	Upper	400,000	10,000	3,500	800,000	10,000	3,500
D	Upper	400,000	10,000	3,500	400,000	10,000	3,500
A	Lower	150,000	3,750	1,300	150,000	3,750	1,300
B	Lower	150,000	3,750	1,300	150,000	3,750	1,300
C	Lower	150,000	3,750	1,300	150,000	3,750	1,300
D	Lower	150,000	3,750	1,300	150,000	3,750	1,300

Notes: 1. All values are in candela-seconds/minute.

2. *H* = Horizontal plane passing through the optical center.

3. The values in the *H* Total columns are the total of 19 data point values for each light, with data points on the boundary between zones counted in both zones.

- (1) Vibration
- (2) Moisture
- (3) Dust
- (4) Corrosion
- (5) High temperature
- (6) Low temperature
- (7) Durability
- (8) Warpage

7.9.15.2 Photometric Test Procedures for Optical Devices.

7.9.15.2.1 Testing shall be performed by, or on behalf of, the device manufacturer to ensure compliance with the requirements of 7.9.15.2.2 through 7.9.15.2.5.2.

7.9.15.2.1.1 The results of the testing shall be used to determine compliance with this standard, and all required photometric data shall be available, upon request, from the optical warning device manufacturer.

7.9.15.2.1.2 The goniometer, integrating photometer, and other equipment used to take the test measurements shall meet the requirements of SAE J1330, Photometry Laboratory Accuracy Guidelines.

7.9.15.2.2 The optical source shall be mounted in a goniometer and operated as it would be in a normal system application.

7.9.15.2.2.1 The minimum distance between the light-emitting surface of the source being tested and the front face of the photometer detector shall be 59 ft (18 m).

7.9.15.2.2.2 The goniometer shall be oriented and the integrating photometer shall be set to integrate light pulses from the source for 20 seconds.

7.9.15.2.3 For all tests performed with the power applied, the lighting system, or component thereof, shall be operated at 12.8 V \pm 0.1 V for 12 V nominal equipment, 25.6 V \pm 0.2 V for 24 V nominal equipment, and 38.4 V \pm 0.3 V for 42 V nominal equipment.

7.9.15.2.3.1 If the equipment is rated for operation on multiple voltages, the tests shall be performed at each of the rated voltages used by the equipment.

7.9.15.2.3.2 Voltage shall be measured at a point 12 in. \pm 1 in. (300 mm \pm 25 mm) from the entry into the component.

7.9.15.2.4 The technique described in 7.9.15.2.2 through 7.9.15.2.2.2 shall be performed along the horizontal plane that passes through the optical center, beginning at the optical center and repeated at 5-degree intervals to the left and to the right of the optical center throughout the active horizontal angle of light emission of the optical source.

7.9.15.2.5 Measurements shall be repeated at 5 degrees up and 5 degrees down from the horizontal plane that passes through the optical center, beginning at a point on the vertical plane passing through the optical center.

7.9.15.2.5.1 The measurements shall be repeated at 5 degree intervals to the left and to the right of this vertical plane throughout the active horizontal angle of light emission of the optical source.

7.9.15.2.5.2 If the optical warning device contains more than one optical source, the test shall be repeated for each optical source.

7.9.16* Compliance Documentation. The ambulance manufacturer shall demonstrate compliance of the warning system by one of the following methods:

(1) Certification that the system was installed within the geometric parameters specified by the manufacturer of the system referencing the optical source test reports provided by the manufacturer of the system

(2) Certification that a mathematical calculation based on test reports for individual optical sources provided by the manufacturer of the devices and performed by a qualified person demonstrates that the combination of individual devices as installed meets the requirements of this standard

(3) Actual measurement of the lighting system after installation on the ambulance

7.9.17 Alternate Approved Lighting Systems.

7.9.17.1 An emergency lighting system shall provide the ambulance with 360° of conspicuity for safety during its missions.

7.9.17.1.1 The system shall display highly perceptible and attention getting signals that function in a modal system, and convey the message in the

“PRIMARY MODE” — “Clear the Right-of-Way” and in the “SECONDARY MODE” — “Hazard, Vehicle Stopped on Right-of-Way.”

7.9.17.1.2 The ambulance standard warning light system shall not impose a continuous average electrical load exceeding 40 amperes at 14.2 volts.

7.9.17.1.3 Warning light systems shall not impair the effectiveness of the ambulance’s exterior lighting with conformity to the requirements of FMVSS No. 108.

7.9.17.2 The ambulance standard emergency warning light system shall contain twelve fixed red lights, one fixed clear light and one or more fixed amber light(s).

7.9.17.2.1 These lights shall function in a dual mode system as shown in Table 7.9.17.2.1 and meet the physical and photometric requirements.

7.9.17.2.2 The upper body warning lights shall be mounted at the extreme upper corner areas of the ambulance body.

7.9.17.2.3 The single clear light shall be centered between the two front facing, red, upper corner lights or in a dedicated housing mounted forward of the body on the cab roof.

7.9.17.2.3.1 If due to limited body dimensions and physical size of the outboard forward facing lights, the lights shall also be mounted in dedicated housings on the cab roof.

7.9.17.2.4 Doors or other ancillary equipment shall not obstruct the standard warning lights.

7.9.17.2.5 The amber light shall be symmetrically located between the two rear facing red lights.

7.9.17.2.6 The red “grille” lights shall be located at least 30 in. (762 mm) above the ground and below the bottom edge of the windshield and be laterally separated by at least 18 in. (457 mm), measured from centerline to centerline of each lamp.

7.9.17.2.7 The lateral facing intersection lights shall be mounted as close as possible to the front upper edge of each front fender and may be angled forward a maximum of 30 degrees.

7.9.17.2.8 All warning lights furnished shall be mounted to project their highest intensity beams on the horizontal plane.

7.9.17.3 Photometric, Chromaticity, and Physical Requirements.

7.9.17.3.1 Each emergency light shall flash 75 to 125 times per minute.

7.9.17.3.2 The chromaticity values of the lights shall conform to SAE J578, for their respective color, except for the red lights, which may conform to the following expanded boundary limits of: $y = 0.34$; $y = 0.32$; $x = 0.62$.

7.9.17.3.3 All warning lights shall project a beam spread of at least 5 degrees up and 5 degrees down and at least 45 degrees left and right of H-V.

7.9.17.3.4 Each light shall produce flash energy, (Cd-s) per flash, measured from the H-V to all the extreme test point coordinates and shall be tested at all 5 degree increments.

7.9.17.3.4.1 At no point shall the Cd-s values drop to less than the minimum values as shown in Table 7.9.17.2.1 when tested at 14.2 volts.

7.9.17.3.4.2 Flash energy shall be determined in accordance with the SAE J845 method for determining the flash energy of a light.

7.9.17.3.5 Testing shall be conducted on the device(s) as manufactured including use of the actual light source and all other related system components.

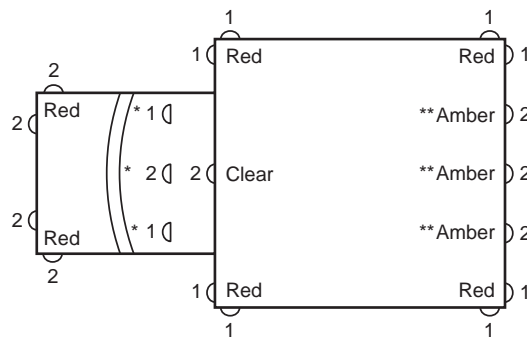
7.9.17.4 The emergency light switches shall be wired and arranged to provide the warning light signal modes and combinations as specified.

7.9.17.4.1 All emergency light switches shall be labeled and each Primary/Secondary mode switch shall have indicator light to show the driver which mode is activated.

7.9.17.5 The emergency lighting system shall be comprised of components and devices that comply with the general requirements and tests of SAE J575, J576, J578, and J551, as applicable for the unit.

7.9.17.5.1 Warning lights shall be firmly fastened to reinforced body surfaces in accordance with the lighting manufacturer’s requirements and recommendations and include aiming wedges to compensate for sloped body surfaces, grill, hood and fender angles or mold release angles on roof caps.

7.9.17.5.2 The manufacturer shall aim the lights to assure that all lighting performance requirements herein are met.



FLASH PATTERN

* Optional forward facing light locations on cab roof for two red and single center clear lights.

** Optional rear amber lights in lieu of single center light.

1 - Indicates lights flashing at the same time.

2 - Indicates lights flashing 180 degrees out of phase with 1.

MINIMUM FLASH ENERGY, Cd-S PER FLASH, PER FIXTURE

Color	Red		Clear	Amber
Location	Grill and fenders	Upper body corners	Front center	Rear center*
Day	160 Cd-S @ HV	240 Cd-S @ HV	900 Cd-S @ HV	600 Cd-S @ HV
	80 Cd-S @ $\pm 5^\circ$ H points	120 Cd-S @ $\pm 5^\circ$ H points	450 Cd-S @ $\pm 5^\circ$ H points	300 Cd-S @ $\pm 5^\circ$ H points
	12 Cd-S @ all $5^\circ V - 45^\circ$ H points	32 Cd-S @ all $5^\circ V - 45^\circ$ H points	96 Cd-S @ all $5^\circ V - 45^\circ$ H points	72 Cd-S @ all $5^\circ V - 45^\circ$ H points
Night	10–30% of the above			

* Single center rear or combined dual rear (optional).

MODAL EMERGENCY LIGHTING SYSTEM

Color & Location	Red	Clear	Amber	Red
Mode of Operation	Front and rear corners	Front upper center	Rear center	Grill and fender
Primary (Clear the right-of-way)	On	On	On	On
Secondary (Hazard vehicle stopped on right-of-way)	On	Off	On	Off

See Figure 7.9.17.2.1 Emergency Lighting

7.9.17.5.3 The lights shall be aimed either mechanically or optically on the horizontal axis with a tolerance of +0° to -3°.

7.9.17.5.4 All switches, connectors, and wiring shall be rated to carry a minimum of 125 percent of their maximum ampere load.

7.9.17.5.5 When halogen or other long duty cycle light source is used, the duty cycle of any device shall not exceed 50 percent.

7.9.17.5.6 When strobe lights are furnished, all high voltage leads and connections shall be insulated and enclosed, or weatherproof connectors, with the proper voltage rating shall be used.

7.9.17.6 Tests, Warning Light System.

7.9.17.6.1 The lighting manufacturers shall furnish and certify or the ambulance manufacturer shall measure and record the total average current load of the standard emergency warning light system on the vehicle as manufactured at the regulated voltage of 14.2 volts, when operated in the mode which draws maximum current.

7.9.17.6.2 The warning light system and related components and devices shall be tested and approved by an Automotive Manufacturers Equipment Compliance Agency (AMECA) accredited laboratory independent from the lighting device manufacturer's own labs and listed with the AMECA for compliance with the requirements in this specification.

7.10 Audible Warning Devices.

7.10.1 Audible warning equipment in the form of at least one automotive traffic horn and one electric or electronic siren shall be provided.

7.10.1.1 The siren manufacturer shall certify the siren as meeting the requirements of SAE J1849, Emergency Vehicle Sirens.

7.10.1.2* A means shall be provided to allow the activation of the siren within reach of the driver.

7.10.2 Where furnished, air horns, electric siren(s), and electronic siren speaker(s) shall be mounted as low and as far forward on the ambulance as is practical.

7.10.3 Audible warning equipment shall not be mounted on the roof of the ambulance.

7.10.4 The siren, with the exception of cancellation effects due to dual speakers, when tested in a full anechoic chamber with test equipment and methods, shall conform to California Administrative Code, Title 13, Article 8:

7.10.4.1 The siren shall be capable of producing a continuous warning sound at a minimum level of 123 dB, A-weighted, at 3 m (10 ft) on axis in the "wail mode" with "yelp" falling within 1 dB with 13.6 volts +/- 1% input, at a fundamental frequency in the range of 500 Hz to 2000 Hz maximum.

7.10.4.2 The output over the sweep range shall not drop to less than 116 dB.

7.10.4.3 The speakers shall be located in the configuration that is representative of the vehicle on which they will be mounted.

7.10.4.4 In the "wail" mode, the siren shall have a sweep rate of 10 to 18 cycles per minute and in the "yelp" mode, a sweep rate of 150 to 250 cycles per minute.

7.10.4.5 All sweep modes shall cover a range of at least one octave.

7.10.4.6 In voice (P.A.) operation, the unclipped sine wave output shall be at least 55 watts RMS into a resistive load matching the nominal speaker system impedance at 1,000 Hz.

7.10.4.6.1 The frequency response of the amplifier shall be from 500 Hz to 3,000 Hz +/- 3 dB, when measured from 1000 Hz reference.

7.10.4.6.2 Total harmonic distortion shall not exceed 10 percent, at 20 watts RMS, over the specified frequency range when measured with the load shown above.

7.10.4.7 The electronic siren shall be tested, approved and listed with the Automotive Manufacturers Equipment Compliance Agency.

7.11 Exterior and Interior Lighting.

7.11.1 All light level measurements shall be made with a light meter with a hemispherical light sensor held against the surface, facing perpendicular to the surface, and not deliberately pointed toward the light source.

7.11.2 Scene Lighting.

7.11.2.1 Scene lights shall be located on both the sides of the ambulance.

7.11.2.2 Scene lights shall be not less than 75 in. (1.9 m) above the ground and unobstructed by open doors.

7.11.2.3 Scene light switches shall be located on the cab console and control each side independently.

7.11.3 Load Lighting.

7.11.3.1 The loading area shall be illuminated to a level of at least 1 fc within the first 5 ft (1.5 m) from the vehicle and 0.3 fc up to 10 ft (3 m) from the vehicle.

7.11.3.2 Compliance of the load lighting illumination shall be validated by testing a substantially similar ambulance in accordance with Section 9.24.

7.11.3.3 Load lights shall be not less than 75 in. (1.9 m) above the ground and unobstructed by open doors.

7.11.3.4 Load lights shall turn on whenever the rear patient entry doors are opened.

7.11.3.5 Load light switches shall allow for manual operation when the doors are closed.

7.11.4 Ambulance Exterior DOT Lighting.

7.11.4.1 The exterior ambulance lighting shall include running lights and all required FMVSS 108 lighting.

7.11.4.2 The lower front and rear side marker lights shall flash in conjunction with the directional signals.

7.11.5 Ground Lighting.

7.11.5.1 The ambulance shall be equipped with lighting that is capable of providing illumination at a minimum level of 0.3 fc on ground areas within 30 in. (800 mm) of the edge of the ambulance in areas designed for personnel to climb into or onto the ambulance or descend from the ambulance to the ground level.

7.11.5.2 Lighting designed to provide illumination on areas under the driver and crew riding area exits shall be switchable, but activated automatically when the exit doors are opened.

7.11.5.3 All other ground area lighting shall be switchable.

7.11.6* Interior Lighting.

7.11.6.1* The ambulance shall have sufficient lighting to provide an average level of 1 fc at each seating surface in the driving compartments.

7.11.6.2 Driving compartment lighting shall be designed and located so that no glare is reflected into the driver's eyes or his line of vision, from switch control panels or other areas that are illuminated while the vehicle is in motion.

7.11.6.3* Patient Compartment Illumination.

7.11.6.3.1 The ambulance interior lighting configuration shall be designed to minimize electrical loads.

7.11.6.3.2 Any lighting circuit shall not consume more than 25 amps and shall have separately protected and controlled circuits.

7.11.6.3.3 All interior lighting fixture shall not protrude more than 1.5 in. (38 mm) from the mounting surface.

7.11.6.3.4 The patient compartment lighting shall have a minimum of two levels of lighting, high and low.

7.11.6.3.4.1 In the high setting the patient compartment floor shall not be less than 15 foot candles intensity, measured along the centerline of the clear floor.

(A) Compliance of the patient compartment floor illumination shall be validated by testing a substantially similar ambulance in accordance with Section 9.16.

7.11.6.2.4.2* The primary cot, in the high setting, shall be provided with a minimum of 35 foot candles of illumination measured on at least 90 percent of the cot's surface area.

(A) Compliance of the patient cot illumination shall be validated by testing a substantially similar ambulance in accordance with Section 9.16.

7.11.6.2.4.3 The patient compartment lighting (in the low setting) shall be automatically activated when the side entry or rear entry patient compartment doors are opened.

7.11.6.2.5 Compliance of lights activated by the side entry door and rear entry door shall be validated by testing a substantially similar ambulance in accordance with Section 9.16.

7.11.7 Compartment Lighting.

7.11.7.1 Each enclosed tool and equipment compartment greater than 4 ft³ (0.1 m³) in volume and having an opening greater than 144 in.² (92,900 mm²) shall have sufficient compartment lighting to provide a minimum of 1 fc at any location on the floor of the compartment without any shelves, dividers, or equipment in the compartment.

7.11.7.2 Switches for all compartment lighting shall be readily accessible.

7.11.7.3 The lights shall be arranged or protected to minimize accidental breakage.

7.11.8 Each step well shall be illuminated when door is open to a minimum of 1 fc on 90 percent of the step.

7.11.9 Testing. All interior and exterior lights mounted in wet locations shall be tested in conformance with SAE J575, Test Methods and Equipment for Lighting Devices and Components for Use on Vehicles Less Than 2032 mm in Overall Width, and shall comply with the following performance requirements of that standard:

- (1) Vibration
- (2) Moisture
- (3) Dust
- (4) Corrosion
- (5) High temperature
- (6) Low temperature
- (7) Durability
- (8) Warpage

7.12 Do-Not-Move Ambulance Light.

7.12.1* A red flashing or rotating light or electronic display within the forward view of the driver, shall be illuminated automatically whenever the ambulance's parking brake is not fully engaged and any of the following conditions exist:

- (1) Any passenger, patient entry or equipment compartment door is not closed.
- (2) Any equipment rack is not in the stowed position.
- (3) Any other device permanently attached to the ambulance is open, extended, or deployed in a manner that is likely to cause damage to the ambulance if the ambulance is moved.

7.12.2 Compartments meeting all of the following conditions shall be permitted to be exempt from the requirements of 7.13.1.

- (1) The volume is less than or equal to 4 ft³ (0.1 m³).
- (2) The compartment has an opening less than or equal to 144 in.² (92,900 mm²).
- (3) The open door does not extend sideways beyond the mirrors or up above the top of the ambulance.

7.12.3 If equipped with a do-not-move ambulance light it shall be labeled to read "Do Not Move Ambulance When Light Is On."

7.13* Backup Alarm.

An electric or electronic backup alarm shall be provided that meets the Type D (87 dBA) requirements of SAE J994, Alarm — Backup — Electric, Laboratory Performance Testing.

7.14 Stop, Tail, and Directional Lights.

7.14.1 The ambulance shall be equipped with all FMVSS 108 legally required stop, tail, and directional lights.

7.14.2 Directional lights shall be visible according to FMVSS 108.

7.14.3 On ambulances 30 ft (10 m) or longer in length, a turn signal shall be mounted approximately midway along the ambulance at approximately running board height.

7.14.4 Equipment shall not be mounted in a manner that obscures the stop, tail, or directional lights.

7.15 Communications Equipment.

7.15.1 Any two way radio equipment shall be installed in accordance with the requirements of the radio equipment manufacturer.

7.15.2* Sufficient ventilated space for a two-way radio (including convenience features), antenna openings, ground plane, terminal wiring for 12V power and ground shall be provided.

Chapter 8 Line Voltage Electrical Systems

8.1 Application.

The ambulance shall be furnished with a 2-wire plus ground line voltage (AC) wiring system which shall meet, the applicable requirements of this chapter.

8.2 General Requirements.

8.2.1 Line Voltage Utility Power Listing shall be by a nationally recognized testing laboratory, recognized by OSHA under Appendix A to 29 CFR 1910.7.

8.2.1.1 The AC system is to be utilized while the vehicle is stationary for powering maintenance devices, medical equipment and battery chargers.

8.2.1.2 The AC system shall not be utilized for operational ambulance interior lighting, such as patient compartment lights.

8.2.2 Line Voltage Supplied from an External Source.

8.2.2.1* The ambulance shall be equipped with a fixed power inlet (shoreline inlet), it shall be a permanently mounted inlet (male-recessed type with cover), with a minimum rating of 15 amperes conforming to NEMA configuration, and wired directly to the system or device to be powered or wired to a transfer switch where required by 8.8.2.

8.2.2.2 The shoreline inlet shall be equipped with spring loaded cover assembly suitable for wet locations.

8.2.2.3 The connection shall be permanently labeled as shown in Figure 8.2.2.3.

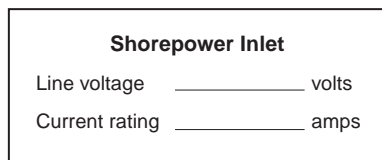


Figure 8.2.2.3 Shorepower Inlet Label.

8.2.2.4 The protective ground from the shoreline inlet shall be bonded to the vehicle frame.

8.2.3 Receptacle.

8.2.3.1 The shoreline receptacle shall energize the vehicle's internal line voltage circuit from an external power source (utility power).

8.2.3.2 A proper mating, weatherproof, minimum 15 ampere connector body conforming to NEMA configuration shall also be furnished without cable and tagged specifying the size, type of wire necessary, and the polarity of the future hookup.

8.2.4 Stability.

8.2.4.1 Any fixed line voltage power source producing alternating current (ac) shall produce electric power at 60 Hz ± 3 Hz when producing power at all levels between no load and full rated power.

8.2.4.2 Any fixed line voltage power source shall produce electric power at the rated voltage ± 10 percent when producing power at all levels between no load and full rated power.

8.2.4.3 The maximum voltage supplied to portable equipment shall not exceed 125 volts to ground.

8.2.4.4 Higher voltage shall be permitted only when used to operate fixed wired, permanently mounted equipment on the ambulance.

8.2.5 Conformance with National Electrical Code.

8.2.5.1 All components, equipment, and installation procedures shall conform to NFPA 70, National Electrical Code, except where superseded by the requirements of this chapter.

8.2.5.2 Where the requirements of this chapter differ from those in NFPA 70, the requirements in this chapter shall apply.

8.2.5.3* Where available, line voltage electrical system equipment and materials included on the ambulance shall be listed and used only in the manner for which they have been listed.

8.2.5.4 All equipment and materials shall be installed in accordance with the manufacturer's instructions.

8.2.6 Location Ratings.

8.2.6.1 Any equipment used in a dry location shall be listed for dry locations.

8.2.6.2 Any equipment used in a wet location shall be listed for wet locations.

8.2.6.3 Any equipment, except a PTO-driven generator, used in an underbody or underchassis location that is subject to road spray shall be either listed as Type 4 or mounted in an enclosure that is listed as Type 4.

8.2.6.4* If a PTO-driven generator is located in an underbody or underchassis location, the installation shall include a shield to prevent road spray from splashing directly on the generator.

8.2.7 Line Voltage Electrical System Testing.

Electrical System Testing shall be performed according to Section 9.9.

8.3 Grounding and Bonding.

8.3.1* Grounding.

8.3.1.1 Grounding shall be in accordance with 250.34(A) and 250.34(B) of NFPA 70.

8.3.1.2 Grounding shall be in accordance with Section 250-6 [Portable and Vehicle Mounted Generators] of the National Electrical Code (NEC).

8.3.1.3 Ungrounded systems shall not be used.

8.3.1.4* Only stranded copper with green colored insulation or green with yellow tracer insulation or braided copper conductors shall be used for grounding and bonding.

8.3.1.5 The grounded current-carrying conductor (neutral) shall be insulated from the equipment-grounding conductors and from the equipment enclosures and other grounded parts.

8.3.1.6 The neutral conductor shall have white or gray colored insulation in accordance with 200.6, "Means of Identifying Grounded Conductors," of NFPA 70.

8.3.1.7 Any bonding screws, straps, or buses in the distribution panelboard or in other system components between the neutral and equipment-grounding conductor shall be removed and discarded.

8.3.2 Interior Equipment Grounding.

8.3.2.1 In the line voltage electrical system, all exposed metal parts, enclosures, frames, fixtures, canopies, etc., shall be effectively bonded to the grounding terminals or enclosure of the distribution panel board.

8.3.2.2 Grounding of electrical equipment shall be done as required in 8.3.2.2.1 through 8.3.2.2.6.

8.3.2.2.1 Connection of metal raceway, i.e., conduit or electrical metallic tubing.

8.3.2.2.2 A connection between the one or more equipment grounding conductor and a metal box by means of a grounding screw (which shall be used for no other purpose) or a listed grounding device.

8.3.2.2.3 The equipment grounding conductor shall be permitted to be secured under a screw threaded into the fixture canopy other than a mounting screw or cover screw or attached to a listed grounding means (plate) in a non-metallic outlet box for fixture mounting (grounding means shall also be permitted for fixture attachment screws).

8.3.2.2.4 A connection between the one or more equipment grounding conductors brought into a nonmetallic outlet box shall be so arranged that a connection can be made to any fitting or device in that box which requires grounding.

8.3.2.2.5 Where more than one equipment grounding conductor or branch circuit enters a box, all such conductors shall be in good electrical contact with each other and the arrangement shall be such that the disconnection or removal of a receptacle, fixture, or other device fed from the box will not interfere with or interrupt the grounding continuity.

8.3.2.2.6 Cord-connected appliances shall be grounded by means of an approved cord with equipment grounding conductor and grounding attachment plug.

8.3.3 Bonding.

8.3.3.1 The neutral conductor of the power source shall be bonded to the vehicle frame.

8.3.3.2 The neutral bonding connection shall occur only at the power source.

8.3.3.3 In addition to the bonding required for the low voltage return current, each body and each driving or crew compartment enclosure shall be bonded to the vehicle frame by a copper conductor.

8.3.3.3.1 The conductor shall have a minimum amperage rating, as defined in 310.15, "Ampacities for Conductors Rated 0–2000 Volts," of NFPA 70, of 115 percent of the rated amperage on the power source specification label.

8.3.3.3.2 A single conductor that is sized to meet the low voltage and line voltage requirements shall be permitted to be used.

8.3.3.3.3 All exposed non-current carrying metal parts that could become energized shall be effectively bonded to the grounding terminal or enclosure of the distribution panel board.

8.3.3.3.4 A bonding conductor shall be connected between the distribution panel board and an accessible terminal on the chassis.

8.3.3.3.4.1 Aluminum or coppered aluminum conductors shall not be used.

8.3.3.3.4.2 Any ambulance that employs a unitized metal chassis-frame construction to which the distribution panel is securely fastened with a bolt and nut shall be considered to be bonded.

8.3.3.3.5 The ambulance body and exterior covering shall be considered bonded when the following criteria have been met:

(1) The metal panels overlap one another and are securely attached to the metal frame parts by metal fasteners or welding.

(2) The lower panel of the metal exterior covering is secured by metal fasteners at each cross member of the chassis, or the lower panel is bonded to the chassis by a metal strap.

8.3.3.3.6 Metal circulating air ducts shall be bonded to the chassis.

8.3.3.3.7 The compressed gas pipes (oxygen, breathing air, etc...) shall be bonded to the chassis.

8.4* Ground Fault Circuit Interrupters.

All line voltage AC circuits of the ambulance shall be protected by ground fault circuit interrupters.

8.5 Power Source General Requirements.

The requirements in 8.5.1 through 8.5.10 shall apply to all line voltage power sources.

8.5.1 All power source system mechanical and electrical components shall be sized to support the continuous duty nameplate rating of the power source.

8.5.2 The power source shall be shielded from contamination that would prevent the power source from operating within its design specifications.

8.5.3 Generators. If the power source is mechanically driven, it shall comply with Article 445, "Generators," of NFPA 70.

8.5.4 Power Source Rating.

8.5.4.1* For power sources of 8 kW or larger, the power source manufacturer shall declare the continuous duty rating that the power source can provide when installed on ambulance according to the manufacturer's instructions and run at 120°F (49°C) air intake temperature at 2,000 ft (600 m) above sea level.

8.5.4.2 The rating on the power source specification label shall not exceed the declared rating from the power source manufacturer.

8.5.5 Access shall be provided to permit both routine maintenance and removal of the power source for major servicing.

8.5.6 The power source shall be located such that neither it nor its mounting brackets interfere with the routine maintenance of the ambulance.

8.5.7 Instrumentation.

8.5.7.1 If the power source is rated at less than 3 kW, a "Power On" indicator shall be provided.

8.5.7.2 If the power source is rated at 3 kW or more but less than 8 kW, a voltmeter shall be provided.

8.5.7.3* If the power source is rated at 8 kW or more, the following instrumentation shall be provided at an operator's panel:

- (1) Voltmeter
- (2) Current meters for each ungrounded leg
- (3) Frequency (Hz) meter
- (4) Power source hourmeter

8.5.7.4 The instrumentation shall be permanently mounted at an operator's panel.

8.5.7.4.1 The instruments shall be located in a plane facing the operator.

8.5.7.4.2 Gauges, switches, or other instruments on this panel shall each have a label to indicate their function.

8.5.7.4.3 The instruments and other line voltage equipment and controls shall be protected from mechanical damage and not obstructed by tool mounting or equipment storage.

8.5.8 An instruction plate(s) that provides the operator with the essential power source operating instructions, including the power-up and power-down sequence, shall be permanently attached to the ambulance at any point where such operations can take place.

8.5.9* Operation.

8.5.9.1 Provisions shall be made for placing the generator drive system in operation using controls and switches that are identified and within reach of the operator position as designated by the purchaser.

8.5.9.2 Where the generator is driven by the chassis engine and engine compression brakes or engine exhaust brakes are furnished, they shall be automatically disengaged for generator operations.

8.5.9.3* Any control device used in the generator system power train between the engine and the generator shall be equipped with a means to prevent unintentional movement of the control device from its set position in the power generation mode.

8.5.10 If there is permanent wiring on the ambulance that is designed to be connected to the power source, a power source specification label that is permanently attached to the ambulance at the operator's control station shall provide the operator with the information detailed in Figure 8.5.10.

8.5.11 The power source, at any load, shall not produce a noise level that exceeds 90 dBA in any driving compartment, crew compartment, or onboard command area with windows and doors closed or at any operator's station on the ambulance.

8.6 Power Source Type Specific Requirements.

8.6.1* Direct Drive (PTO) Generators. If the generator is driven by any type of PTO, it shall meet the requirements of 8.6.1.1 through 8.6.1.3.

8.6.1.1 The transmission's PTO port and PTO, or the split shaft PTO, and all associated drive shaft components shall be rated to support the continuous duty torque requirements of the generator's continuous duty rating as stated on the power source nameplate.

8.6.1.2 The direct drive generator shall be mounted so that it does not change the ramp breakover angle, angle of departure, or angle of approach as defined by other components, and it shall not extend into the ground clearance area.

8.6.1.3 The direct drive generator shall be mounted away from exhaust and muffler areas or provided with a heat shield to reduce operating temperatures in the generator area.

8.6.2* Hydraulically Driven Generators. If the generator is driven using hydraulic components, it shall meet the requirements of 8.6.2.1 through 8.6.2.3.4.

8.6.2.1* A means shall be provided to activate the hydraulic generator system.

8.6.2.2 If the hydraulic generator system is not capable of output as stated on the power source specification label at all engine speeds, an automatic engine speed control system shall be provided.

8.6.2.3 Hydraulic Components.

8.6.2.3.1 A hydraulic system filter and strainer shall be provided and shall be located in a readily accessible area.

8.6.2.3.2 Hydraulic hose shall meet the hydraulic pump manufacturer's recommendations for pressure, size, vacuum, and abrasion resistance.

8.6.2.3.3 Hydraulic fittings shall meet the hydraulic pump manufacturer's recommendations for pressure, size, and the type of hose used.

8.6.2.3.4 Where the hydraulic hose comes into contact with other surfaces, the hose shall be protected from chafing.

8.6.3* Fixed Auxiliary Engine-Driven Generators. If the generator is driven by a fixed auxiliary engine, it shall meet the requirements of 8.6.3.1 through 8.6.3.9.4.

8.6.3.1 The generator shall be installed so that fumes, vapors, heat, and vibrations do not enter the driving or patient compartment.

8.6.3.2* Generators rated at 8 kW or more shall be equipped with a high temperature automatic shutdown system and a low oil (pressure or level) automatic shutdown system.

8.6.3.3 The generator shall be installed in accordance with the generator manufacturer's requirements for ventilation and service accessibility.

8.6.3.4 If the generator is installed in a compartment and the compartment doors shall be open during its operation, the generator shall be equipped with an interlock system to prevent its operation if the doors are not open, or the compartment shall be equipped with a high temperature alarm.

8.6.3.5 If the generator is installed in a compartment on a slide tray and the slide tray shall be in the extended or out position during operation, an interlock shall be provided to prevent operation unless the tray is in the correct position, or the compartment shall be equipped with a high temperature alarm.

8.6.3.6 Permanently installed generators shall have readily accessible engine oil drain provisions or piping to a remote location for oil changing.

8.6.3.7 If the generator is located in a position on the ambulance where the operator cannot see the instrumentation and operate the controls while standing at ground level or positioned at a specifically designated operator station, an operating panel with the required instrumentation, start and stop controls, and other controls necessary for safe operation shall be provided at a remote operator's panel.

8.6.3.8 Fuel System.

8.6.3.8.1 Fuel lines shall be protected from chafing at all wear points.

8.6.3.8.2 If the fuel source is shared with the ambulance engine, a separate fuel pickup system shall be provided that is arranged to ensure that the generator cannot utilize more than 75 percent of the fuel tank's capacity.

8.6.3.9 Exhaust System.

8.6.3.9.1* The exhaust piping and discharge shall be located or shielded to prevent thermal damage to the ambulance or equipment.

8.6.3.9.2 The exhaust shall be piped to the exterior of the vehicle and discharged at a location away from any operator's position.

8.6.3.9.2.1 The exhaust system for the generator shall comply with Section 5.6.

8.6.3.9.3 Where parts of the exhaust system are exposed so that they can cause injury to operating personnel, protective guards shall be provided.

8.6.3.9.4 Silencing devices shall be provided and shall not create exhaust backpressure that exceeds the limits specified by the engine manufacturer.

8.6.4* Line Voltage Power Derived from the Ambulance Low Voltage Power Supply Systems.

If the power source derives its input energy from the ambulance low voltage electrical system, it shall meet the requirements of 8.6.4.1 and 8.6.4.2.

8.6.4.1 The low voltage power supply system shall be installed in compliance with the requirements of Chapter 7.

8.6.4.2* The alternator and/or battery system shall be adequate to provide power for continuous operation for a minimum of 2 hours at full output.

Power Source Specifications	
Operational Category	Continuous Duty Rating
Rated voltage(s) and type (ac or dc)	
Phase	
Rated frequency	
Rated amperage	
Continuous rated watts	
Power source engine speed	

Figure 8.5.10 Power Source Specifications Label.

8.6.5 Power Sources Requiring Elevated Engine Speed. If the power source requires the chassis engine to be operating at a specific fixed speed or a specific speed range, it shall meet the requirements of 8.6.5.1 through 8.6.5.3.

8.6.5.1 The main propulsion engine shall have a governor capable of maintaining the engine speed within the limits required by the power source to meet the frequency control, voltage control, and power output specifications.

8.6.5.2 An interlock shall prevent engagement of the generator unless the parking brake is engaged and the transmission is in neutral or not connected to the drive wheels.

8.6.5.3* Where the chassis engine drives the generator and electronic engine throttle controls are provided, an interlock shall prevent engine speed control from any other source that would interfere with the generator while the generator is operating.

8.6.6* Waveform Created Electronically. If the power output waveform is electronically created (as with inverters and some generators), the purchaser shall specify whether modified sine wave or pure sine wave output is required.

8.7* Portable Generator Installations.

The generator shall comply with Article 445, “Generators,” of NFPA 70.

8.7.1 Any portable generator that can be operated while mounted on the ambulance shall be as follows:

(1) Installed so that fumes, vapors, heat, excessive noise, and vibrations do not enter interior driving or crew compartments or damage the generator during operation

(2) Have the exhaust outlet located so that exhaust is directed away from any operator station located on the ambulance and guarded to protect the operator

(3) Installed in a location that directs the exhaust and heat at least 12 in. (300 mm) away from the fuel fill, oxygen system, entry doors, and ventilation inlets.

8.7.2 If the portable generator is remotely mounted, it shall have a remote operator’s control station that shall provide a means for starting and stopping the generator and monitoring the same instrumentation as is required for fixed power sources.

8.7.3 Wiring for Portable Generator Installations. Wiring installed for the purpose of facilitating the distribution of power from a portable generator installation to fixed wiring on the ambulance shall conform to the additional requirements of 8.7.3.1 through 8.7.3.5.

8.7.3.1 Circuit conductors shall be sized in relation to the power source specification label rating and shall be protected by an overcurrent device commensurate with their ampere capacities.

8.7.3.2 There shall be a single output connector cord with all of the conductors in the cord sized to carry a minimum of 115 percent of the nameplate ampere.

8.7.3.3 If there is not an overcurrent protection device at the power source, the output connector cord shall not exceed 72 in. (1830 mm) in length and shall be connected to an overcurrent protection device.

8.7.3.4 The rating of an external main overcurrent protection device shall equal the rated ampere on the power source specification label or the next larger available size overcurrent protection device where so recommended by the power source manufacturer.

8.7.3.5 If a connecting plug is required, it shall be sized in relation to the system and conform to NEMA configurations for plugs.

8.8 Transfer Switch Applications.

8.8.1 A transfer switch shall be required to isolate one power source from the other where a circuit(s) is intended to be supplied from more than one power source.

8.8.2 Transfer equipment, including transfer switches, shall operate such that all ungrounded conductors of one power source are disconnected before any ungrounded conductors of the second power source are connected.

8.8.3 The neutral conductor shall be switched through the transfer switch.

8.9 Power Supply Assembly.

8.9.1 The conductors used in the power supply assembly between the output terminals of the power source and the main overcurrent protection device shall not exceed 12 ft (4 m) in length.

8.9.2 All power supply assembly conductors, including neutral and grounding conductors, shall have an equivalent ampere rating and shall be sized to carry not less than 115 percent of the ampere of the nameplate current rating of the power source.

8.9.3* If the power supply assembly connects to the vibrating part of a generator (not a connection on the base), the conductors shall be flexible cord or other fine-stranded conductors enclosed in metallic or nonmetallic liquid tight flexible conduit rated for wet locations and temperatures not less than 194°F (90°C).

8.10 Overcurrent Protection.

Manually resettable overcurrent devices shall be installed to protect the line voltage electrical system components.

8.10.1 Power Source Protection. A main overcurrent protection device shall be provided that is either incorporated in the power source or connected to the power source by a power supply assembly.

8.10.1.1 The size of the main overcurrent protection device shall not exceed 100 percent of the rated ampere stated on the power source specification label or the rating of the next larger available size overcurrent protection device, where so recommended by the power source manufacturer.

8.10.1.2 If the main overcurrent protection device is subject to road spray, the unit shall be housed in a Type 4-rated enclosure.

8.10.2 Branch Circuit Overcurrent Protection. Overcurrent protection devices shall be provided for each individual circuit and shall be sized at not less than 15 amps in accordance with 240.4, “Protection of Conductors,” of NFPA 70.

8.10.2.1 Any panelboard shall have a main breaker where the panel has six or more individual branch circuits or the power source is rated 8 kW or larger.

8.10.2.2 Each overcurrent protection device shall be marked with a label to identify the function of the circuit it protects.

8.10.2.3 Dedicated circuits shall be provided for any large appliance or device (air conditioning units, large motors, etc.) that requires 60 percent or more of the rated capacity of the circuit to which it is connected, and that circuit shall serve no other purpose.

8.10.3 Panelboards. All fixed power sources shall be hardwired to a permanently mounted panelboard unless one of the following conditions exists:

(1) All line voltage power connections are made through receptacles on the power source and the receptacles are protected by integrated overcurrent devices.

(2) Only one circuit is hardwired to the power source, which is protected by an integrated overcurrent device.

8.10.3.1 The panel shall be visible and located so that there is unimpeded access to the panelboard controls.

8.10.3.2 All panelboards shall be designed for use in their intended location.

8.10.3.3 The panel(s) shall be protected from mechanical damage, tool mounting, and equipment storage.

8.10.3.4* Where the power source is 120/240 V and 120 V loads are connected, the ambulance manufacturer or line voltage system installer shall consider load balancing to the extent that it is possible.

8.11* Wiring Methods.

Fixed wiring systems shall be limited to the following:

(1) Metallic or nonmetallic liquidtight flexible conduit rated at temperatures not less than 194°F (90°C) with stranded copper wire rated for wet locations and temperatures not less than 194°F (90°C)

(2) Type SOW, SOOW, SEOW, or SEOOW flexible cord rated at 600 V and at temperatures not less than 194°F (90°C)

8.11.1 Electrical cord or conduit shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, oxygen lines, hydraulic lines, exhaust system components, or low voltage wiring and shall be arranged as follows:

(1) Separated by a minimum distance of 12 in. (300 mm) from exhaust piping or shielded from such piping

(2) Separated from fuel lines by a minimum distance of 6 in. (152 mm)

8.11.1.1 Line voltage wiring shall not be routed through the oxygen compartment.

8.11.2 A means shall be provided to allow “flexing” between the driving and crew compartment, the body, and other areas or equipment whose movement would stress the wiring.

8.11.3 Electrical cord or conduit shall be supported within 6 in. (152 mm) of any junction box and at a minimum of every 24 in. (600 mm) of run.

8.11.3.1 Supports shall be made of nonmetallic materials or of corrosion-resistant or corrosion-protected metal.

8.11.3.2 All supports shall be of a design that does not cut or abrade the conduit or cord and shall be mechanically fastened to the ambulance

8.11.4 Only fittings and components listed for the type of cord or conduit being installed shall be used.

8.11.4.1 Where rigid metal conduit or intermediate metal conduit is terminated at an enclosure with a lock nut and bushing connection; two lock nuts shall be provided, one inside and one outside of the enclosure.

8.11.4.2 All cut ends of conduit shall be reamed or otherwise finished to remove rough edges.

8.11.5 Splices shall be made only in a listed junction box.

8.11.6 Additional Requirements for Flexible Cord Installations.

8.11.6.1* Where flexible cord is used in any location where it could be damaged, it shall be protected by installation in conduit, enclosures, or guards.

8.11.6.2 Where flexible cord penetrates a metal surface, rubber or plastic grommets or bushings shall be installed.

8.11.7 Wiring Identification.

8.11.7.1 Each line voltage circuit originating from the main panelboard shall be identified.

8.11.7.2 The wire or circuit identification either shall reference a wiring diagram or wire list or shall indicate the final termination point of the circuit.

8.11.7.3 Where pre-wiring for future power sources or devices exists, the un-terminated ends shall be marked with a label showing their wire size.

8.12 Wiring System Components.

8.12.1 Only stranded copper conductors with an insulation rated for temperatures of at least 194°F (90°C) and wet locations shall be used.

8.12.1.1 Conductors in flexible cord shall be sized in accordance with Table 400.5(A) of NFPA 70.

8.12.1.2 Conductors used in conduit shall be sized in accordance with 310.15, “Ampacities for Conductors Rated 0–2000 Volts,” of NFPA 70.

8.12.1.3 Aluminum or copper-clad aluminum conductors shall not be used.

8.12.2 All boxes shall conform to and be mounted in accordance with Article 314, “Outlet, Device, Pull, and Junction Boxes; Conduit Bodies; Fittings; and Manholes,” of NFPA 70.

8.12.2.1 All boxes shall be readily accessible.

8.12.2.2 Boxes shall not be permitted behind welded or pop-riveted panels.

8.12.2.3 The maximum number of conductors permitted in any box shall

be in accordance with 314.16, "Number of Conductors in Outlet, Device, and Junction Boxes, and Conduit Bodies," of NFPA 70.

8.12.3* All wiring connections and terminations shall provide a positive mechanical and electrical connection.

8.12.3.1 Connectors shall be installed in accordance with the manufacturer's instructions.

8.12.3.2 Wire nuts or insulation displacement and insulation-piercing connectors shall not be used.

8.12.4* Each switch shall indicate the position of its contact points (i.e., open or closed) and shall be rated for the continuous operation of the load being controlled.

8.12.4.1 All switches shall be marked with a label indicating the function of the switch.

8.12.4.2* Circuit breakers used as switches shall be "switch rated" (SWD) or better.

8.12.4.3 Switches shall simultaneously open all associated line voltage conductors.

8.12.4.4 Switching of the neutral conductor alone shall not be permitted.

8.12.4.5 Line voltage circuits controlled by low voltage circuits shall be wired through properly rated relays in listed enclosures that control all nongrounded current-carrying conductors.

8.12.5* Receptacles and Inlet Devices.

8.12.5.1 The patient compartment shall be furnished with a minimum of three (3) line voltage duplex receptacles conforming to NEMA 5-15.

8.12.5.2 Receptacles shall be near flush, vertically mounted.

8.12.5.3 All interior outlets shall be installed in accordance with Section 210-7 (Receptacles and Cord Conductors) of the NEC.

8.12.5.4 Any receptacle shall be at least 12 in. (300 mm) from any oxygen outlet.

8.12.5.5 An indicator shall be located within each line voltage receptacle as a line monitor indicating a live (hot) circuit.

8.12.5.6 Wet and Dry Locations.

8.12.5.6.1 All wet location receptacle outlets and inlet devices, including those on hardwired, remote power distribution boxes, shall be of the grounding type, provided with a wet location cover, and installed in accordance with Section 406.8, "Receptacles in Damp or Wet Locations," of NFPA 70.

8.12.5.6.2 All receptacles located in a wet location shall be not less than 24 in. (600 mm) from the ground.

8.12.5.6.3* Receptacles on off-road ambulances shall be a minimum of 30 in. (760 mm) from the ground.

8.12.5.7 All receptacles located in a dry location shall be of the grounding type and shall be at least 12 in. (300 mm) above the interior floor height.

8.12.5.8 No receptacle shall be installed in a face-up position.

8.12.5.9 The face of any wet location receptacle shall be installed in a plane from vertical to not more than 45 degrees off vertical.

8.12.5.10 Receptacle Label.

8.12.5.10.1 Each receptacle shall be marked with a label indicating the nominal line voltage (120 volts or 240 volts) and the current rating in amps of the circuit.

8.12.5.10.2 If the receptacle is DC or other than single phase, that information shall also be marked on the label.

8.12.5.11* All receptacles and electrical inlet devices shall be listed to UL 498, Standard for Safety Attachment Plugs and Receptacles, or other recognized performance standards.

8.12.5.12 Receptacles used for DC voltages shall be rated for DC service.

8.13 Cord Reels.

8.13.1 All permanently mounted cord reels shall be rated for continuous duty and installed to be accessible for removal, cord access, maintenance, and servicing.

8.13.2 The power rewind cord reel spool area shall be visible to the operator during the rewind operation, or the reel spool shall be encapsulated to prevent cord from spooling off the reel.

8.13.3 Rollers or guides shall be provided, where required, to prevent damage to the cord at reel spools or compartment openings.

8.13.4 Rewind Provision.

8.13.4.1 Manually operated reels shall have a hand crank.

8.13.4.2 Power rewind-type reels shall have the control in a position where the operator can observe the rewinding operation.

8.13.4.3 If a reel is in an enclosure or out of direct view, the cord entry point to the enclosure shall be visible to the operator of the reel control.

8.13.4.4 The rewind control or crank shall not be more than 72 in. (1830 mm) above the operator's standing position.

8.13.4.5 The rewind control shall be marked with a label indicating its function and shall be guarded to prevent accidental operation.

8.13.5* The reel shall be designed to hold 110 percent of the capacity needed for the intended cord length.

8.13.6* The wire size shall be in accordance with NFPA 70, Table 400.5(A), but in no case shall it be smaller than 12 AWG.

8.13.7* Electrical cord shall be Type SEOOW, Type SOOW, or Type STOOW.

8.13.8* A label that indicates the following information shall be provided in a visible location adjacent to any permanently connected reel:

- (1) Current rating
- (2) Current type
- (3) Phase

(4) Voltage

(5) Total cord length

8.13.9 Where a power distribution box is hardwired to the end of a cord that is stored on a fixed cord reel or other fixed storage means, the requirements in 8.13.9.1 through 8.13.9.6 shall apply.

8.13.9.1 The remote power distribution box shall be listed for use in a wet location.

8.13.9.2* The distribution box shall be as follows:

(1) Protected from corrosion

(2) Capable of being carried with a gloved hand

(3) Designed to keep the exterior electrical components above 2 in. (51 mm) of standing water

8.13.9.3 Inlets, receptacles, circuit breakers, or GFCI devices shall not be mounted on the top surface of the horizontal plane.

8.13.9.4 Branch circuit breakers shall be installed in the remote power distribution box if the overcurrent device protecting the feed cord to the box is too large to protect the wiring supplying the devices plugged onto the distribution box.

8.13.9.5* Remote power distribution boxes shall have a light on the box to indicate the power is on.

8.13.9.5.1* The light shall be visible in a 360 degree plane from a minimum of 200 ft (60 m) in complete darkness.

8.13.9.5.2 The light shall be mechanically protected to prevent damage.

8.13.9.6 The hardwired portable cord connection to the box shall have strain relief and meet the intended usage requirements.

8.14 Scene Lighting Systems.

8.14.1 Where fixed scene lights are supplied, the requirements in 8.14.2 through 8.14.5 shall apply.

8.14.2 All scene lights shall be provided with a lens or a means for preventing damage from water spray and shall be listed for wet location usage.

8.14.3 Handle on Lights.

8.14.3.1 If the light is adjustable, a handle shall be provided.

8.14.3.2 The design of the light shall not allow the temperature of the handle to exceed 131°F (55°C).

8.14.4 The manufacturer of the device shall have the scene light tested by a nationally recognized testing laboratory and listed to UL 153, Standard for Portable Electric Luminaires, or UL 1598, Luminaires.

8.14.5 If manually operated floodlights are not operable from the ground, access steps and handrails that meet the requirements of chapter 6 shall be provided to allow the user to reach the floodlights.

8.15 Appliance Accessibility and Fastening.

8.15.1 All electrical appliances shall be accessible for inspection, service, repair, and replacement without removal of permanent construction.

8.15.2 Appliances shall be fastened in accordance with the manufacturer's directions.

Chapter 9 Test Methods

9.1 Ambulance Body Structure Test.

9.1.1 Roof Crush Test.

9.1.1.1 Support the ambulance on a rigid fixture independent of the vehicle suspension

9.1.1.2 Remove any components that extend upward from the vehicle roof.

9.1.1.3 Measure and record the distance from the mounting surface to each of the four corners of the roof.

9.1.1.4 Employ a rectangular force application plate fitted as near as possible, to the contour of the ambulance roof. The application plate shall be a minimum of 5 in. (127 mm) longer and 5 in. (127 mm) wider than the vehicle roof of the patient's compartment. For the purposes of these measurements, the ambulance roof is that structure, seen in the top projected view that coincides with the patient compartment of the ambulance

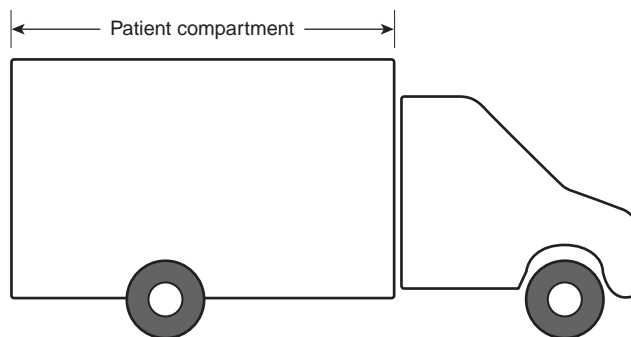


Figure 9.1.1.4(a) Type I and Type III Ambulance Patient Compartment Roof Measurement

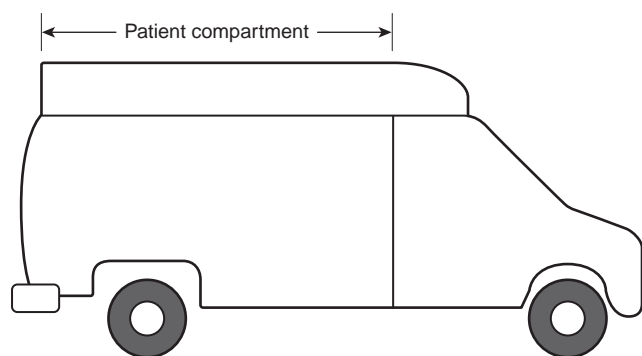


Figure 9.1.1.4(b) Type II Ambulance Patient Compartment Roof Measurement

- 9.1.1.5 Position the force application plate so that it is centered on the roof.
- 9.1.1.6 Close all ambulance doors
- 9.1.1.7 Load the application plate to 500 lbs (227 kg) at a deflection rate less than 0.5 in. (13 mm) per second.
- 9.1.1.8 Record elevation readings of all four corners of the roof.
- 9.1.1.9 Load the application plate to 50 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second.
- 9.1.1.10 Record elevation readings of all four corners of the roof.
- 9.1.1.11 Load the application plate to 100 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second.
- 9.1.1.12 Record elevation readings of all four corners of the roof.
- 9.1.1.13 Verify that patient compartment doors are capable of being opened and closed
- 9.1.1.14 Remove load.
- 9.1.1.15 Verify that patient compartment doors are capable of being opened and close
- 9.1.2 Side Crush Test (Type 1 and Type 3 only).
- 9.1.2.1 Place either side of the body, on a rigid horizontal surface so that the body is entirely supported.
- 9.1.2.2 Measure and record the distance from the mounting surface to each of the four top corners of the body side.
- 9.1.2.3 Employ a rigid, rectangular force application plate fitted as near as possible, to the contour of the ambulance side. The application plate shall be a minimum of 5 in. (127 mm) longer and 5 in. (127 mm) wider than the vehicle side of the patient's compartment.
- 9.1.2.4 Position the force application plate so that it is centered on the patient compartment side.
- 9.1.2.5 Close all ambulance doors
- 9.1.2.6 Load the application plate to 500 lbs (227 kg) at a deflection rate less than 0.5 in. (13 mm) per second.
- 9.1.2.7 Record elevation readings of all four corners of the body side.
- 9.1.2.8 Load the application plate to 50 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second.
- 9.1.2.9 Record elevation readings of all four corners of the body side.
- 9.1.2.10 Load the application plate to 100 percent of the final load at a deflection rate less than 0.5 in. (13mm) per second.
- 9.1.2.11 Record elevation readings of all four corners of the body side.
- 9.1.2.12 Verify that the rear patient compartment doors are capable of being opened and closed
- 9.1.2.13 Remove load.
- 9.1.2.17 Verify that the rear patient compartment doors are capable of being opened and closed
- 9.2 Body Door Test (applies to Type 1 and Type 3 only).
- 9.2.1 Position the test structure or ambulance on a level, horizontal surface.
- 9.2.2 The patient compartment shall be structurally complete, but need not include interior panels or cabinet installation.
- 9.2.4 Employ force application fixtures in such a manner that the opposing forces shall be supported by the body structure.
- 9.2.5 Apply forces for 10 seconds in all required directions and/or positions after the installation of associated body door retention components.
- 9.2.6 Apply forces for 10 seconds to a continuous hinge so that the load will be distributed equally from top to bottom.
- 9.2.7 Apply forces for 10 seconds to individual (strap type) hinges so that the load will be distributed proportionally on each hinge.
- 9.2.8 Apply forces so that it will be equally distributed as near the latch or hinge as practical.
- 9.3 Oxygen Tank Retention System Static Test.
- 9.3.1 Test the retention system in a substantially similar ambulance, or mounted to a structure that is substantially similar to the ambulance.

- 9.3.2 Apply forces using a rigid simulated cylinder having the same physical dimensions as the oxygen tank for which the tank holder was designed.
- 9.3.3 Apply each force so that it passes through the location that corresponds to the center of gravity of a full tank.
- 9.3.4 Apply the test force for 10 seconds in the direction of cylinder extraction and in both axial directions.

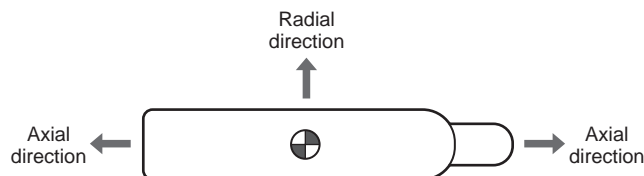


Figure 9.3 Oxygen Tank Retention Test

- 9.4 Patient Cot Retention System Static Test.
- 9.4.1 Test the retention system in a substantially similar ambulance, or mounted to a structure that is substantially similar to the ambulance floor.
- 9.4.2 Employ a test fixture that simulates the cot for which the retention system is designed.
- 9.4.3 Install the test fixture in the retention system in such a manner that will preclude contact friction with the floor or cabinet surfaces.
- 9.4.4 Apply each force so that it passes through the location that corresponds to the center of gravity of a loaded patient cot.
- 9.4.5 Apply the test force for 10 seconds in the fore, aft, side-to-side and vertical directions relative to the direction of vehicle travel.
- 9.4.6 Replace any damaged parts after each application of force (i.e., hooks, antlers or side bars)
- 9.4.7 Rotation or deformation of retention mechanisms does not constitute failure.
- 9.5 Low Voltage Electrical System Test.
- 9.5.1* The ambulance low voltage electrical system shall be tested as required by this section, the test results shall be certified by the ambulance manufacturer, and the certified test results shall be delivered with the ambulance.
- 9.5.2 Test Sequence.
- 9.5.2.1 The three tests defined in 9.5.2.2 through 9.5.2.4.4 shall be performed in the order in which they appear.
- 9.5.2.1.1 Before each test, the batteries shall be fully charged until the voltage stabilizes at the voltage regulator set point and the lowest charge current is maintained for 10 minutes.
- 9.5.2.1.2 Failure of any of these tests shall require a repeat of the sequence.
- 9.5.2.2 Reserve Capacity Test.
- 9.5.2.2.1 The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged.
- 9.5.2.2.2 The engine shall be shut off, and the minimum continuous electrical load shall be activated for 10 minutes.
- 9.5.2.2.3 All electrical loads shall be turned off prior to attempting to restart the engine.
- 9.5.2.2.4 The battery system shall then be capable of restarting the engine.
- 9.5.2.2.5 Failure to restart the engine shall be considered a test failure of the battery system.
- 9.5.2.3 Alternator Performance Test at Idle.
- 9.5.2.3.1 The minimum continuous electrical load shall be activated with the engine running at idle speed.
- 9.5.2.3.2 The engine temperature shall be stabilized at normal operating temperature.
- 9.5.2.3.3 The battery system shall be tested to detect the presence of battery discharge current.
- 9.5.2.3.4 The detection of battery discharge current shall be considered a test failure.
- 9.5.2.4 Alternator Performance Test at Full Load.
- 9.5.2.4.1 The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed.
- 9.5.2.4.2 The test duration shall be a minimum of 2 hours.
- 9.5.2.4.3 Activation of the load management system shall be permitted during this test.
- 9.5.2.4.4 An alarm sounded by excessive battery discharge, as detected by the warning system required in chapter 7 or a system voltage of less than 11.8 V dc for a 12 V nominal system, 23.6 V dc for a 24 V nominal system, or 35.4 V dc for a 42 V nominal system for more than 120 seconds shall be considered a test failure.
- 9.5.3 Low Voltage Alarm Test.
- 9.5.3.1 The following test shall be started with the engine off and the battery voltage at or above 12 V for a 12 V nominal system, 24 V for a 24 V nominal system, or 36 V for a 42 V nominal system.
- 9.5.3.2 With the engine shut off, the total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates.

9.5.3.3 The battery voltage shall be measured at the battery terminals.
 9.5.3.4 The test shall be considered a failure if the alarm does not sound in less than 140 seconds after the voltage drops to 11.70 V for a 12 V nominal system, 23.4 V dc for a 24 V nominal system, or 35.1 V for a 42 V nominal system.

9.5.3.5 The battery system shall then be able to restart the engine.
 9.5.3.6 Failure to restart the engine shall be considered a test failure.
 9.6 Patient Compartment Sound Level Test.

9.6.1 This test shall be performed during the following environmental conditions:

- (1) Temperature not to exceed 95°F (35° C).
- (2) Humidity not to exceed 75 percent relative humidity.
- (3) Wind velocity not to exceed 12 mph (19 km/hr).
- (4) Barometric pressure 29 to 31 in. Hg (98.2 to 104.9 kPa)

9.6.2 Measure sound level using a meter that meets requirements of the American National Standard Institute, Standard (ANSI) S1.4 — Specification for Sound Level Meters, for Type II meters. Set the meter to A — weighing network, “fast” meter response.

9.6.3 Suspend the microphone 23 in. (584 mm) above the vehicle floor; centered laterally and longitudinally on the expected center of the patient cot as it will be secured in the patient compartment..

9.6.4 Park ambulance on a concrete or asphalt surface, at a location so that no large reflecting surfaces, such as other vehicles, signboards, buildings or hills are within 50 ft (15.2 m) of the vehicle being tested.

9.6.5 Close all ambulance doors, windows and vents.

9.6.6 Run air conditioner and heater blower fans in patient compartment at their highest speed.

9.6.7 Set vehicle transmission in neutral gear and set the engine speed to the rpm obtained by the ambulance when operating on level ground at 55 mph (88 km/hr).

9.6.8 Turn on all warning lights

9.6.9 Operate siren in the loudest mode.

9.6.10 Measure and record the highest sound level.

9.6.11 Decrease the engine speed to idle and then back to the 55 mph (88 km/hr) rpm.

9.6.12 Measure and record the highest sound level

9.6.13 Repeat until two maximum sound levels within 2 decibels (db) of each other are recorded.

9.6.14 Numerically average these two maximum sound level readings.

9.7 Reserved .

9.8 Handrail Static Load Test.

9.8.1 Apply force to hand rail at the midpoint between every location where the hand rail fastens to the vehicle body structure and as near as possible to the ends of the handrail.

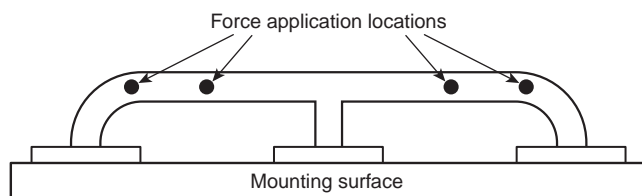


Figure 9.8.1 Location of Force Application on Handrail

9.8.2 Apply the force perpendicular to the mounting surface

9.8.3 Apply the force parallel to the mounting surface

9.8.4 Apply the force diagonal to the mounting surface at an angle midway between the perpendicular and the parallel pulls.

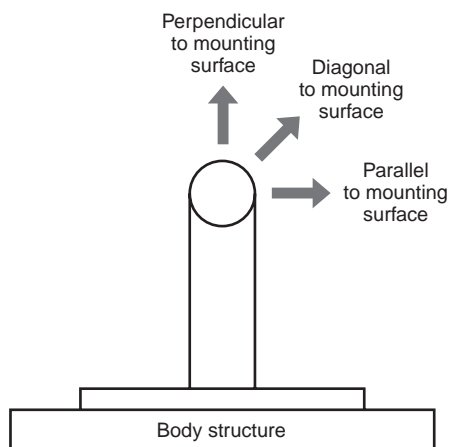


Figure 9.8.4 Direction of Force Application on Handrail

9.8.5 Maintain each force application for two minutes.

9.9* Line Voltage Electrical Systems Test.

9.9.1 The wiring and associated equipment shall be tested by the ambulance manufacturer or the installer of the line voltage system.

9.9.3* The electrical polarity of all permanently wired equipment, cord reels, and receptacles shall be tested to verify that wiring connections have been properly made.

9.9.4 Electrical continuity shall be verified from the chassis or body to all line voltage electrical enclosures, light housings, motor housings, light poles, switch boxes, and receptacle ground connections that are accessible to personnel in normal operations.

9.9.5 If the ambulance is equipped with a transfer switch, it shall be tested to verify operation and that all nongrounded conductors are switched.

9.9.6 Electrical light towers, floodlights, motors, fixed appliances, and portable generators shall be operated at their full rating or capacity for 30 minutes to ensure proper operation.

9.9.7* Certification Test of Power Source.

9.9.7.1 The ambulance manufacturer or installer of the power source shall perform a certification test on each power source.

9.9.7.2 The testing of any power source greater than 3 KW shall be witnessed, and the results of the tests of the power source shall be certified by an independent third-party certification organization.

9.9.7.3 Test Procedure.

9.9.7.3.1 The prime mover shall be started from a cold start condition, and the unloaded voltage and frequency shall be recorded.

9.9.7.3.2 The line voltage electrical system shall be loaded to at least 100 percent of the continuous rated wattage stated on the power source specification label. Testing with a resistive load bank shall be permitted.

9.9.7.3.3 The power source shall be operated in the manner specified by the ambulance manufacturer as documented on instruction plates or in operation manuals.

9.9.7.3.4 The power source shall be operated at a minimum of 100 percent of the continuous rated wattage as stated on the power source specification label for a minimum of 2 hours.

9.9.7.3.4.1 The load shall be adjusted to maintain the output wattage at or above the continuous rated wattage during the entire 2-hour test.

9.9.7.3.4.2 The following conditions shall be recorded at least every ½ hour during the test:

- (1) The power source output voltage, frequency, and amperes
- (2) The prime mover's oil pressure, water temperature, and transmission temperature, if applicable
- (3) The power source hydraulic fluid temperature, if applicable
- (4) The ambient temperature and power source air inlet temperature

9.9.7.3.4.3 The following conditions shall be recorded once during the test for power sources driven by dedicated auxiliary internal combustion engines:

- (1) Altitude
- (2) Barometric pressure
- (3) Relative humidity

9.9.7.3.5 If the generator is driven by the chassis engine and the generator allows for operation at variable speeds, the chassis engine speed shall be reduced to the lowest rpm allowed for generator operation and the voltage and frequency shall be recorded.

9.9.7.3.6 The load shall be removed, and the unloaded voltage and frequency shall be recorded.

9.9.7.3.7 Voltage shall be maintained within ± 10 percent of the voltage stated on the power source specification label during the entire test.

9.9.7.3.8 Frequency shall be maintained within ± 3 Hz of the frequency stated on the power source specification label during the entire test.

9.10 Water Leak Test.

9.10.1 This test shall be performed during the following environmental conditions:

- (1) Temperature above 40° F (4° C).
- (2) Wind velocity not to exceed 10 mph (16 km/hr).

9.10.3 Close all windows and doors

9.10.4 Turn off heating, ventilating and air conditioning (HVAC) systems.

9.10.5 Drench the entire roof, sides, front and back of the vehicle evenly with water spray from a nozzle or combination of nozzles.

9.10.6 Continue spraying until a minimum of 40 gal. (151 L) of water has been used.

9.10.7 Start engine and operate the cab and patient compartment ventilation systems at maximum ventilation rates.

9.10.8 Continue spraying until a minimum of 40 gal. (151 L) of water has been used.

9.10.9 Inspect the interior of the cab and patient compartment for water leaks during the duration of the test.

9.10.10 At the conclusion of the test examine all exterior lights and exterior compartments for leakage

9.11 Equipment Temperature Test.

9.11.1 Locate the test vehicle in an environmental chamber capable of maintaining a temperature within $\pm 4^\circ$ F (2° C).

9.11.2 Turn off all vehicle power.

9.11.3 Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors.

9.11.4 Maintain an air velocity over the vehicle of at least 5 mph (8 km/hr) throughout the entire test.

9.11.5 Cool the chamber to 32°F (0° C) and soak the vehicle at this temperature for a minimum of 3 hours.

9.11.6 Start the engine

9.11.7 Operate all vehicle systems for one hour while maintaining 32°F (0C) chamber temperature.

9.11.8 Shut off the engine

9.11.9 Heat the chamber to 95° F (35° C) and soak the vehicle at this temperature for a minimum of 3 hours.

9.11.10 Start the engine

9.11.11 Operate all vehicle systems for one hour while maintaining 95°F (35°C) chamber temperature.

9.11.12 Shut off the engine

9.12 Interior Climate Control Test.

9.12.1 Locate the test vehicle in an environmental chamber capable of maintaining a temperature within +/- 4°F (2°C).

9.12.2 Locate 3 thermocouples 7 in. (178 mm) off the floor along the patient compartment centerline and equally spaced from front to back.

9.12.3 Locate 3 thermocouples 7 in. (178 mm) below the ceiling along the patient compartment centerline and equally spaced from front to back

9.12.4 Locate 3 thermocouples midway between the floor and the ceiling along the patient compartment centerline and equally spaced from front to back

9.12.5 Locate 3 thermocouples in the cab horizontally positioned 24 in. (600 mm) above the seat cushion and located 12 in. (300) in front of the headrest. Locate first and third thermocouples along the centerline of driver's and passenger's seat and center the second between the first and third.

9.12.6 Turn off all vehicle power.

9.12.7 Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors.

9.12.8 Open engine hood.

9.12.9 Maintain an air velocity over the vehicle of at least 5 mph throughout the entire test.

9.12.10 Cool the chamber to 32°F ±4°F (0° C ±2°C) and soak the vehicle at this temperature for a minimum of 3 hours.

9.12.12 Close all doors and hood with exception of partition doors (if present) and patient compartment/cab partition window (if present)

9.12.13 Set heaters in cab and patient compartment to maximum heating setting (maximum temperature; maximum blower speed; re-circulating air).

9.12.14 Record the thermocouple temperatures

9.12.15 Shut off Patient compartment dome lights

9.12.16 Start engine and maintain transmission in neutral or park and engine high idle on with a maximum engine speed of 1,500 rpm.

9.12.17 Record thermocouple temperatures at 5 minute intervals up to 30 minutes.

9.12.18 Shut off the engine

9.12.19 Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors.

9.12.20 Open engine hood.

9.12.21 Heat the chamber to 95° F (35° C) with a minimum of 40 percent relative humidity and soak the vehicle at this temperature for a minimum of 3 hours.

9.12.25 Close all doors and hood with exception of partition doors (if present) and patient compartment/cab partition window (if present)

9.12.26 Set air conditioners in cab and patient compartment to maximum cooling setting (maximum blower speed, coldest temperature setting, re-circulating air).

9.12.27 Record the thermocouple temperatures

9.12.28 Shut off Patient compartment dome lights

9.12.29 Start engine and maintain transmission in neutral or park and engine high idle on with a maximum engine speed of 1,500 rpm.

9.12.30 Record thermocouple temperatures at 5 minute intervals up to 30 minutes.

9.12.31 Shut off the engine

9.13 Reserved.

9.14 Engine Cooling System Test.

9.14.1 Locate the test vehicle in an environmental chamber capable of maintaining a temperature within +/- 4°F (2°C).

9.14.2 Turn off all vehicle power.

9.14.3 Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors.

9.14.4 Heat the chamber to 95° F (35° C) and soak the vehicle at this temperature for a minimum of 3 hours.

9.14.5 Start the engine

9.14.6 Close all doors, hood, partition door (if present) and patient compartment/cab partition window (if present).

9.14.7 Maintain an air velocity over the vehicle of at least 5 mph (8 km/hr) throughout the entire test.

9.14.8 Set air conditioners in cab and patient compartment to maximum cooling setting (maximum blower speed, coldest temperature setting, re-circulating air).

9.14.9 With all other ambulance equipment off, operate the engine at high idle for one hour.

9.15 Ambulance Main Oxygen System Test.

9.15.1 Pressure Test.

9.15.1.1 Ensure that the ambulance temperature has stabilized in an environment between 34° and 110°F (1° and 43°C).

9.15.1.2 Charge the system with approximately 200 psi (1380 kPa) of test gas.

9.15.1.3 Close system valves to trap pressure in the lines that contain the vent valve

9.15.1.4 Record system pressure with an accuracy of ± 0.1 psi (7 kPa)

9.15.1.5 Allow system to rest without disturbance for 2 hours.

9.15.1.6 Record system pressure.

9.15.2 Flow Test.

9.15.2.1 Ensure that the ambulance temperature has stabilized in an environment between 34° and 110°F (1° and 43°C).

9.15.2.2 Charge the system with test gas regulated to 50 ± 2 psi (345 ± 14 kPa).

9.15.2.3 Plug all outlets other than the one being tested

9.15.2.4 Measure and record the flow of gas from each outlet using a flow meter with an accuracy of ± 2 liters per minute.

9.15.2.5 For the purpose of this test 110 liters per minute of breathing air or dry nitrogen is considered equivalent to 100 liters per minute of oxygen.

9.15.2.6 Check the electrical continuity between the oxygen system piping and the vehicle to verify that it is grounded.

9.16 Patient Compartment Lighting Level Test.

9.16.1 Prepare the ambulance or locate it in an environment to prevent light from penetrating into the patient compartment.

9.16.2 Remove the patient cot

9.16.3 Start Engine

9.16.4 Turn on dome lights to highest setting

9.16.5 Measure and record the light intensity along the longitudinal centerline of the patient compartment floor every 10 inches.

9.16.6 Turn on the lights that come on with the side entry door or rear entry door

9.16.7 Measure and record the light intensity along the longitudinal centerline of the patient compartment floor every 10 inches.

9.16.8 Measure and record the light intensity in the center of the side entry step well and record the reading.

9.16.9 Install the patient cot test grid in Figure 9.16.9, 17 in. (432 mm) above the patient compartment floor; centered laterally and longitudinally on the expected center of the patient cot as it will be secured in the patient compartment.

9.16.10 Measure and record the light intensity in the center of each 5 in.2 (322 mm2) are on the test grid

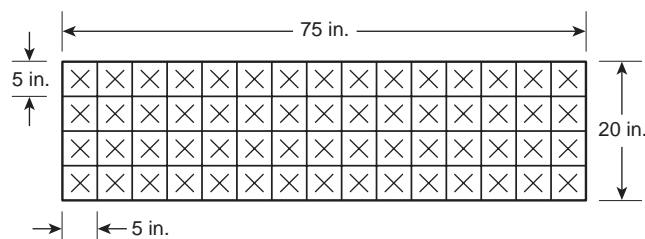


Figure 9.16.9 – Patient Cot Test Grid Top View

9.18 Rear Stepping Surface Load Test.

9.18.1 Support the ambulance or substantially similar structure to negate the effect of the vehicle suspension.

9.18.2 Apply vertical load on the stepping surface using a fixture that distributes the load over a circular area 5 in. (127 mm) in diameter.

9.18.3 Apply 500 lb. (227 kg) of load to the lateral and longitudinal center of the stepping surface.

9.18.4 Record deflection during the load application

9.18.5 Release Load

9.18.6 Measure and record any permanent deformation after the load is released.

9.18.5 Apply 500 lb. (227 kg) of load to the longitudinal center of the stepping surface as close to each of the lateral extremes as the test fixture will allow.

9.18.7 Record deflection during the load application

9.18.8 Release Load

9.18.9 Measure and record any permanent deformation after the load is released.

9.19 Reserved.

9.20 Reserved.

9.21 Aspirator System Test.

9.21.1 Ensure that the ambulance temperature has stabilized in an environment between 34° and 110°F (1° and 43°C)

9.21.2 Run the vehicle engine at high idle speed for duration of the test.

9.21.3 Vacuum Test.

9.21.3.1 Install a 120 in. (3 m) length of transparent or translucent, non-kinking suction tubing on the collection bottle.

- 9.21.3.2 Install a vacuum measuring instrument capable of an accuracy of ± 5 mm Hg to measure the vacuum in the collection bottle.
- 9.21.3.3 Open the vacuum control and shut-off valve to their full-open position.
- 9.21.3.4 Turn on vacuum pump.
- 9.21.3.5 Clamp or plug end of suction tubing.
- 9.21.3.6 Measure and record the vacuum 4 seconds after plugging the tubing.
- 9.21.4. Flow Test.
- 9.21.4.1 Install a flow measuring instrument capable of an accuracy of ± 1 lpm to measure the flow in the suction tubing.
- 9.21.4.2 Open the vacuum control and shut-off valve to their full-open position.
- 9.21.4.3 Turn on vacuum pump.
- 9.21.4.4 Measure and record the flow.
- 9.22 Cold Engine Start Test.
- 9.22.1 Locate the test vehicle in an environmental chamber capable of maintaining a temperature within $\pm 4^\circ\text{F}$ ($\pm 2^\circ\text{C}$).
- 9.22.2 Turn off all vehicle power.
- 9.22.3 Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors.
- 9.22.4 Maintain an air velocity over the vehicle of at least 5 mph (8 km/hr) throughout the entire test.
- 9.22.5 Cool the chamber to 0°F (-18°C) and soak the vehicle at this temperature for a minimum of 3 hours.
- 9.22.6 Close all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors.
- 9.22.7 Start the engine.
- 9.22.8 Run the engine for 5 minutes.
- 9.23 Reserved.
- 9.24 Perimeter Illumination Test.
- 9.24.1 Locate the ambulance in dark environment.
- 9.24.2 Ensure that the vehicle batteries are fully charged.
- 9.24.3 Record light intensity with a meter capable of measuring to an accuracy of ± 0.01 fc.
- 9.24.4 Construct a grid of test points off of the sides and rear of the test ambulance as shown in Figure 9.24.
- 9.24.4.1 Locate lines parallel with the exterior walls of the patient compartment 60 in. (1524 mm) and 120 in. (3048 mm) from the test unit.
- 9.24.4.2 Intersect these lines with lines perpendicular to the exterior walls emanating from each corner and the mid-point of the patient compartment.
- 9.24.4.3 Construct additional perpendicular lines emanating from the center of each scene light.
- 9.24.5 Measure and record the light intensity at each point in the grid.
- 9.24.6 Turn on all exterior scene lights.
- 9.24.7 Measure and record the light intensity at each point 3 in. (76 mm) above the grid.
- 9.24.8 Subtract the ambient light readings from the scene light readings.

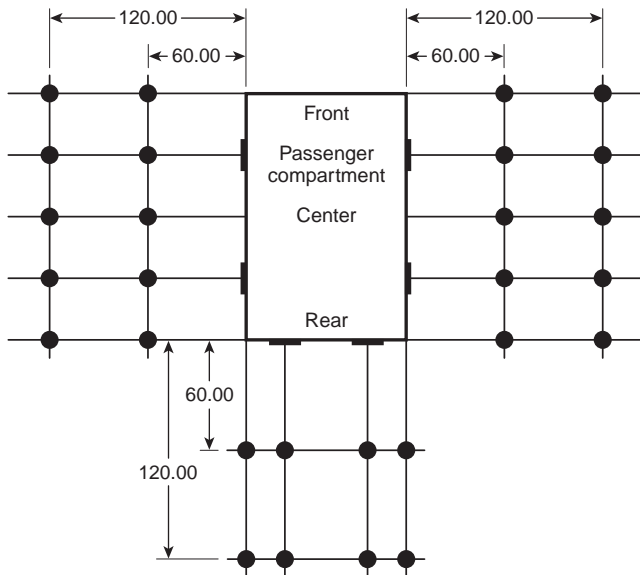


Figure 9.24 Perimeter Illumination Test Grid

- 9.25 Occupant Head Clearance Zones.
- 9.25.1 Construct a rigid rectangular test box 43 in. (1,092 mm) high, 18 in. (457 mm) wide, and 15 in. (381 mm) deep.
- 9.25.2 Maximum weight for the test fixture shall not exceed 60 lbs (27 kg).
- 9.25.3 Place the test box in each seating position, centered laterally on the seat cushion, with the bottom edge resting against the seat back.
- 9.25.4 Align the test box so that the sides of the box are perpendicular to the patient compartment floor.

- 9.25.5 No permanent objects shall protrude into the test box zone.

Annex A Explanatory Material

Annex A is not a part of the requirements of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.

A.1.4 It is not intended that this standard be applied retroactively to existing ambulances. However, if major renovations are made to an existing ambulance, it is suggested that the ambulance be brought into line with this standard as closely as possible.

A.1.6 Metric units of measurement in this standard are in accordance with the modernized metric system known as the International System of Units (SI). The liter, a unit that is outside of but recognized by SI, is commonly used in international fire protection. Table A.1.6(a) and Table A.1.6(b) provide U.S.-to-SI conversion factors and SI-to-U.S. conversion factors as an aid to the user. Table A.1.6(c) provides other conversion factors that could be useful to the reader. Table A.1.6(d) provides a list of the abbreviations used in this standard and their meanings.

Table A.1.6(a) Conversion Factors: U.S. Units to SI Units		
U.S. Units		SI Units
1 gallon per minute (gpm)	=	3.785 liters per minute (L/min)
1 imperial gallon per minute (igpm)	=	4.546 liters per minute (L/min)
1 pound per square inch (psi)	=	6.895 kilopascals (kPa)
1 inch of mercury (in. Hg) at 60°F (15.6°C)	=	3.377 kilopascals (kPa)
1 inch (in.)	=	25.40 millimeters (mm)
1 foot (ft)	=	0.305 meter (m)
1 cubic foot (ft ³)	=	0.0283 cubic meter (m ³)
1 square inch (in. ²)	=	645.2 square millimeters (mm ²)
1 mile per hour (mph)	=	1.609 kilometers per hour (km/hr)
1 pound (lb)	=	0.454 kilogram (kg)
1 horsepower (hp)	=	0.746 kilowatt (kW)
1 candlepower (cp)	=	12.566 lumens
1 pound per cubic foot (lb/ft ³)	=	16 kilograms per cubic meter (kg/m ³)
1 footcandle (fc)	=	10.764 lux (lx)
1 footlambert	=	3.427 candela/m ²

Table A.1.6(b) Conversion Factors: SI Units to U.S. Units		
SI Units		U.S. Units
1 liter per minute (L/min)	=	0.264 gallon per minute (gpm)
1 liter per minute (L/min)	=	0.22 imperial gallon per minute (igpm)
1 kilopascal (kPa)	=	0.145 pound per square inch (psi)
1 kilopascal (kPa)	=	0.2962 in. Hg at 60°F (15.6°C)
1 millimeter (mm)	=	0.0394 inch (in.)
1 meter (m)	=	3.281 feet (ft)
1 cubic meter (m ³)	=	35.31 cubic feet (ft ³)
1 square millimeter (mm ²)	=	0.00155 square inch (in. ²)
1 kilometer per hour (km/hr)	=	0.6214 mile per hour (mph)
1 kilogram (kg)	=	2.2 pounds (lb)
1 kilowatt (kW)	=	1.34 horsepower (hp)
1 lumen	=	0.08 candlepower (cp)
1 kilogram per cubic meter (kg/m ³)	=	0.062 pound per cubic foot (lb/ft ³)
1 lux (lx)	=	0.092 footcandle (fc)
1 candela/m ²	=	0.292 footlambert

Table A.1.6(c) Other Useful Conversion Factors		
1 gallon per minute (gpm)	=	0.833 imperial gallon per minute (igpm)
1 imperial gallon per minute (igpm)	=	1.2 gallons per minute (gpm)
1 foot (ft) of water	=	0.433 pound per square inch (psi)
1 pound per square inch (psi)	=	2.31 feet (ft) of water
1 metric ton (mton)	=	1000 kilograms (kg)
1 kilopascal (kPa)	=	0.01 bar
1 bar	=	100 kilopascals (kPa)

Table A.1.6(d) Abbreviations Used in This Standard

Abbreviation	Term
A	ampere(s)
ac	alternating current
C	Celsius
cd	candela(s)
dc	direct current
F	Fahrenheit
fc	footcandle(s)
ft	foot (feet)
gpm	gallon(s) per minute
hp	horsepower
in.	inch(es)
in. Hg	inch(es) of mercury
kg	kilogram(s)
km/hr	kilometer(s) per hour
kPa	kilopascal(s)
kW	kilowatts(s)
L	liter(s)
L/min	liter(s) per minute
lx	lux
m	meter(s)
mm	millimeter(s)
mph	mile(s) per hour
NH	National Hose
psi	pound(s) per square inch
rms	root mean square
V	volt(s)

A.2.3.17 Use of the “STAR OF LIFE” symbol must be in accordance with the purpose and use criteria set forth in published guidelines by the National Highway Traffic Safety Administration, an operating administration of the U.S. Department of Transportation.

A.3.2.1 Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

A.3.2.2 Authority Having Jurisdiction (AHJ). The phrase “authority having jurisdiction,” or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

A.3.2.4 Listed. The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.

Contractor. The contractor might not necessarily manufacture the fire apparatus or any portion of the fire apparatus but is responsible for the completion, delivery, and acceptance of the entire unit.

Electronic Siren. Varied types of warning sounds can be produced by electronic sirens, such as a wail, yelp, or simulated air horn.

GAWR (Gross Axle Weight Rating). It is a requirement of the National Highway Traffic Safety Administration (NHTSA) that the GAWR be posted in the vehicle on a permanently affixed label. The axle system includes, but is not limited to, the axle, tires, suspension, wheels, frame, brakes, and applied engine torque.

GCWR (Gross Combination Weight Rating). A combination vehicle is the combination of a towing vehicle and one or more towed units (trailers). When a trailer is detachable, the GCWR limits the maximum loaded weight for

any replacement trailer. The in-service weight or gross combination weight, including any connected trailer, should always be equal to or less than the GCWR.

Grade. A 45-degree slope is equal to a 100-percent grade.

GVWR (Gross Vehicle Weight Rating). It is a requirement of the National Highway Traffic Safety Administration (NHTSA) that the GVWR of a vehicle be posted in the vehicle on a permanently affixed label. The GVWR can be equal to or less than the sum of the front GAWR and the rear GAWR. The in-service weight or gross vehicle weight should always be equal to or less than the GVWR.

Optical Source. An optical source can consist of a single optical element or a fixed array of any number of optical elements whose geometric positioning relative to each other is fixed by the manufacturer of the optical source and is not intended to be modified.

Substantially Similar Ambulance. It is not practical to test every production vehicle to validate performance compliance. The substantially similar definition allows those requirements that call for a test on a substantially similar ambulance to be performed once, rather than on every production vehicle.

Turning Clearance Radius. An aerial fire apparatus might have a larger overall clearance diameter if measured at the forwardmost point of the aerial device.

A.4.8.1 The engine compartment and the underside of the vehicle are not considered areas of normal nonmaintenance operation.

A.4.9.2 All required signs, instruction plates, and labels should be highly visible and placed on the vehicle where they are not subject to damage from wear and tear.

A.4.11.1 The attachment of electric, air, hydraulic, and other control lines and hoses should be with removable mechanically attached fastening devices. The attachment of such equipment with adhesive or glue-on clamps or clips has been found to be inadequate for long-term performance on ambulance. The use of plastic ties to bundle wire harnesses and hose is permissible, but ties should not be used to attach such items to a cab, body, frame, or other major structure.

A.4.12.3 The interior of the ambulance patient compartment should be maintained at a minimum temperature of 50°F (10°C) when the ambulance is prepared for immediate response. The purchaser should consider how this will be accomplished. If the ambulance will not be housed in a heated facility, then other means may be required to ensure that this requirement is met. This requirement does not apply to ambulances that are fully operational but being held in reserve or ambulances that are not fully operational.

The ambulance and all systems, components and equipment shall be capable of being stored at 32° F to 95° F (0°C to 35°C) without damage or deterioration.

A.4.13.4 Although this standard recognizes the need for the ambulance to be able to accelerate to a high speed while traveling on public roads, caution should be taken with regard to how fast the ambulance can travel.

Where the ambulance has to operate off paved roads, all-wheel drive, a two-speed rear axle, an auxiliary transmission, an automatic transmission, or any combination of these might enhance the ambulance off-road capability.

A.4.16 It is important for the purchaser and the contractor to agree on the format in which the documentation is to be delivered. It is also important that the purchaser consider the long-term ramifications of changing media technology if electronic format is used for delivery of the documentation. Software and hardware will need to be maintained over the years to utilize electronic documentation.

A.4.16.2 It is critical that the purchaser provide the manufacturer the equipment inventory and mounting locations for equipment on the ambulance. This information should include existing equipment and estimated future equipment to be carried. The projections of total equipment payload and mounting locations are essential for proper engineering of a new ambulance. It is the responsibility of the purchaser to properly load the ambulance and place equipment to comply with the GVWR, the front-to-rear weight distribution, and the right-to-left load balance requirements of this standard.

A.4.17.2.3 Suppliers of components and equipment installed or supplied by the contractor often supply operations and maintenance documents with those components or equipment. This standard requires that the contractor deliver these documents to the purchaser. The purchaser should specify if multiple copies of these documents are required.

A.4.17.3.1 The label shown in Figure 4.17.3.1 is a suggested format. Deviations in dimensions are acceptable.

A.4.17.4.1 The form shown in Figure 4.17.4.1 is a suggested format. Deviations in dimensions are acceptable.

A.5.1.4.2 It is important for apparatus drivers to understand the height, length, and weight of the vehicle compared to their personally owned vehicles. It is also important that this information be accurate. Because the height of the apparatus could change after delivery, depending on what equipment might be added, the department must note such changes on the plate. Suggested wording for the plate is shown in Figure A.5.1.4.2.

A.5.2 Weight Distribution Measurement and Calculation Methods Payload Determination

Subtract the total curb weight of the completed vehicle from the GVWR. Any permanently attached, optional items of equipment specified by the customer are to be included in the curb weight of the completed vehicle. Any other items of optional equipment (i.e., not permanently attached and/or removable) are to be included in the payload requirement.

A.5.2.2 The projections of total equipment payload and mounting locations are essential for proper engineering of a new ambulance. The purchaser of the

ambulance should maintain the side-to-side loading requirement in 5.2.2 as equipment is loaded or installed on the ambulance.

The percentage difference in side-to-side tire load should be calculated as shown in the following formula:

A.5.4.1 An increase in engine speed provides increased alternator output, increased engine cooling, increased air conditioner output, and increased output or performance from other devices that derive their power from the chassis engine.

A.5.5.1 Where local environmental extremes exist — that is, high humidity and temperatures or extreme low temperatures — the purchaser should state specifically under what environmental conditions the ambulance is expected to operate.

A.5.7.3 Purchasers of ambulances with a GVWR less than 36,000 lb (16,300 kg) should also consider equipping the ambulance with an auxiliary braking system. Ambulances commonly make repeated stops from high speeds that cause rapid brake lining wear and brake fade, sometimes leading to accidents. Auxiliary braking systems are recommended on ambulances that are exposed regularly to steep or long grades, operate in congested areas where repeated stops are normal, or respond to a high number of emergencies.

Examples of auxiliary braking systems include engine retarders, transmission retarders, exhaust retarders, and driveline retarders. These devices have various levels of effectiveness on braking. In addition, the systems can be activated by various means and settings, both automatic and manual in operation. The purchaser should carefully evaluate all auxiliary braking systems based on vehicle weight, terrain, duty cycle, and many other factors. Some auxiliary braking devices should be disconnected when the apparatus is operated on slippery surfaces. Follow the auxiliary braking device manufacturer's recommendations for proper instructions.

A.5.8.1 The angle of approach or departure affects the road clearance of the vehicle going over short steep grades such as would be found in a driveway entrance, crossing a high crowned road at a right angle, or off-road service. Too low an angle of approach or departure will result in the vehicle scraping the ground. Figure A.5.8.1 shows the method of determining the angle of departure. The angle of approach (front of vehicle) is measured in the same fashion.

In Figure A.5.8.1, the line AT represents the circumstance in which the rear bumper is the determining lowest point. The line BT represents a circumstance in which the rear bumper is not the lowest point (in this case, the lowest point is a fuel tank). The angle of departure is shown as XA or XB. To determine the angle of departure, place a thin steel strip against the rear of the tires where they touch the ground or stretch a string tight from one rear tire to the other at the rear of where they touch the ground. Determine the lowest point (the bumper, fuel tank, or other equipment or component) that would make the smallest angle of departure. Hang a plumb bob from the lowest point and mark the point on the ground where the point of the plumb bob touches. Measure the vertical distance from the ground to the point where the plumb bob was hung (distance V). Measure the horizontal distance from the plumb bob point to the front of the steel strip or to the string running from rear tire to rear tire (distance H). Divide the vertical distance (V) by the horizontal distance (H). The ratio of V/H is the tangent of the angle of departure. If this ratio is known, the angle of departure can be determined from a table of trigonometric functions of angles or from a math calculator.

A.5.8.2 Traction control features may include positive locking differential, limited slip differential, electronic traction control, etc...

A.5.9.6 Proper tire inflation is essential to the safe operation of any motor vehicle. Proper inflation improves the handling characteristics and minimizes the risk of rollover.

A.5.10 Electronic Stability Control (ESC) uses a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls in conjunction with the antilock brake system (ABS). The system tracks the direction that the driver intends to steer and uses brake application at individual wheels to help straighten out the vehicle. While the design and features of the vehicle are important to safe driving, the most important aspect of crash prevention is the skill and experience of the operator. The operator's attitude, training, experience, qualifications, and the application of those qualities are the most important elements in crash prevention. The operator must ensure that the physical limits of the vehicle are not exceeded. Driver skill is developed only through training and practice.

A.5.11.1 The purchaser may wish to specify front and/or rear tow hooks or tow eyes be attached to the frame structure to allow towing (not lifting) of the ambulance without damage.

A.5.14 Purchasers may wish to consider specifying that all mirror head faces be independently adjustable from the driver's position when this feature is available from the OEM.

A.6.11.5 The intent of step size and placement requirements is to ensure that the foot is supported when it is placed on the step in the normal climbing position. In some cases the most natural method of mounting a step may not be perpendicular to the leading edge (common on chassis where it would be natural not to open the door completely to the 90 degree point and enter the door opening at a diagonal from the rear). In these cases the clearance measurement can be taken diagonally across the step in the natural direction of climb.

A.6.17 MEASURING GUIDELINES: CABINETS & COMPARTMENTS
[Consider making this a separate annex. The amount of info and level of detail would be best suited as an annex]

Cabinet Depth: The dimension from the cabinet inside back wall to the outside cabinet face.

Compartment Depth: The dimension from the compartment inside back wall to the outside compartment face.

Door OD: The door overall outside thickness (dimension).

Depth ID: The actual interior depth either measured or figured by subtracting the Door OD from the cabinet or compartment measured depth.

Height ID: The dimension from the interior bottom surface to the interior surface of the cabinet or compartment top.

Width ID: The dimension from one interior surface to the next interior surface of the cabinet or compartment.

Sliding Window Track: The track used for sliding cabinet windows.

Sliding Cabinet Windows: The sliding doors used on interior cabinets.

Interior cabinet with sliding doors or roll-up doors (Figure 1).

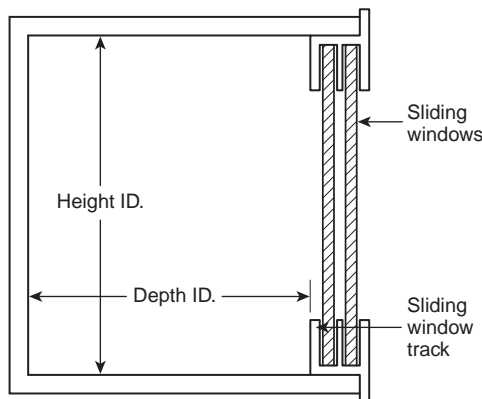


Figure 1

- Measuring from the back of the rear wall to the back of the sliding window track, record that dimension for Depth ID.
- Measuring from cabinet interior wall to wall, record that dimension for Width ID.
- Measuring from the interior top to bottom, record dimension. This is the Height ID.
- Multiply Height ID x Width ID x Depth ID = then divide by 1,728 to get cubic feet.

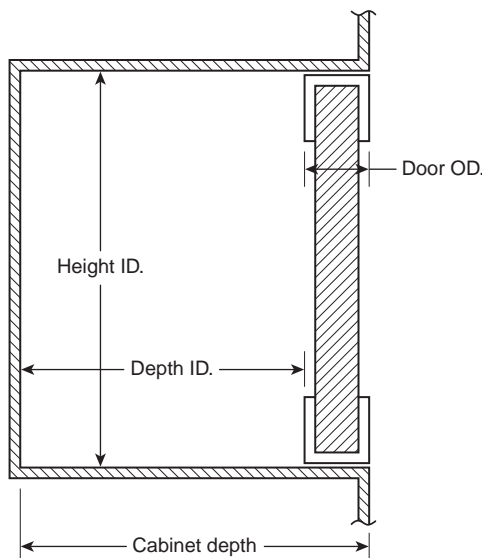


Figure 2

Interior cabinets with hinged doors (Figure 2).

- Measure from the back of the door to the face of the door and record that dimension for Door OD.
- Measure from the back of the rear wall to the cabinet face and record that dimension for cabinet depth.
- Subtract the Door OD from the cabinet depth to get Depth ID.
- Measure from cabinet interior wall to wall and record that dimension for Width ID.
- Measure from the interior top to bottom and record dimension. This is the Height ID.
- Multiply Height ID x Width ID x Depth ID = then divide by 1,728 to get cubic feet.

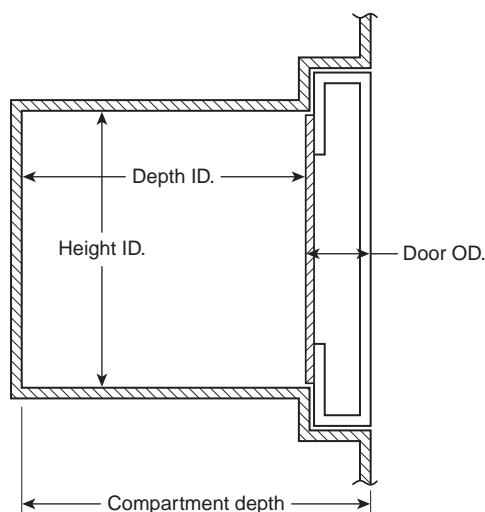


Figure 3

Exterior Compartments with hinged doors (Figure 3).

- a. Measure from the back of the door to the face of the door and record that dimension for Door OD.
- b. Measure from the back of the rear wall to the cabinet face and record that dimension for cabinet depth.
- c. Subtract the Door OD from the cabinet depth to get Depth ID.
- d. Measure from cabinet interior wall to wall and record that dimension for Width ID.
- e. Measure from the interior top to bottom and record dimension this is the Height ID.
- f. Multiply Height ID x Width ID x Depth ID = then divide by 1,728 to get cubic feet.

NOTE: Subtract any notches for spring shackles or fuel systems from the total to get the correct total cubic feet.

A.6.24.2 It is not recommended that SCBA packs be stored in the patient compartment because of the risk of contamination. If the purchaser does specify SCBA storage in seat backs, then they should meet the requirements found in NFPA 1901.

A.6.24.3.1 Purchasers may wish to consider specifying seat belt colors such as bright red or bright orange. Bright belt colors are easier to see on drive-cam videos or by observation through the window when enforcing seat belt use compliance.

FMVSS 210 S4.3.1.1 requires that the lap portion of the belt in any Designated Seating Position does not constrain the occupant high across the belly.

FMVSS 210-S5.1 requires that seat belt anchorages for side facing seatbelt assembly shall withstand a minimum of 1134 kg (2,500 lbs.) force.

A.6.29 The purchaser should specify whether the striping required under this standard will be provided by the manufacturer on delivery of the apparatus or will be installed by the purchaser or its designee following delivery. In any event, the required striping must be installed before the unit is placed in emergency service.

A.6.29.1 If the purchaser specifies exterior doors, consideration should be given to affixing the stripe of reflective material in a location that will not be obscured or lost when the doors are open.

A.7.1 This chapter defines the requirements for alternators, batteries, load management, and instrumentation to detect incipient electrical system failure. The intent is to require an electrical system that will operate the ambulance using power supplied by the alternator, shed nonessential electrical loads where necessary, and provide early warning of electrical failure in time to permit corrective action.

A.7.2.1.1 The 125 percent requirement for wiring and circuits is intended to provide reduced voltage drop over wire rated based on ampacity due to heating. In low voltage wiring, voltage drop becomes a problem before the thermal limit of current carrying capacity of a wire is reached. This requirement also ensures that the circuit protection will prevent damage to the wire in the event of a short or an overload. It is not the intent of this requirement to have the final-stage manufacturer replace the chassis manufacturer's original equipment wiring to meet the 125 percent requirement. It is also not the intent of this requirement to have electrical accessories purchased by the ambulance manufacturer rewired to meet the 125 percent requirement. Electrical device manufacturer-supplied wiring can be used to the point where it connects to the ambulance manufacturer's installed wiring.

A.7.2.2.9 It is the intent of 7.2.2.9 to provide a unique means of identifying a wire or circuit to prevent confusing it with another wire or circuit if electrical system repairs become necessary. If a color coding scheme is used instead of some other unique identification, that color should not be reused for a wire in

any unrelated circuits within the same harness. However, 7.2.2.9 covers low voltage wiring only and does not apply to shielded cables commonly used for communication purposes or wiring used in line voltage circuits.

A.7.3.2 The minimum alternator size is developed using the loads required to meet the minimum continuous electrical load. Most ambulance will actually have loads exceeding the minimum requirements of this standard. The purchaser should review the maximum current output of the alternator versus the load study supplied for the ambulance from the manufacturer for on-scene and responding modes.

A.7.4.1(10) The purchaser should analyze the electrical loads that need to be maintained to fulfill the mission of the ambulance and define those loads for the manufacturer of the ambulance. The purchaser needs to understand, however, that there is a limit to the output capacity of an alternator system on the ambulance's engine and that this standard requires that the ambulance be capable of maintaining the minimum continuous electrical load under the conditions defined in 7.3.2. When that load is exceeded and larger alternators are not available, the purchaser and the manufacturer need to work together to determine how to reduce the minimum continuous electrical load to that which can be sustained under the conditions defined in 7.3.2.

A.7.4.3 The unexpected shutdown of an ambulance during a response can place patients in mortal danger and seriously affect the life saving ability of the crew. With computer-controlled engines and transmissions as well as other controls, an electrical system failure could result in an immediate and total shutdown of the ambulance. The low voltage monitoring system is intended to provide an early warning of an impending electrical failure and provide enough time to permit operator intervention.

A.7.5.1 Electrical loads on ambulances frequently exceed the alternator capacity. Exceeding alternator capacity will result in the deep discharge of the ambulance batteries. Automatic load management is intended to protect the batteries and electrical system from needless damage while maintaining the operation of essential devices.

It is important that the priority of all managed loads be specified by the purchaser so that, as electrical loads are disconnected from the ambulance's electrical systems, they are shed in an order least likely to affect emergency operations. Optical warning devices in excess of the minimum required in this standard can and should be load managed.

A.7.6 Batteries usually have two ratings: "cold cranking amperes," which determine the size engine that can be started, and "reserve capacity," which provides a measure of the total power that can be provided at a much lower constant rate of discharge. Ambulance batteries should be sized to have enough cold cranking amperage and reserve capacity to restart the engine after being substantially discharged.

A.7.6.3.3 Overheating of a battery will cause rapid deterioration and early failure; evaporation of the water in the battery electrolyte can also be expected.

A.7.6.5 The power cord from the onboard charger or battery conditioner should be plugged only into a receptacle protected by a ground-fault circuit interrupter (GFCI) at the shoreline origination point.

A.7.6.7 The purchaser might want to add an illuminated "Module Disconnect" switch which could control all electrical loads for the module. The illuminated switch could control a solenoid. If the switch is specified it should be located in the driver's compartment, be legibly marked, illuminated when "ON," and rated to carry at least 125 percent of the circuit's maximum current, unless it operates a solenoid. If the switch operates a solenoid then the solenoid should be rated for 125 percent of the circuit's maximum current. The module disconnect switch or device shall be different in feel from other switches, or be physically isolated from them.

A.7.8 SAE J551/1 provides test procedures and recommended levels to assist engineers in the control of broadband electromagnetic radiation and in the control of radio interference resulting from equipment installed on the ambulance. Adherence to the recommended levels will minimize the degradation effects of potential interference sources in the communication equipment or other devices susceptible to electromagnetic interference. Procedures are included to measure the radiation from a single device or the entire ambulance. Compliance could be determined through actual tests on the completed ambulance or predictions based on tests previously conducted on similarly equipped apparatus. If compliance certification is required, it should be so indicated in the ambulance specifications.

A.7.9.1 The upper-level optical warning devices provide warning at a distance from the ambulance and the lower-level optical warning devices provide warning in close proximity to the apparatus. (See Figure A.7.9.1.)

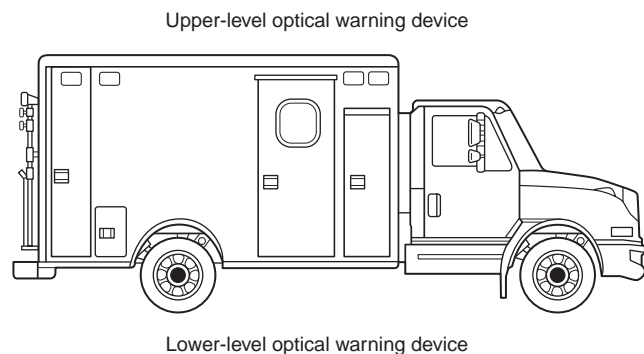


Figure A.7.9.1 Upper- and Lower-Level Optical Warning Devices.

We need to change this figure to an ambulance.

A.7.9.7.3 Under typical conditions, the specified optical warning system provides effective, balanced warning. In some situations, however, the safety of the ambulance can be increased by turning off some warning devices. For example, if other vehicles need to pass within close proximity to the parked ambulance, the possibility of distracting other drivers can be reduced if the headlights and lower-level warning lights are turned off. In snow or fog, it might be desirable to turn off forward-facing strobes or oscillating lights to reduce visual disorientation of the ambulance driver.

The intent of the warning light system is to provide full coverage signals through the operation of a single master switch when the ambulance is either responding or blocking the right-of-way. There is no intent to prevent the use of lower levels of warning when the ambulance driver believes such reductions are appropriate, given the vehicle's mission, the weather, or other operational factors. Additional switches downstream of the master switch can be specified by the purchaser to control individual devices or groups of devices.

Purchasers might want to specify traffic flow-type lighting such as amber directional indicators for use in alerting approaching motorists of blocked or partially blocked highways.

A.7.9.10 When a component such as a flasher or power supply is used to operate more than one optical source, the optical sources should be connected so that the failure of this component does not create a measurement point without a warning signal at any point in any zone on either the upper or lower level. Although a single optical source can be used to provide warning signals into more than one zone, the possibility of a total signal failure at a measurement point is increased when the same flasher or power supply is used to operate multiple optical sources, each providing signals into more than one zone.

A.7.9.12 Flashing headlights are used in many areas as warning lights and provide an inexpensive way to obtain additional warning to the front of the ambulance. Daylight flashing of the high beam filaments is very effective and is generally considered safe. Nighttime flashing could affect the vision of oncoming drivers as well as make driving the ambulance more difficult.

In some jurisdictions, headlight flashing is prohibited or limited to certain types of emergency vehicles. If flashing headlights are employed on ambulance, they are to be turned off when the ambulance headlights are on. They should also be turned off along with all other white warning lights when the apparatus is in the blocking mode. Steady burning headlights are not considered warning lights and can be illuminated in the blocking mode to light the area in front of the ambulance. Consideration should be given, however, to avoid shining lights into the eyes of oncoming drivers.

A.7.9.13 The minimum optical warning system should require no more than an average of 40 A for the operation of the upper-level and lower-level devices in the blocking mode. On ambulance whose length requires midship lights, no more than 5 A of additional current should be required for the operation of each set of midship lights. Optical warning systems drawing more than 40 A might necessitate modification of the electrical system specified in Section 7.3 in order to supply the additional power required.

See Figure A.7.9.13(a) and Figure A.7.9.13(b) for illustrations of an optical warning system on a large fire apparatus.

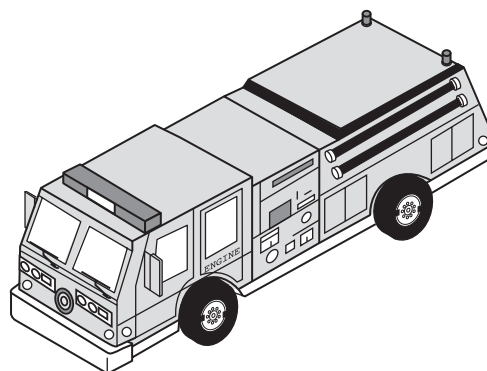


Figure A.7.9.13(a) Front and Left Side of an Apparatus with an Optical Warning System.

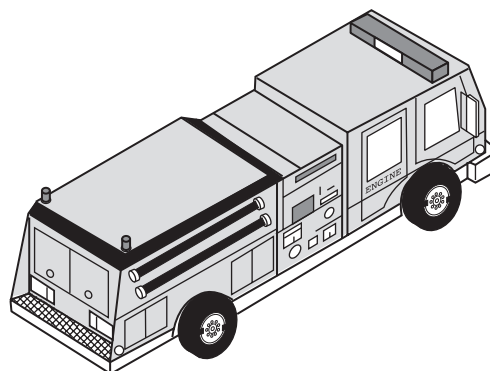


Figure A.7.9.13(b) Rear and Right Side of an Apparatus with an Optical Warning System.

A.7.9.13.5 The zone totals reflect the combined performance of the individual optical warning devices oriented as intended on the ambulance when viewed along the perimeter of a circle of 100 ft (30.5 m) radius from the geometric center of the ambulance.

The zone total is the sum of the optical power of all optical sources projecting signals of permissible color into the zone as measured at 5 degree increments along the horizontal plane passing through the optical center H throughout the 90 degrees included in the zone (19 data points). The calculation of zone totals assumes that all optical sources are mounted at the geometric center of the ambulance. With the optical center of each optical source oriented as installed, the optical power contributed by every optical source at a given point is taken from the test report, and they are added together to determine the total optical power at that point. The zone total is the sum of the optical power at the 19 measurement points in the zone. The upper- and lower-level optical sources are calculated independently.

The engineering basis of Section 7.9 permits both the design and the certification of an optical warning system by mathematical combination of the individual test reports for any number of optical warning devices of different color, flash rate, optical source, and manufacturer.

Using the test reports provided by the device manufacturer, the contribution of optical energy from each optical source is determined for every data point. The total candela-seconds per minute of optical energy is determined at each point, and then the zone totals are calculated and compared to Table 7.9.13.5.

A.7.9.14 The minimum optical warning system should require no more than an average of 35 A for the operation of the devices in the blocking mode.

A.7.9.16 In a few cases, a manufacturer might wish to type certify by actual measurement of the optical warning system on an ambulance.

Certification of the actual measurement of the performance of the optical warning system is made with each optical source either mounted on the ambulance or on a frame duplicating the mounting of the device on the ambulance. The performance of the system can be directly measured along the perimeter of a circle with a 100 ft (30.5 m) radius from the geometric center of the ambulance. Each optical warning device used should be certified by its manufacturer as conforming to all the requirements of this standard pertaining to mechanical and environmental testing. Photometric testing of the system should be performed by qualified personnel in a laboratory for such optical measurements.

The test voltages and other details should be as called for in this standard for the photometric testing of individual optical warning devices. The elevation of the photometer, however, could be set at the elevation that maximizes the performance of the upper-level devices and at a second, different elevation that maximizes the performance of the lower-level devices.

With the optical center of each device oriented as installed, the sum of the actual value of the optical power contributed by every optical source is then determined at each measurement point. The zone total is the sum of the optical power at the 19 measurement points in the zone.

Measurements are made to determine all the optical requirements of this standard, including the optical power at each of the required measurement points, the zone totals at the horizontal plane passing through the optical center, and the zone totals at 5 degrees above and 5 degrees below the horizontal plane passing through the optical center. Any upper-level warning devices mounted above the maximum height specified by the manufacturer(s) should be tested to demonstrate that at 4 ft (1.2 m) above level ground and 100 ft (30.5 m) from the mounted device, the optical energy exceeds 50 percent of the minimum required at the horizontal plane passing through the optical center.

A.7.10.1.2 If the purchaser wishes to have the siren controls within convenient reach of persons riding in both the right and left front seat positions, that should be specified. In some ambulance's, multiple control switches might be necessary to achieve convenient reach from the two positions. If other signal devices, such as an additional siren, bell, air horn(s), or buzzer are desired, the type of device and its control location also should be specified.

A.7.11.6.1 The user may want to consider a map light or additional task lighting in the cab

A.7.1.6.3 The purchaser might want to add "checkout lights" which may be controlled by a timer or switch wired directly to the batteries. These "checkout" lights are usually fluorescent lights wired to the line voltage shoreline and may be wired so that the ambulance ignition or battery switch need not be turned on.

A.7.11.6.2.4.2 The purchaser should consider light color temperatures when specifying interior lighting. Different temperature lights could effect the operation and diagnoses of patients. A temperature closer to daylight would give the best results, but might not be feasible with the available lights. A good range seems to be between 2500 and 4500 Kelvin, see Figure A.7.11.6.2.4.2 below.

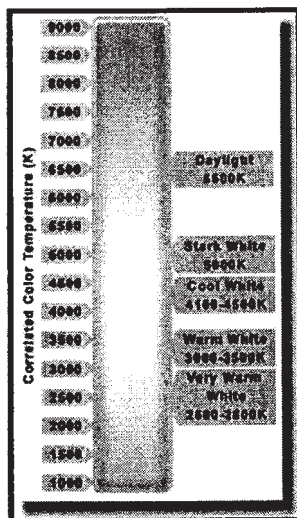


Figure A.7.11.6.2.4.2 Light Color Temperature Scale

A.7.12.1 Electronic displays that are visible in all ambient light, that projects narrative information may be used in lieu of discrete, colored, indicator/warning lights provided the projected message is at least as visible as the basic required warning light.

A.7.13 The purchaser might wish to add camera(s) at the sides or rear of a vehicle with cab monitoring screens or automatic vehicle-stopping devices that sense an obstruction at the rear of the vehicle. In addition, angled backup lights mounted in the wheel well areas will provide additional scene lighting for personnel who might be at the side of the vehicle or lighting of folding tanks or other obstacles on the side of the ambulance. Any such devices will improve safety while vehicles are backing.

A.7.15.2 The purchaser should specify the appropriate features to accommodate their communication equipment, including but not limited to metal ground planes, grounding, coaxial cable and antenna placement

A.8.2.2.1 The purchaser should specify the location on the apparatus for the power Inlet. Consideration should be given to placement of the power inlet so that it disconnects if the apparatus is moved forward or an auto-eject device may be utilized. The shoreline and circuit breaker should be sized for the anticipated electrical load.

A.8.2.5.3 Portable line voltage electrical equipment added by the ambulance service should also be listed and utilized only in accordance with the manufacturer's instructions.

A.8.2.6.4 Although a splash shield will lessen the amount of road spray that reaches the generator, it will not protect the generator if the ambulance is driven through deep water. Care should also be taken if the ambulance is driven off-road, because a splash shield is not a skid pan and will not protect the generator from physical abuse.

A.8.3.1 It is important that all metal parts of the ambulance and the electrical system be bonded to the vehicle chassis. Any electrical boxes, conduits, or fixtures that are not permanently mounted to the metal body should be bonded to the protective ground wire. It is especially important that the metal light fixtures or housings of pole lights, light towers, and portable lights be grounded through the protective ground wire. NFPA 70, National Electrical Code, requires the following:

The normally non-current-carrying metal parts of equipment and the equipment grounding conductor terminals of the receptacles are connected to the generator frame. [70:250.34(A)(2), 250.34(B)(3)]

Use of a ground rod on ambulance is not recommended. If one is used, the requirements of NFPA 70, Article 250, should be followed. These requirements are difficult to achieve in a portable application.

Supplying a building electrical system from an ambulance is not recommended, because it commits the ambulance to the task and requires a significantly different grounding scheme, at least while being used for this application, in accordance with NFPA 70, 250.20, "Alternating-Current Systems to Be Grounded"; 250.30, "Grounding Separately Derived Alternating-Current Systems"; and other applicable sections of NFPA 70. In this situation, the grounding allowed by 250.34 is no longer applicable.

A.8.3.1.4 This refers to the protective ground (green wire), not the "neutral" wire. The ground is the chassis/body of the vehicle, not a connection to an earth ground.

A.8.4 Ground fault circuit interrupters (GFCIs) are intended to provide protection from electrical shock, but experience in the emergency services has pointed out several considerations about using them:

(1) GFCIs integrated into outlets or circuit breakers or as stand-alone devices may be used.

(2) Where possible, GFCIs should be located at the end of cords (i.e., in the distribution box at the end of a cord reel) to reduce tripping associated with long cord lengths and to put the reset function closer to the user.

(3) GFCIs might not be compatible with 120/240 volt 4-wire cord reels frequently used in emergency services unless the GFCI is located at the end of the cord.

(4) Many plugs and receptacles used in the emergency services are twist lock instead of standard nonlocking household plugs and receptacles, and in these cases, the GFCIs integrated with an outlet cannot be used, requiring circuit breaker GFCIs or standalone GFCIs.

A.8.5.4.1 The 120°F (49°C) requirement is for air inlet temperature to the power source. The completed ambulance is required to operate at an ambient temperature of 110°F (43°C). This difference of only 10°F (6°C) is difficult to achieve due to heat produced by the ambulance. The installer should take this temperature into consideration in selecting a location for the power source. If the ambulance is intended to operate at high temperatures, the purchaser may want to specify a larger nameplate rating on the generator and derate it to allow for a higher temperature capability. Consult with the power source manufacturer for more information on extended temperature range operation. In the testing required in Chapter 9.9 the ambient and air inlet temperatures are recorded, giving a measure of the temperature difference in actual operation. The following factors could be relevant to power source testing, depending on the type of power source:

(1) Sampling. The selection of test unit(s) should be representative of the construction and settings for units that will be supplied to the ambulance manufacturer. The standard does not require that all production units be tested; however, the power source manufacturer should test as needed to maintain confidence in its declaration of the continuous duty rating for all production.

(2) Clearances, cooling, and ventilation. Testing should be conducted at the worst-case clearance (usually minimum clearance or minimum compartment size) and worst-case ventilation conditions (minimum inlet/outlet dimensions and maximum inlet/outlet restrictions) specified in the literature. If not in the literature, the power source manufacturer's declaration should indicate the clearances, compartment size, and ventilation that are applicable to the declared continuous duty rating.

(3) Test duration. "Continuous" ratings are usually established by tests run until thermal stabilization is achieved. A minimum test of 2 hours, matching the in ambulance test duration indicated in 9.9, is recommended.

(4) Air inlet temperature. Power sources should be tested in a chamber or room where the air temperature supplied to all inlet ducts (radiators, engine induction, windings, heat sinks, etc.), and the air surrounding the test unit, is maintained at 120°F (49°C).

(5) Barometric pressure. Pressure (air density) varies with changes in altitude and weather. Its effect is generally greatest on engines, where it affects combustion and cooling efficiency. There is a lesser effect on wound machines due to cooling only. To show compliance with the 2,000 ft (600 m) requirement, a test in a chamber simulating 2,000 ft (600 m) would be ideal, but it is not expected. Alternatively, connecting more or less than the rated load can be used to simulate/demonstrate that the engine is capable of the power

required for rated output at 2,000 ft (600 m). (Several standards organizations, such as SAE and ISO, have standards that describe how to compute load/output correction factors for barometric pressure.)

(6) Fuel temperature. Fuel supply for the test should be stabilized at 120°F (49°C) before testing. Increases in fuel tank temperature that can occur as a result of fuel returned to the tank should be controlled so as to provide a result that is representative of expected fuel temperature conditions for the ambulance. (7) Intake and exhaust restrictions, accessories, hydraulic pumps, and reservoirs. Components and accessories that might reduce engine power available for electrical output or that consume electrical output from the power source should be installed and be of the type used for the model that will be ordered for ambulance use, or their effect should be separately determined and reflected in the certified output.

(8) Break-in. Acceptance of a reduced output rating until completion of an in-use break-in period is subject to the prior agreement of the ambulance manufacturer, who might request test evidence. When applicable, the reduced output amount and duration of the break-in period should be indicated in the power supply literature.

(9) Voltage and frequency. Tests should be run while maintaining the ± 10 percent voltage and ± 3 Hz frequency required by 8.4.2.1. Furthermore, settings for voltage and frequency should be representative of production units.

(10) Engine speed and hydraulic flow/pressure. The engine speed and/or hydraulic flow and pressure ranges indicated in the power source's literature should be used to verify that the declared ratings are achievable.

(11) Hydraulic fluid temperature. The entire hydraulic power supply system, including hydraulic fluid piping and reservoir, should be located within a test chamber where temperature is controlled to maintain 120°F (49°C). Hydraulic fluid reservoirs should be stabilized at the ambient air test temperature [120°F (49°C)] prior to the testing.

(12) Component and material temperatures. Although not specified in the standard, when a power supply designed for light-duty use in open air is proposed for fixed ambulance use, the power source manufacturer should evaluate the components to determine whether they will operate within their rated or design temperature limits.

A.8.5.7.3 The instrumentation should be protected from vibration, which can lead to false readings. Particular attention should be paid to reed-type frequency indicators. Digital electronic instrumentation should be selected that incorporates sample times and intervals that accurately report system performance under varying conditions.

A.8.5.9 The indicator lights and interlocks specified in this section are minimums. Some manufacturers or users might choose to add additional indicator lights or interlocks.

A.8.5.9.3 Generators are operated from the side, top, front, or rear of the ambulance, and stationary operation requires that no power is applied to the wheels while operating. Therefore, it is essential that any generator system controls that shift the ambulance out of the road mode of operation to place the generator system in operation be equipped with a means to prevent dislocation of the control from its set position in the power generation mode.

A.8.6.1 A PTO generator system typically consists of a propulsion engine, a controller to regulate the propulsion engine's speed (if required), an appropriate PTO arrangement, drivetrain components, a generator, and other miscellaneous parts.

Where possible, the generator PTO system should be prevented from engaging if engine speed is above idle.

PTO gear ratios and engine governor components should be selected and matched to provide an engine speed high enough to maintain rated performance of the alternator and air conditioning system (if provided). Engine speed should be high enough to maintain rated performance of the low voltage electrical system. Continuous excessive engine speed will result in premature generator drivetrain component failure and unnecessary fuel consumption.

The purchaser should consider specifying a means to automatically disconnect the generator or reduce engine speed to idle in the event of engine overspeed.

A.8.6.2 A hydraulic generator system generally consists of a variable displacement hydraulic pump deriving its power from the propulsion engine, a controller to regulate the hydraulic fluid flow rate, a hydraulic motor driving the generator, hydraulic fluid cooler, reservoir, and other miscellaneous parts.

All hydraulic generator systems have a window of operation (speed range). When selecting the power output of the hydraulic generator system, its speed range should be compared to the operating window of the ambulance's engine and the PTO ratios available. By selecting the hydraulic generator system and PTO ratio to match the application, electrical power can be provided over a wide operating range.

The selected PTO should have a gear ratio that will allow the widest possible range of engine speeds without overspeeding the hydraulic pump.

Where possible, engagement of the generator PTO system should be prevented if engine speed is above idle.

A.8.6.2.1 The means can be a mechanical, hydraulic, or electronic device.

A.8.6.3 Engine-driven generator systems use an internal combustion engine close-coupled to a generator. Some installations are capable of producing power while the ambulance is in motion. Generators used in these applications should be specifically designed for mobile applications. Remote generator controls in the driving compartment should be considered and specified if desired.

A.8.6.3.2 The purchaser should consider the following additional remote instruments where a prime mover, other than the propulsion engine, is used to

drive a generator:

- (1) Oil pressure gauge and low pressure indicator light and audible alarm
- (2) Engine temperature gauge and high temperature indicator light and audible alarm

The purchaser might want to specify a high temperature indicator to help troubleshoot automatic shutdowns.

A.8.6.3.9.1 Emissions from exhaust discharge pipes should be directed away from any tools or equipment, because such emissions contain an oily substance that could make the tools difficult to handle and possibly dangerous to use.

A.8.6.4 Brief descriptions of several different types of systems follow. All of these systems can overload the low voltage electrical system and cause the load management system to terminate the generation of line voltage. As a result, the amount of line voltage power that can be supplied at any given time is totally dependent on the other, higher priority demands placed on the low voltage system.

Dynamic Power Inverter. A dynamic power inverter converts alternator output power to 120 volts ac (or 120/240 volts ac). Power is electronically inverted to ac. Usually the largest system of this type is 7,500 watts. Voltage and frequency control are typically very good. These types of systems may be suited to providing electric power while the ambulance is in motion.

Static Power Inverter. A static power inverter converts 12 volt dc power to 120 volt ac (or 120/240 volts ac) power. Power is electronically inverted to ac. Usually the largest system of this type is 2000 watts. Voltage and frequency control are typically very good. These types of systems are suited to providing electric power while the ambulance is in motion.

Motor-Driven Generators. A motor-driven generator system converts 12 volt dc power to 120 volt ac (or 120/240 volts ac) power. The 12 volt dc motor drives an ac generator. Typical power ratings are less than 1600 watts. Voltage and frequency control are less precise than some of the other systems available. These types of systems are suited to providing electric power while the ambulance is in motion.

Transformers. Transformer systems convert energy from the alternator, which is then rectified to 120 volt dc power. Typical installations provide 1000 watts. Output voltage is directly dependent on input voltage. Input voltage is dependent on engine and alternator speed.

In most cases, other power sources that do not draw power from the low voltage system are preferable.

A.8.6.4.2 In order to provide adequate power, it may be necessary to provide a means to advance engine speed as described in 8.6.5.

A.8.6.5.3 Operations in conjunction with any other component driven off the ambulance's engine could require special or alternate interlock systems.

A.8.6.6 Devices that produce modified sine waves may be less expensive than devices that produce pure sine waves. Power from electric utilities and most traditional mechanical generators are close to a pure sine wave. A modified sine wave output is satisfactory for many types of equipment but may cause problems with some types of equipment, including the following:

- (1) Some computer and electronic equipment
- (2) Some fluorescent lights with electronic ballasts
- (3) Some tools with variable speed motor controls
- (4) Some battery chargers
- (5) Some medical equipment
- (6) Some other equipment

The purchaser should identify what equipment is intended to be powered from the power source and verify with the equipment manufacturers that the equipment is compatible with modified sine wave power sources before specifying such a power source.

A.8.7 Portable generator systems are generally designed with an integral fuel tank and controls in one modular package. This allows the system to be picked up and transported to a remote location from the ambulance. Generators designed for portable use should be accessible for removal. These generators are generally not suited for "enclosed" compartment operation or should be mounted on a slide-out tray for adequate ventilation. Such installations require interlocks or a high temperature alarm to ensure that the generator is operated in slide-out condition.

The generator performance specifications should be evaluated carefully to ensure that the required level of performance can be met. Article 445, "Generators," of NFPA 70, National Electrical Code, requires that overcurrent protection be provided on portable generators.

A.8.9.3 Where the wire could be exposed to temperatures above 194°F (90°C), higher temperature rated wire should be used.

A.8.10.3.4 Similar fixed loads should be paired on opposite legs of the power source where practical. If pairs of receptacles are provided on the same side of the ambulance or on the front or rear of the ambulance, they should be connected to opposite legs of the power source. If two 120 volt cord reels are provided, they should be connected to opposite legs of the power source. 120/240 volt cord reels should always be connected to both legs of the power source.

A.8.11 Where the wire could be exposed to temperatures above 194°F (90°C), higher temperature rated wire should be used.

A.8.11.6.1 Locations in which flexible cord might be damaged include but are not limited to compartment walls and floors, exposed outside areas, and exposed interior areas near equipment or walkways.

A.8.12.3 Common connectors and terminations that comply with these requirements include but are not limited to the following:

- (1) Welded or brazed connectors

- (2) Crimped connectors
- (3) Soldered connections that are mechanically secured before soldering
- (4) Screw-type positive pressure connectors
- (5) Ring terminals
- (6) Hooks
- (7) Uprturned spade
- (8) Crimped-on pins

A.8.12.4 The following switch terminology can be helpful in understanding the different types of switches.

One Pole (1P) or Single Pole (SP). A switch device that opens, closes, or changes connections in a single conductor of an electrical circuit.

Two Pole (2P) or Double Pole (DP). A switch device that opens, closes, or changes connections in both conductors of the same circuit.

Two Circuit (2 CIR). A switch device that opens, closes, or changes connections in a single conductor of two independent circuits.

Single Throw (ST). A switch that opens, closes, or completes a circuit at only one of the extreme positions of its actuator.

Double Throw (DT). A switch that opens, closes, or completes a circuit at both extreme positions of its actuator.

Normally Open (NO). A switch in which one or more circuits are open when the switch actuator is at its normal or rest position.

Normally Closed (NC). A switch in which one or more circuits are closed when the switch actuator is at its normal or rest position.

Switches are rated for the type of load they are designed to control. Switch ratings include the following:

- (1) Resistive
- (2) Inductive
- (3) Horsepower (i.e., motor loads)
- (4) Tungsten (i.e., incandescent lamp loads)
- (5) Alternating current
- (6) Direct current

The ampere rating of a given switch is dependent on the type of load. In particular, switches used to control dc circuits should have the appropriate dc rating.

A.8.12.4.2 In lieu of a switch-rated circuit breaker, a standard circuit breaker could be used with a separate switching device.

A.8.12.5 The purchaser should specify the number and location of receptacles that are needed to operate the devices to be powered by the system. The purchaser should specify the NEMA number (if applicable), manufacturer, and style of the receptacles desired. For other than NEMA-type receptacles, the purchaser should additionally specify the wiring configuration.

A.8.12.5.6.3 If the off-road ambulance is to ford water, the receptacle distance should be increased above 30 in. (750 mm). The purchaser should review the proposed height for any receptacles on the ambulance and specify a higher mounting height if desired.

A.8.12.5.11 While NEMA configurations as defined in NEMA WD 6, Wiring Devices — Dimensional Requirements, are recommended to promote compatibility of equipment during mutual aid operations, other configurations are in use and have been adopted by various ambulance services.

Acceptable NEMA-type plug and receptacle configurations for various ac voltage and current ratings are shown in Figure 8.12.5.7.

NEMA WD-6, Wiring Devices—Dimensional Requirements, by permission of National Electrical Manufacturers Association. Copyright 2002 by National Electrical Manufacturers Association.)

The letter “R” following the configuration number indicates a receptacle, and the letter “P” denotes a plug. For example, the nonlocking, 15-ampere, grounding receptacle found in most homes is configuration 5-15R and accepts a three-prong plug in the configuration of 5-15P.

Locking-type plugs and receptacles are designed to prevent accidental disconnection when subjected to moderate pull-apart loads. Neither locking nor nonlocking connectors are designed to withstand the loads that can be created when pulling long cords up buildings and stairs.

A.8.13.5 A suggested minimum capacity of a reel is at least 100 ft (30 m) of cord rated to carry 20 amps at 120 volts ac. When sizing the reel, extra capacity should be provided when multiple receptacles are attached to the cord stored on the reel.

A cord reel to supply a single 120 volt circuit requires three collector rings and three conductors in the cord, for line, neutral, and ground. If the power source has 120/240 volt outputs, as most power sources do, a second equivalent circuit with the same rating requires only one additional conductor, because the neutral and ground can be common to both circuits. Thus, with approximately 25 percent more reel space and cord cost, the cord reel can supply twice the number of lights or other loads.

A.8.13.6 Table A.8.13.6 lists the suggested cord size for cord reels based on the desired circuit ampacity and the cord length. All cord reels with one or more outlets should be rated at 15 amps or greater.

Table A.22.12.5 Wire Size (AWG) for Various Electrical Cord Lengths

Circuit Ampacity	Cord Length					
	50 ft (15 m)	100 ft (30 m)	150 ft (45 m)	200 ft (60 m)	250 ft (75 m)	300 ft (90 m)
15	12	12	12	12	10	10
20	12	12	12	10	10	8
25	12	12	10	10	8	8
30	10	10	10	8	8	6
35	8	8	8	8	6	6
40	8	8	8	8	6	6
50	6	6	6	6	6	4

For heavy loads such as large smoke fans and hydraulic rescue tool power plants, the purchaser should consider 240 volt units instead of 120 volt units. This will allow the use of smaller cords and reels. For example, a 200 ft (60 m) reel to supply a hydraulic rescue tool (HRT) power plant that draws 15 amps at 240 volts would require 12 gauge wire. The same power unit in a version to run on 120 volts would draw 30 amps and would require 8 gauge wire.

Cord reels for three-phase power or other specialized applications should be designed with the assistance of a qualified electrical engineer.

A.8.13.7 The purchaser may want to specify that the cord on the reel be provided with a disconnect means within 18 in. (457 mm) from the reel for cord removal if the cord is 8 AWG or smaller. A disconnect makes it easier to replace damaged cord or to use the cord to extend another cord, although it reduces the capacity of the reel and makes it harder to coil the cord on the reel.

A.8.13.8 The purchaser might want to color code the cord or cord reel to identify the voltage.

A.8.13.9.2 It might be advantageous to specify a remote power distribution box that has a provision for hanging the unit from a door or ladder.

A.8.13.9.5 The lamps used in this application should be rough-service type. Scene lighting around the remote power distribution box can be provided with an integral, mechanically protected light fixture.

A.8.13.9.5.1 For increased visibility, reflective tape can be applied to the distribution box.

A.9.1.1 The purchaser might wish to have the entire low voltage electrical system and warning device system certified by an independent third-party certification organization.

A.9.2 The purchaser should consider the range of temperatures in which the power source is to be operated. If extreme conditions are anticipated, the purchaser should specify the test conditions that are desired.

A.9.2.3 The purchaser should check the polarity of the wiring in a building prior to interconnecting the ambulance mounted electrical system to the electrical system in a building.

A.9.2.7 It is important that the power source meet the purchaser’s requirements for output. Power sources may be advertised with power ratings for operating conditions that are more favorable than the conditions that might be encountered in ambulance use. Some power sources are advertised at peak output or intermittent duty ratings and not the continuous duty output required for ambulances. The power source manufacturer and ambulance manufacturer might need to establish a reduced rating that is appropriate for ambulances. The standard calls for two steps. The power source manufacturer provides a declared rating for 120°F (49°C) air inlet temperature and 2,000 ft (600 m) altitude for the minimum clearance and ventilation indicated on the declaration (see 8.5.10). Then the ambulance manufacturer verifies that the rating printed on the power source specification label can be attained during the line voltage load test (see 9.2.7).

Generator Set Rating. Auxiliary engine-powered generator sets are the type of power source most likely to require a reduction from advertised ratings, and generator set literature usually provides rating correction factors for altitude and temperature. These factors could be based on standards for engines, such as ISO 3046-1, Reciprocating internal combustion engines — Performance — Part 1: Declarations of power, fuel and lubricating oil consumptions, and test methods — Additional requirements for engines for general use, and SAE J1349, Engine Power Test Code — Spark Ignition and Compression Ignition — Net Power Rating; standards for generators, such as NEMA MG 1, Motors and Generators; or manufacturer testing. As an example of how altitude and temperature affect output capability, consider a typical 10 kW generator set with 0.8 generator efficiency and naturally aspirated diesel engine that is rated at 500 ft (150 m) and 85°F (30°C) for continuous operation without overload or reserve capacity. ISO 3046-1 indicates a factor of -2.1 percent output per 10°F (5.5°C) ambient increase, and a -2.6 percent per 1000 ft (300 m) altitude increase. Generator output is also affected by temperature [about -0.5 percent per 10°F (5.5°C)] and altitude (small and ignored in this example). There is also an effect from combining engine and generator into a generator set due

to each heating the other. This may require an additional factor of -1 to -4+ percent per 10°F (5.5°C), depending on the effectiveness of the cooling system and temperature (the factor increases with increasing temperature). Altogether, these factors suggest the 10 kW generator set in this example is capable of about 8.8 kW at the maximum temperature of 110°F (43°C) and altitude of 2,000 ft (600 m) specified in the standard. Another way to view this result is that an 11.4 kW generator set would be required to provide 10 kW at 110°F (43°C) and 2,000 ft (600 m).

Where there is concern that installation or operational circumstances could cause power source intake air to heat above 120°F (49°C) or where the flow of cooling, induction, or exhaust air is more restricted than what is allowed by the manufacturer's literature, advance consultation with the power source manufacturer(s) could help in the selection of a power source that will pass the ambulance test with an output that meets the purchaser's needs. Also, weather, like altitude, can affect air density and thus engine and generator set output. The combined effect of altitude and weather is reported as barometric pressure on local weather reports. Low barometric pressure will reduce engine and generator set output capability. High barometric pressure (usually clear cold days) will increase engine and generator set output capacity.

Other Power Source Types. Some output correction factors described in the generator set example apply to other types of power sources, depending on circumstances. For example, PTO and hydraulically driven generators also rely on engine power, but the engine will usually have substantial reserve power, so increased altitude or temperature will not affect their power supply rating. Regardless, best practice for longest life and lowest maintenance is to provide unrestricted airflow at the lowest temperature.

Annex B Informational References

B.1 Referenced Publications.

B.1.1 NFPA Publications.

B.1.2 Other Publications.

B.2 Informational References.

B.3 References for Extracts in Informational Sections.

Substantiation: Reverting to the original draft will ensure that both the performance criteria and the test criteria will reside in the same document. Future revisions will allow changes to performance and testing aspects to be coordinated. Purchasers of the document will have both the performance criteria and the test methods in the same document. This mirrors the format of NFPA 1901 Standard for Automotive Fire Apparatus and 1906 Standard for Wildland Fire Apparatus.

Committee Meeting Action: Accept in Principle in Part

Revise text to read as follows:

2.3 AMD Publications:

Ambulance Manufacturers Division (AMD), National Truck Equipment Association, 37400 Hills Tech Drive, MI 48331-3414

AMD-001 Ambulance Body Structure Static Load Test, 2007

AMD-002 Body Door Retention Components Test, 2007

AMD-003 Oxygen Tank Retention System Static Test, 2007

AMD-004 Litter Retention System Static Test, 2007

AMD-006 Patient Compartment Sound Level Test, 2007

AMD-008 Patient Compartment Grab Rail Static Load Test, 2007

AMD-010 Water Spray Test, 2007

AMD-011 Equipment Temperature Test, 2007

AMD-012 Interior Climate Control Test, 2007

AMD-014 Engine Cooling System Test, 2007

AMD-015 Ambulance Main Oxygen System Test, 2007

AMD-016 Patient Compartment Lighting Level Test, 2007

AMD-018 Rear Step and Bumper Static Load Test, 2007

AMD-021 Aspirator System Test, Primary Patient, 2007

AMD-022 Cold Engine Start Test, 2007

AMD-024 Perimeter Illumination Test, 2007

AMD-025 Measuring Guidelines: Occupant Head Clearance Zones, 2007

3.3.30 High-Idle Speed Control. A control or switch system that provides a means to increase the engine operating speed from an idle condition to a higher preset operating speed. Definition from 1901

4.6 Third-Party Certification of Test Results. Where this standard requires the witnessing or performing of tests by an independent third-party organization, that organization shall meet the requirements of this section.

4.6.1 All testing unique to this standard other than those outlined in Chapter 9 shall be witnessed or performed by an organization that is accredited for inspection of ambulances in accordance with ISO/IEC 17020, *General Criteria For The Operation Of Various Types Of Bodies Performing Inspection or accredited for testing ambulances to this standard in accordance with ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories*.

4.6.9 Accredited Laboratory:

4.6.9.1 All testing specified by AMD Standards shall be witnessed or performed by an organization that is accredited for inspection of ambulances in accordance with an ISO/IEC 17025 accredited laboratory that is recognized by a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA).

4.6.9.2 The scope of accreditation shall include all tests outlined by Chapter 9 of this document.

4.6.11* The testing facility for each certification shall supply the following supportive verification data and information on letterhead stationary in electronic format:

- 1) For whom tested
- 2) Report date
- 3) Name of sample product or device
- 4) Contractor's address
- 5) Serial and model number(s)
- 6) Specification referral and amendment number(s)
- 7) Test facilities used and location
- 8) Test equipment used
- 9) Test procedure
- 10) Test results
- 11) Verifying test data
- 12) Photographs
- 13) Drawings
- 14) Test conclusions
- 15) Witness(es)
- 16) Authorized signature

A.4.6.11 Drawings should be included in the test report where they will assist in documenting the configuration of the components or systems being tested. Drawing details may include views of the entire vehicle where appropriate as well as material sizes, thicknesses, welds, fasteners, adhesive coverage, etc... of the critical regions that would be established as "minimums" for the respective location and function of the tested component or system.

4.7 Certification of Test Results by Manufacturer Certification of Test Results. Where this standard requires the results of tests or the performance of a component to be certified by the manufacturer, the manufacturer shall meet the requirements of this section.

5.3.1.2 Compliance shall be validated by testing a substantially similar ambulance in accordance with AMD-022, *Cold Engine Start Test Section 9.22*.

5.5.2 Compliance of the engine's cooling system shall be validated by testing a substantially similar ambulance in accordance with AMD-014, *Engine Cooling System Test Section 9.14*.

5.11.2.8.2 Compliance of the rear step surface shall be validated by testing a substantially similar ambulance or bumper and step structure in accordance with AMD-018, *Rear Step and Bumper Static Load Test Section 9.18*.

6.3.1 Any Type I ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to the roof of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with AMD-001, *Ambulance Body Structure Static Load Test Section 9.1*.

6.3.2 Any Type II ambulance body shall withstand a force equal to 1.5 times the curb weight of the vehicle applied to the roof of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with AMD-001, *Ambulance Body Structure Static Load Test Section 9.1*.

6.3.3 Any Type III ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to the roof of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with AMD-001, *Ambulance Body Structure Static Load Test Section 9.1*.

6.4.1 Any Type I ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to either the driver or passenger side of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with AMD-001, *Ambulance Body Structure Static Load Test Section 9.1*.

6.4.2 Any Type III ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to either the driver or passenger side of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with AMD-001, *Ambulance Body Structure Static Load Test Section 9.1*.

6.4.3 The downward vertical movement at any point on the side application plate shall not exceed 5.12 in. (130 mm).

6.4.4 The rear doors of the vehicle shall be capable of opening and closing during the full application of the force and after release of the force.

6.4.5 No structural damage to any load-bearing or supporting members (i.e., torn or broken material, broken welds, popped or sheared body rivets, bolts and/or fasteners) shall be evident during the application of the force and after the release of the force.

6.5.1.2 Compliance of the body sealing out water shall be validated by testing a substantially similar each finished ambulance in accordance with AMD-010, *Water Spray Test Section 9.10*.

6.8.7.2 **6.8.6.2** Compliance of the handrail shall be validated by testing a substantially similar ambulance or body structure in accordance with AMD-008, *Patient Compartment Grab Rail Static Load Test Section 9.8*.

6.9.11 Doors shall, in addition to meeting applicable FMVSS standards, withstand the loads on the latches and hinges listed in Table 6.9.11 when tested in accordance with AMD-002, *Body Door Retention Components Test Section 9.2*.

6.17.4 **4.12.3.1** All interior systems, components and permanently attached equipment shall function satisfactorily over a temperature range of 32°F (0°C) to 95°F (35°C).

6.17.4.1 **4.12.3.1.1** Compliance of the equipment function shall be validated by testing a substantially similar ambulance in accordance with AMD-011, *Equipment Temperature Test Section 9.11*.

6.17.4.2 **4.12.3.1.2** The ambulance and all systems, components and equipment shall be capable of being stored at an ambient temperature between 32°F (0°C) to 95°F (35°C) without damage or deterioration.

6.24.4.2 The measurement shall be in accordance with AMD-025, *Measurement Guidelines: Occupant Head Clearance Zones Section 9.25*.

6.25.2 Compliance of the cot retention system shall be validated by testing a sample retention device using a substantially similar ambulance or body structure in accordance with AMD-004, Litter Retention System Static Test Section 9.4.

6.27* HVAC.

6.27.1 HVAC units shall be independently controlled between the driving and patient compartments.

6.27.2 Connecting hoses for heating and the air conditioning system shall be supported by rubber-insulated metal clamping devices at least every 18 in. (457 mm).

6.27.3 6.27.1 Heating.

6.27.3.1 6.27.1.1 A heating system shall be provided capable of raising the interior temperature from 32° F to 68°F (0°C to 20°C) within 30 minutes.

6.27.3.2 6.27.1.2 Compliance of the heating system shall be validated by testing a substantially similar ambulance in accordance with AMD-012, Interior Climate Control Test Section 9.12.

6.27.4 6.27.2 Air Conditioning.

6.27.4.1 6.27.2.1 An air conditioning system shall be provided capable of lowering the interior temperature from 95°F to 78°F (35°C to 25°C) at a minimum of 40 percent relative humidity within 30 minutes.

6.27.4.2 6.27.2.2 Compliance of the air conditioning system shall be validated by testing a substantially similar ambulance in accordance with AMD-012, Interior Climate Control Test Section 9.12.

A.6.27 Some chassis used on ambulances may not be capable of providing independent control of the HVAC units between the cab and the patient compartment. Purchasers may wish to consider chassis selection if this is a feature that is important in the climate where the ambulance will be used.

6.28.2 Compliance of the patient compartment interior sound shall be validated by testing a substantially similar ambulance in accordance with AMD-006, Patient Compartment Sound Level Test Section 9.3.

6.32.12.6 6.32.10.6 Compliance of the oxygen tank retention shall be validated by testing a sample retention device using a substantially similar ambulance or body structure in accordance with AMD-003, Oxygen Tank Retention System Static Test Section 9.3.

6.32.13.1.3 6.32.11.1.3 Compliance of the oxygen system integrity shall be validated by testing a sample system in a substantially similar ambulance in accordance with AMD-015, Ambulance Main Oxygen System Test Section 9.15.

6.33.11.3 Compliance of the aspirator system shall be validated by testing a sample aspirator system installed in a substantially similar ambulance in accordance with AMD-021, Primary Patient Aspirator System Test Section 9.21.

7.11.3.2 Compliance of the load lighting illumination shall be validated by testing a substantially similar ambulance in accordance with AMD-024, Perimeter Illumination Test Section 9.24.

7.11.6.3.4.1 In the high setting, the patient compartment floor shall have a minimum of not be less than 15 foot candles of illumination intensity, measured along the centerline of the clear floor.

(A) Compliance of the patient compartment floor illumination shall be validated by testing a substantially similar ambulance in accordance with AMD-016, Patient Compartment Lighting Test.

7.11.6.3.4.2 7.11.6.2.4.2* In the high setting, the primary cot, in the high setting, shall be provided with a minimum of 35 foot candles of illumination measured on at least 90 percent of the cot's surface area.

(A) Compliance of the patient cot illumination shall be validated by testing a substantially similar ambulance in accordance with AMD-016, Patient Compartment Lighting Test.

7.11.6.3.4.3 In the low setting, the patient compartment floor shall have a minimum of 3.5 foot candles of illumination measured along at least 85% of the centerline length.

7.11.6.3.4.4 In the low setting the side entry step shall be illuminated to a minimum of 2.0 foot candles measured in the center of the step area.

7.11.6.3.4.5 Compliance of the requirements in 7.11.6.3.4.1 through 7.11.6.3.4.4 shall be validated by testing a substantially similar ambulance in accordance with Section 9.16.

7.11.6.3.5 7.11.6.2.4.3 The patient compartment lighting (in the low setting) shall be automatically activated in the low setting when the side entry or rear entry patient compartment doors are opened.

7.11.6.2.5 Compliance of lights activated by the side entry door and rear entry door shall be validated by testing a substantially similar ambulance in accordance with AMD-016, Patient Compartment Lighting Test.

9.1 Ambulance Body Structure Test.

9.1.1 Roof Crush Test.

9.1.1.1 Support the ambulance on a rigid fixture independent of the vehicle suspension.

9.1.1.2 Remove any components that extend upward from the vehicle roof.

9.1.1.3 Measure and record the distance from the mounting surface to each of the four corners of the roof.

9.1.1.4 Employ a rectangular force application plate fitted as near as possible to the contour of the ambulance roof. The application plate shall be a minimum of 5 in. (127 mm) longer and 5 in. (127 mm) wider than the vehicle roof of the patient's compartment. For the purposes of these measurements, the ambulance roof is that structure, seen in the top projected view that coincides with the patient compartment of the ambulance (see Figures 9.1.1.4 a and 9.1.1.4 b).

9.1.1.5 Position the force application plate so that it is centered on the roof.

9.1.1.6 Close all ambulance doors.

9.1.1.7 Load the application plate to 500 lbs (227 kg) at a deflection rate less than 0.5 in. (13 mm) per second.

9.1.1.8 Record elevation readings of all four corners of the roof.

9.1.1.9 Load the application plate to 50 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second.

9.1.1.10 Record elevation readings of all four corners of the roof.

9.1.1.11 Load the application plate to 100 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second.

9.1.1.12 Record elevation readings of all four corners of the roof.

9.1.1.13 Verify that patient compartment doors are capable of being opened and closed.

9.1.1.14 Remove load.

9.1.1.15 Verify that patient compartment doors are capable of being opened and closed.

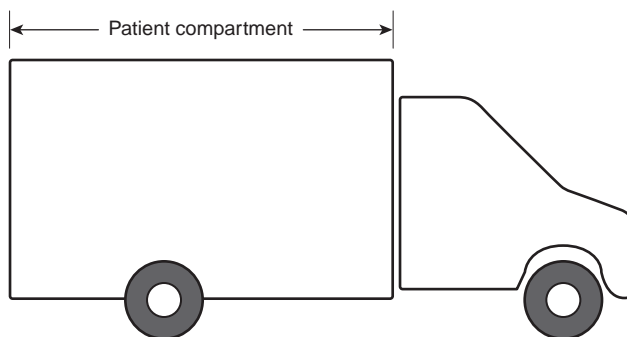


Figure 9.1.1.4 a Type I and Type III Ambulance Patient Compartment Roof Measurement

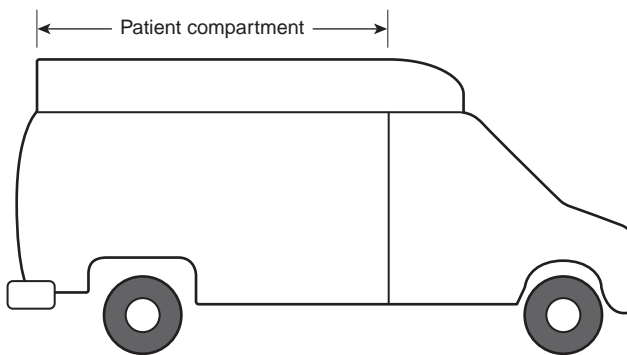


Figure 9.1.1.4 b Type II Ambulance Patient Compartment Roof Measurement

9.1.2 Side Crush Test (Type 1 and Type 3 only).

9.1.2.1 Place either side of the body, on a rigid horizontal surface so that the body is entirely supported.

9.1.2.2 Measure and record the distance from the mounting surface to each of the four top corners of the body side.

9.1.2.3 Employ a rigid, rectangular force application plate fitted as near as possible, to the contour of the ambulance side. The application plate shall be a minimum of 5 in. (127 mm) longer and 5 in. (127 mm) wider than the vehicle side of the patient's compartment.

9.1.2.4 Position the force application plate so that it is centered on the patient compartment side.

9.1.2.5 Close all ambulance doors.

9.1.2.6 Load the application plate to 500 lbs (227 kg) at a deflection rate less than 0.5 in. (13 mm) per second.

9.1.2.7 Record elevation readings of all four corners of the body side.

9.1.2.8 Load the application plate to 50 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second.

9.1.2.9 Record elevation readings of all four corners of the body side.

9.1.2.10 Load the application plate to 100 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second.

9.1.2.11 Record elevation readings of all four corners of the body side.

9.1.2.12 Verify that the rear patient compartment doors are capable of being opened and closed.

9.1.2.13 Remove load.

9.1.2.17 Verify that the rear patient compartment doors are capable of being opened and closed.

9.2 Body Door Test (applies to Type 1 and Type 3 only).

9.2.1 Position the test structure or ambulance on a level, horizontal surface.

9.2.2 The patient compartment shall be structurally complete, but need not include interior panels or cabinet installation.

9.2.4 Employ force application fixtures in such a manner that the opposing forces shall be supported by the body structure.

9.2.5 Apply forces for 10 seconds in all required directions and/or positions after the installation of associated body door retention components.

9.2.6 Apply forces for 10 seconds to a continuous hinge so that the load will be distributed equally from top to bottom.

9.2.7 Apply forces for 10 seconds to individual (strap type) hinges so that the load will be distributed proportionally on each hinge.

9.2.8 Apply forces so that it will be equally distributed as near the latch or hinge as practical.

9.3 Oxygen Tank Retention System Static Test.

9.3.1 Test the retention system in a substantially similar ambulance, or mounted to a structure that is substantially similar to the ambulance.

9.3.2 Apply forces using a rigid simulated cylinder having the same physical dimensions as the oxygen tank for which the tank holder was designed.

9.3.3 Apply each force so that it passes through the location that corresponds to the center of gravity of a full tank.

9.3.4 Apply the test force for 10 seconds in the direction of cylinder extraction and in both axial directions.

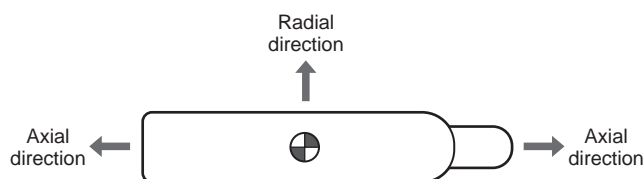


Figure 9.3 Oxygen Tank Retention Test

9.4 Patient Cot Retention System Static Test.

9.4.1 Test the retention system in a substantially similar ambulance, or mounted to a structure that is substantially similar to the ambulance floor.

9.4.2 Employ a test fixture that simulates the cot for which the retention system is designed.

9.4.3 Install the test fixture in the retention system in such a manner that will preclude contact friction with the floor or cabinet surfaces.

9.4.4 Apply each force so that it passes through the location that corresponds to the center of gravity of a loaded patient cot.

9.4.5 Apply the test force for 10 seconds in the fore, aft, side-to-side and vertical directions relative to the direction of vehicle travel.

9.4.6 Replace any damaged parts after each application of force (i.e., hooks, antlers or side bars)

9.4.7 Rotation or deformation of retention mechanisms does not constitute failure.

9.5 Low Voltage Electrical System Test

9.5.1* The ambulance low voltage electrical system shall be tested as required by this section, the test results shall be certified by the ambulance manufacturer, and the certified test results shall be delivered with the ambulance.

A.9.5.1 The purchaser might wish to have the entire low voltage electrical system and warning device system certified by an independent third-party certification organization.

9.5.2 Tests shall be performed when the ambient air temperature is between 60°F and 110°F (–18°C and 43°C).

9.5.3 Test Sequence.

9.5.3.1 The three tests defined in 9.5.3.2 through 9.5.3.4.4 shall be performed in the order in which they appear.

9.5.3.1.1 Before each test, the batteries shall be fully charged until the voltage stabilizes at the voltage regulator set point and the lowest charge current is maintained for 10 minutes.

9.5.3.1.2 Failure of any of these tests shall require a repeat of the sequence.

9.5.3.2 Reserve Capacity Test.

9.5.3.2.1 The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged.

9.5.3.2.2 The engine shall be shut off, and the minimum continuous electrical load shall be activated for 10 minutes.

9.5.3.2.3 All electrical loads shall be turned off prior to attempting to restart the engine.

9.5.3.2.4 The battery system shall then be capable of restarting the engine.

9.5.3.2.5 Failure to restart the engine shall be considered a test failure of the battery system.

9.5.3.3 Alternator Performance Test at Idle.

9.5.3.3.1 The Minimum Electrical Load Test Conditions as stated in 7.3.2.1.1 shall be activated with the engine running at idle speed.

9.5.3.3.2 The engine temperature shall be stabilized at normal operating temperature.

9.5.3.3.3 The battery system shall be tested to detect the presence of battery discharge current.

9.5.3.3.4 The detection of battery discharge current shall be considered a test failure.

9.5.3.4 Alternator Performance Test at High-Idle

9.5.3.4.1 The Operational Electrical Load Test Conditions as stated in 7.4.1 shall be activated with the engine running at high idle.

9.5.3.4.2 The test duration shall be a minimum of 30 minutes

9.5.3.4.3 Activation of the load management system shall be permitted during this test.

9.5.3.4.4 An alarm sounded by excessive battery discharge, as detected by the warning system

required in Chapter 7, or a system voltage of less than 11.8 V dc for a 12 V nominal system, 23.6 V dc for a 24 V nominal system, or 35.4 V dc for a 42 V nominal system for more than 120 seconds shall be considered a test failure.

9.5.4 Low Voltage Alarm Test.

9.5.4.1 The following test shall be started with the engine off and the battery voltage at or above 12 V for a 12 V nominal system, 24 V for a 24 V nominal system, or 36 V for a 42 V nominal system.

9.5.4.2 With the engine shut off, the total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates.

9.5.4.3 The battery voltage shall be measured at the battery terminals.

9.5.4.4 The test shall be considered a failure if the alarm does not sound in less than 140 seconds after the voltage drops to 11.70 V for a 12 V nominal system, 23.4 V dc for a 24 V nominal system, or 35.1 V for a 42 V nominal system.

9.5.4.5 The battery system shall then be able to restart the engine.

9.5.4.6 Failure to restart the engine shall be considered a test failure.

9.6 Patient Compartment Sound Level Test.

9.6.1 This test shall be performed during the following environmental conditions:

- (1) Temperature not to exceed 95°F (35° C).
- (2) Humidity not to exceed 75 percent relative humidity.
- (3) Wind velocity not to exceed 12 mph (19 km/hr).
- (4) Barometric pressure 29 to 31 in. Hg (98.2 to 104.9 kPa)

9.6.2 Measure sound level using a meter that meets requirements of the American National Standard Institute, Standard (ANSI) S1.4 — Specification for Sound Level Meters, for Type II meters. Set the meter to A — weighing network, “fast” meter response.

9.6.3 Suspend the microphone 23 in. (584 mm) above the vehicle floor, centered laterally and longitudinally on the expected center of the patient cot as it will be secured in the patient compartment.

9.6.4 Park ambulance on a concrete or asphalt surface, at a location so that no large reflecting surfaces, such as other vehicles, signboards, buildings or hills are within 50 ft (15.2 m) of the vehicle being tested.

9.6.5 Close all ambulance doors, windows and vents.

9.6.6 Run air conditioner and heater blower fans in patient compartment at their highest speed.

9.6.7 Set vehicle transmission in neutral gear and set the engine speed to the rpm obtained by the ambulance when operating on level ground at 55 mph (88 km/hr).

9.6.8 Turn on all warning lights

9.6.9 Operate siren in the loudest mode.

9.6.10 Measure and record the highest sound level.

9.6.11 Decrease the engine speed to idle and then back to the 55 mph (88 km/hr) rpm.

9.6.12 Measure and record the highest sound level

9.6.13 Repeat until two maximum sound levels within 2 decibels (db) of each other are recorded.

9.6.14 Numerically average these two maximum sound level readings.

9.7 Reserved.

9.8 Handrail Static Load Test.

9.8.1 Apply force to hand rail at the midpoint between every location where the hand rail fastens to the vehicle body structure and as near as possible to the ends of the handrail.

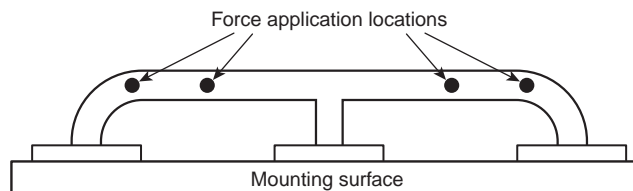


Figure 9.8.1 Location of Force Application on Handrail

9.8.2 Apply the force perpendicular to the mounting surface

9.8.3 Apply the force parallel to the mounting surface

9.8.4 Apply the force diagonal to the mounting surface at an angle midway between the perpendicular and the parallel pulls.

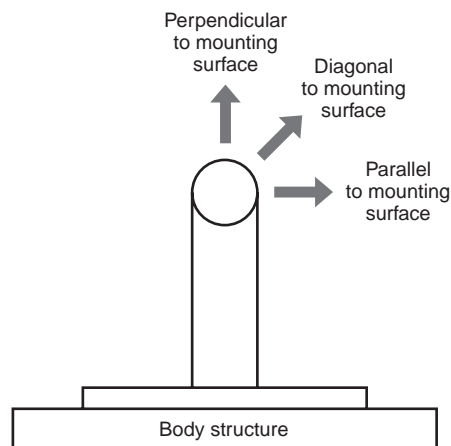


Figure 9.8.4 Direction of Force Application on Handrail

9.8.5 Maintain each force application for two minutes.

Renumber Section 9.2 to 9.9

9.10 Water Leak Test.

9.10.1 This test shall be performed during the following environmental conditions:

- (1) Temperature above 40° F (4° C).
- (2) Wind velocity not to exceed 10 mph (16 km/hr).

9.10.3 Close all windows and doors

9.10.4 Turn off heating, ventilating and air conditioning (HVAC) systems.

9.10.5 Drench the entire roof, sides, front and back of the vehicle evenly with water spray from a nozzle or combination of nozzles.

9.10.6 Continue spraying until a minimum of 40 gal. (151 L) of water has been used.

9.10.7 Start engine and operate the cab and patient compartment ventilation systems at maximum ventilation rates.

9.10.8 Continue spraying until a minimum of 40 gal. (151 L) of water has been used.

9.10.9 Inspect the interior of the cab and patient compartment for water leaks during the duration of the test.

9.10.10 At the conclusion of the test examine all exterior lights and exterior compartments for leakage

9.11 Equipment Temperature Test.

9.11.1 Locate the test vehicle in an environmental chamber capable of maintaining a temperature within $\pm 4^\circ\text{F}$ (2°C).

9.11.2 Turn off all vehicle power.

9.11.3 Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors.

9.11.4 Maintain an air velocity over the vehicle of at least 5 mph (8 km/hr) throughout the entire test.

9.11.5 Cool the chamber to 32°F (0° C) and soak the vehicle at this temperature for a minimum of 3 hours.

9.11.6 Start the engine

9.11.7 Operate all vehicle systems for one hour while maintaining 32°F (0C) chamber temperature.

9.11.8 Shut off the engine

9.11.9 Heat the chamber to 95° F (35° C) and soak the vehicle at this temperature for a minimum of 3 hours.

9.11.10 Start the engine

9.11.11 Operate all vehicle systems for one hour while maintaining 95°F (35° C) chamber temperature.

9.11.12 Shut off the engine

9.12 Interior Climate Control Test.

9.12.1 Locate the test vehicle in an environmental chamber capable of maintaining a temperature within $\pm 4^\circ\text{F}$ (2°C).

9.12.2 Locate 3 thermocouples 7 in. (178 mm) off the floor along the patient compartment centerline and equally spaced from front to back.

9.12.3 Locate 3 thermocouples 7 in. (178 mm) below the ceiling along the patient compartment centerline and equally spaced from front to back

9.12.4 Locate 3 thermocouples midway between the floor and the ceiling along the patient compartment centerline and equally spaced from front to back

9.12.5 Locate 3 thermocouples in the cab horizontally positioned 24 in. (600 mm) above the seat cushion and located 12 in. (300) in front of the headrest.

Locate first and third thermocouples along the centerline of driver's and passenger's seat and center the second between the first and third.

9.12.6 Turn off all vehicle power.

9.12.7 Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors.

9.12.8 Open engine hood.

9.12.9 Maintain an air velocity over the vehicle of at least 5 mph throughout the entire test.

9.12.10 Cool the chamber to 32°F $\pm 4^\circ\text{F}$ (0° C $\pm 2^\circ\text{C}$) and soak the vehicle at this temperature for a minimum of 3 hours.

9.12.12 Close all doors and hood with exception of partition doors (if present) and patient compartment/cab partition window (if present)

9.12.13 Set heaters in cab and patient compartment to maximum heating setting (maximum temperature; maximum blower speed; re-circulating air).

9.12.14 Record the thermocouple temperatures

9.12.15 Shut off Patient compartment dome lights

9.12.16 Start engine and maintain transmission in neutral or park and engine high idle on with a maximum engine speed of 1,500 rpm.

9.12.17 Record thermocouple temperatures at 5 minute intervals up to 30 minutes.

9.12.18 Shut off the engine

9.12.19 Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors.

9.12.20 Open engine hood.

9.12.21 Heat the chamber to 95° F (35° C) with a minimum of 40 percent relative humidity and soak the vehicle at this temperature for a minimum of 3 hours.

9.12.25 Close all doors and hood with exception of partition doors (if present) and patient compartment/cab partition window (if present)

9.12.26 Set air conditioners in cab and patient compartment to maximum cooling setting (maximum blower speed, coldest temperature setting, re-circulating air).

9.12.27 Record the thermocouple temperatures

9.12.28 Shut off Patient compartment dome lights

9.12.29 Start engine and maintain transmission in neutral or park and engine high idle on with a maximum engine speed of 1,500 rpm.

9.12.30 Record thermocouple temperatures at 5 minute intervals up to 30 minutes.

9.12.31 Shut off the engine

9.13 Reserved.

9.14 Engine Cooling System Test.

9.14.1 Locate the test vehicle in an environmental chamber capable of maintaining a temperature within $\pm 4^\circ\text{F}$ (2°C).

9.14.2 Turn off all vehicle power.

9.14.3 Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors.

9.14.4 Heat the chamber to 95° F (35° C) and soak the vehicle at this temperature for a minimum of 3 hours.

9.14.5 Start the engine

9.14.6 Close all doors, hood, partition door (if present) and patient compartment/cab partition window (if present).

9.14.7 Maintain an air velocity over the vehicle of at least 5 mph (8 km/hr) throughout the entire test.

9.14.8 Set air conditioners in cab and patient compartment to maximum cooling setting (maximum blower speed, coldest temperature setting, re-circulating air).

9.14.9 With all other ambulance equipment off, operate the engine at high idle for one hour.

9.15 Ambulance Main Oxygen System Test.

9.15.1 Pressure Test.

9.15.1.1 Ensure that the ambulance temperature has stabilized in an environment between 34° and 110° F (1° and 43° C).

9.15.1.2 Charge the system with approximately 200 psi (1380 kPa) of test gas.

9.15.1.3 Close system valves to trap pressure in the lines that contain the vent valve

9.15.1.4 Record system pressure with an accuracy of ± 0.1 psi (7 kPa)

9.15.1.5 Allow system to rest without disturbance for 2 hours.

9.15.1.6 Record system pressure.

9.15.2 Flow Test.

9.15.2.1 Ensure that the ambulance temperature has stabilized in an environment between 34° and 110° F (1° and 43° C).

9.15.2.2 Charge the system with test gas regulated to 50 ± 2 psi (345 ± 14 kPa).

9.15.2.3 Plug all outlets other than the one being tested

9.15.2.4 Measure and record the flow of gas from each outlet using a flow meter with an accuracy of ± 2 liters per minute.

9.15.2.5 For the purpose of this test 110 liters per minute of breathing air or dry nitrogen is considered equivalent to 100 liters per minute of oxygen.

9.15.2.6 Check the electrical continuity between the oxygen system piping and the vehicle to verify that it is grounded.

9.16 Patient Compartment Lighting Level Test.

9.16.1 Prepare the ambulance or locate it in an environment to prevent light from penetrating into the patient compartment.

9.16.2 Remove the patient cot

9.16.3 Start Engine

9.16.4 Turn on dome lights to highest setting

9.16.5 Measure and record the light intensity along the longitudinal centerline of the patient compartment floor every 10 inches.

9.16.6 Turn on the lights that come on with the side entry door or rear entry door.

9.16.7 Measure and record the light intensity along the longitudinal centerline of the patient compartment floor every 10 inches.

9.16.8 Measure and record the light intensity in the center of the side entry step well and record the reading.

9.16.9 Install the patient cot test grid in Figure 9.16.9, 17 in. (432 mm) above the patient compartment floor; centered laterally and longitudinally on the expected center of the patient cot as it will be secured in the patient compartment.

9.16.10 Measure and record the light intensity in the center of each 5 in. (2 (322 mm) are on the test grid

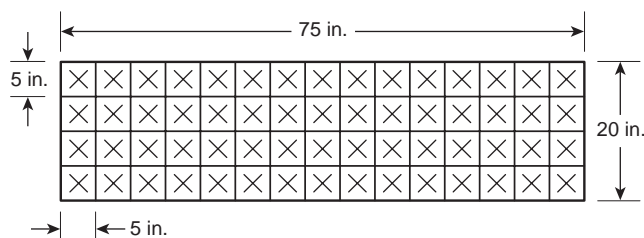


Figure 9.16.9 – Patient Cot Test Grid Top View

9.18 Rear Stepping Surface Load Test.

9.18.1 Support the ambulance or substantially similar structure to negate the effect of the vehicle suspension.

9.18.2 Apply vertical load on the stepping surface using a fixture that distributes the load over a circular area 5 in. (127 mm) in diameter.

9.18.3 Apply 500 lb. (227 kg) of load to the lateral and longitudinal center of the stepping surface.

9.18.4 Record deflection during the load application

9.18.5 Release Load

9.18.6 Measure and record any permanent deformation after the load is released.

9.18.5 Apply 500 lb. (227 kg) of load to the longitudinal center of the stepping surface as close to each of the lateral extremes as the test fixture will allow.

9.18.7 Record deflection during the load application

9.18.8 Release Load

9.18.9 Measure and record any permanent deformation after the load is released.

9.19 Reserved.

9.20 Reserved.

9.21 Aspirator System Test.

9.21.1 Ensure that the ambulance temperature has stabilized in an environment between 34° and 110° F. (1° and 43° C)

9.21.2 Run the vehicle engine at high idle speed for duration of the test.

9.21.3 Vacuum Test.

9.21.3.1 Install a 120 in. (3 m) length of transparent or translucent, non-kinking suction tubing on the collection bottle.

9.21.3.2 Install a vacuum measuring instrument capable of an accuracy of ± 5 mm Hg to measure the vacuum in the collection bottle.

9.21.3.3 Open the vacuum control and shut-off valve to their full-open position.

9.21.3.4 Turn on vacuum pump.

9.21.3.5 Clamp or plug end of suction tubing.

9.21.3.6 Measure and record the vacuum 4 seconds after plugging the tubing.

9.21.4 Flow Test.

9.21.4.1 Install a flow measuring instrument capable of an accuracy of ± 1 lpm to measure the flow in the suction tubing.

9.21.4.2 Open the vacuum control and shut-off valve to their full-open position.

9.21.4.3 Turn on vacuum pump.

9.21.4.4 Measure and record the flow.

9.22 Reserved.

9.23 Reserved.

9.24 Perimeter Illumination Test.

9.24.1 Locate the ambulance in dark environment.

9.24.2 Ensure that the vehicle batteries are fully charged.

9.24.3 Record light intensity with a meter capable of measuring to an accuracy of ± 0.01 fc.

9.24.4 Construct a grid of test points off of the sides and rear of the test ambulance as shown in Figure 9.24.

9.24.4.1 Locate lines parallel with the exterior walls of the patient compartment 60 in. (1524 mm) and 120 in. (3048 mm) from the test unit.

9.24.4.2 Intersect these lines with lines perpendicular to the exterior walls emanating from each corner and the mid-point of the patient compartment.

9.24.4.3 Construct additional perpendicular lines emanating from the center of each scene light.

9.24.5 Measure and record the light intensity at each point in the grid

9.24.6 Turn on all exterior scene lights

9.24.7 Measure and record the light intensity at each point 3 in. (76 mm) above the grid.

9.24.8 Subtract the ambient light readings from the scene light readings.

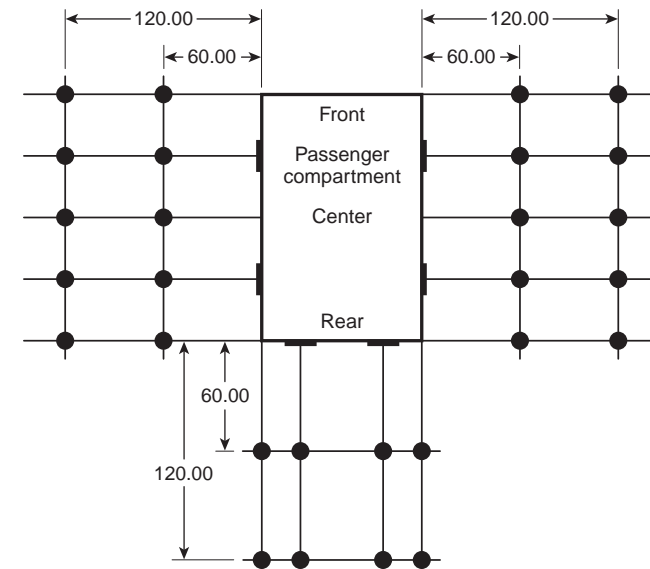


Figure 9.24 Perimeter Illumination Test Grid

9.25 Occupant Head Clearance Zones.

9.25.1 Construct a rigid rectangular test box 43 in. (1,092 mm) high, 24 in. (457 mm) wide, and 15 in. (381 mm) deep.

9.25.2 Maximum weight for the test fixture shall not exceed 60 lbs (27 kg)

9.25.3 Place the test box in each seating position, centered laterally on the seat cushion, with the bottom edge resting against the seat back.

9.25.4 Align the test box so that the sides of the box are perpendicular to the patient compartment floor.

9.25.5 No permanent objects shall protrude into the test box zone.

Committee Statement: The committee agrees with the proposal, but is only accepting text that was edited with references to Chapter 9 and the new replacement text for Chapter 9.

A new definition for high idle speed control was added to clarify testing the low voltage electrical system.

Changes to section 4.6 were made because ISO/IEC 17020 and ISO/IEC 17025 are standards-specific. This means that a test lab certified using these standards must be accredited to perform the specific test that is to be conducted. ISO/IEC guide 65 is for general accreditation is not standard specific. Having a lab accredited to Guide 65 does not ensure that the lab has any specific ambulance knowledge. Section 4.6.9 is removed because it is redundant given the requirements of section 4.6.

The changes to 4.6.10 makes it clear that certain information is required to be submitted by the certifying organization, uses the term "certification organization" rather than "contractor" to avoid misunderstanding with the use of the term contractor elsewhere in the document, and clarifies what is meant by "units or items".

Changes to 4.7 clarifies intent

In section 6.4 the school bus test better simulates a side impact or roll over onto a concrete abutment.

In section 6.5.1.2 the committee feels that every ambulance should be tested for leaks.

Section 6.17.4 is not related to the section subject of interior storage. Section 4.12.3 deals with temperature the ambulance needs to operate within.

Section 6.27 on HVAC has been changed because most chassis available today do not allow independent operation of the ac system. To accomplish this adds cost that does not result in value for normal operations.

Section 7.11.6 standardizes wording within the requirements and adds wording for requirements of the low settings of the lighting which is consistent with testing.

Section 9.5 completely replaces Section 9.1, the section was rewritten for clarity.

Section 9.25 provides adequate shoulder width and specifies how high up the shoulder width should extend, and harmonize shoulder width requirement with the head clearance test in chapter 9.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

PRENTISS, S.: Housekeeping

1917-4 Log #13 **Final Action: Reject**
(Entire Document)

Submitter: Edward Boughton, E.J. Boughton Co.**Recommendation:** None given.

Substantiation: My issue is purely financial, as a tax payer who understands the impact of NFPA regulations, I would respectfully suggest that the cost increases related to this proposal are not out-weighted by any potential benefit from the regulations. In short, stop needlessly passing regulations that are totally needless. Cost really does matter!!

Committee Meeting Action: Reject**Committee Statement:** The submitter stated no specific recommendation or substantiation.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

COLE, D.: While this does not state a specific recommendation, it does beg the question why didn't 1917 address the necessary improvements for the patient compartment. Why are we going back to committee. Let's fix it now!

1917-5 Log #250 **Final Action: Reject**
(Entire Document)

Submitter: G. David Wheaton, Lee County Emergency Medical Services

Recommendation: What is being addressed with regards to NFPA 1917 for child passenger safety, both for patients and children not needing medical care but needs to go to the hospital with a parent or caregiver. I do not recall NHTSA dealing with this issue in detail, so I believe it can be addressed in ambulance standards similar to how it was in regular vehicle standards.

Substantiation: Safety of children being transported in ambulances. We have standards for vehicles, but no standard for ambulances.

Committee Meeting Action: Reject**Committee Statement:** Section 6.24.8 has child seat requirements.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

PRENTISS, S.: NHTSA needs to take the lead in collaboration - there was a draft report that addressed this released in summer 2010, it's not yet in its final form, however, injury prevention programs have looked to this document for the delivery of education to EMS providers around the issue.

1917-6 Log #298 **Final Action: Reject**
(Entire Document)

Submitter: Susan Jagoda, General Motors

Recommendation: Many sections of the proposed ambulance standards include requirements governed by U.S. Federal Motor Vehicle Safety Standards and Regulations (FMVSS). It is recommended that the proposed NFPA 1917 be revised to delete all such subject matter.

Note: OEMs build incomplete vehicles. These are manufactured into complete ambulances and other specialized motor vehicles by final stage manufacturers. As required by Federal Motor Vehicle Safety Regulations 567 and 568, OEMs provide an Incomplete Vehicle Document (IVD) with each incomplete vehicle. This IVD specifies the conditions under which the vehicle, when completed, complies with the applicable FMVSS. This incomplete vehicle document is used by the final stage manufacturer as part of its manufacturing record.

Both the Incomplete Vehicle Manufacturer (Original Equipment Manufacturer (OEM)) and final stage manufacturer are required to ensure the motor vehicles they build comply with all FMVSS applicable to the vehicle in accordance with the U.S. Motor Vehicle Safety Act. GM has and will continue to build our incomplete vehicles accordingly.

Substantiation: NFPA's inclusion of requirements that are governed by the U.S. Federal Motor Vehicle Safety Standards and Regulations (FMVSS) or requirements and definitions that are in conflict with FMVSS in the draft proposal is not likely to produce the intended result for the implementation of useful standards for the ambulance industry in these areas since both the OEMs

and final stage manufacturers MUST comply with the Federal requirements rather than NFPA standards.

It is recommended that the proposed NFPA standard be revised to exclude any requirements or subject matter governed by FMVSS and revise the proposed definitions to be consistent with those provided in the various FMVSS. This action would reduce the potential for industry confusion and the risk of an FMVSS noncompliance in a completed vehicle based on a NFPA requirement conflicting with that of an applicable FMVSS.

Committee Meeting Action: Reject**Committee Statement:** The submitter provided no specific recommendation.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

COLE, D.: it would seem to make sense to accept this comment and provide a recommendation and change from this committee. The TC moved to fast to provide a quality document.

1917-7 Log #917 **Final Action: Reject**
(Entire Document)

Submitter: Scott Tucker, Canyon County Paramedics

Recommendation: Consideration for vehicle mounted computer stands in relation to airbag systems. Insuring that an airbag cutoff switch is in place for vehicles with onboard computer mounting systems.

Substantiation: None given.**Committee Meeting Action: Reject****Committee Statement:** No specific recommendation or substantiation provided by the submitter.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 24 Negative: 3**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

COLE, D.: this did give a recommendation. "Have an airbag cutoff switch" Good idea!

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-8 Log #1022 **Final Action: Reject**
(Entire Document)

Submitter: Gregory Miller, Region 2 EMS Directors Association**Recommendation:** None given.

Substantiation: Region II EMS Director's Association covers a 16 county region in East Tennessee and is comprised EMS directors within the region, as well as other allied health professionals. We would like to take opportunity to provide our professional opinion regarding the proposed standard *NFPA 1917, Standard Automotive Ambulances* 2013 edition. Let it be understood we agree that some safety standard improvements are needed and are necessary within the ambulance realm; however, we feel the proposed standard (NFPA 1917) is excessive. It is our opinion that the proposed standards will create a hyper-on of cost and a significant delay to the ambulance manufacturing process, thus negatively impacting ambulance service industry.

We formally requesting that the proposed document NFPA 1917 be denied as written and we respectfully request a revision to the proposal that will be more conducive to industry implementation.

Committee Meeting Action: Reject**Committee Statement:** No specific recommendation or substantiation provided by the submitter.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

COLE, D.: The recommendation was to deny the implementation of 1917.

1917-9 Log #1258 **Final Action: Reject**
(Entire Document)

Submitter: Nadine Levick, EMS Safety Foundation

Recommendation: PURPOSE of our comments - To improve safety of personnel, patients and other occupants using accepted technical occupant safety science and principles without making the vehicle heavier or more expensive.

Substantiation: CONCEPTUAL ISSUES: It is commendable that NFPA has embarked on addressing the enhancement of the design standards for ambulance vehicles, however this is a very complex vehicle and occupant safety issue, challenging for even the most sophisticated automotive safety and occupant protection and biomechanics experts. This Standard's development is by consensus, and this should include a consensus involving vehicle occupant protection and automotive and biomechanics safety design engineers, ergonomic and safety science technical expertise. Standards should incorporate and be guided by technical automotive safety and occupant protection expertise and input, and should be inclusive of content in existing ambulance design standards which address these key aspects. Testing to address occupant protection safety should be conducted by testing labs certified in the field of automotive occupant protection and safety. Safety of ambulance occupants should include a comprehensive systems approach to occupant safety, and be consistent with current accepted vehicle occupant protection technical science and approach. Ergonomic science on reach and task analysis should be central to interior layout. As per 1.5 Equivalency page 1, Standard should not constrain emerging design improvements and be permissive of safety innovation. Standard is too prescriptive for a 'minimum' and could constrain improved or alternative designs. IN SUMMARY: It is key to include existing technical scientific information in crash avoidance, crash worthiness, and occupant protection and safety in this Standard and that the existing information on injury mechanisms and outcomes be applied to drive the construct of this Standard. We also strongly recommend that the draft standard be developed with comprehensive utilization of currently available research specific to the safety of the ambulance environment, and key input from the technical disciplines that relate to the safety of ambulance vehicles and outcomes be incorporated in this Standard., and so that the Standard does not constrain safety design and innovation.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: This standard should include safety design and innovation. For 1917 to be rushed to print is a disservice to our industry.

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-10 Log #1267 **Final Action: Reject**
(Entire Document)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Perhaps the most critically important features of this specification will be the flexibility allowed to meet unique customer requirements.

The NFPA spec will provide a strong foundation for a solid, base ambulance configuration. However, it is critical that purchasers have the means to take exceptions where needed to meet the special requirements unique to their service.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 2 Abstain: 1

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Explanation of Abstention:

COLE, D.: I agree with the comment in this log - however without a recommendation we cannot accept this. I recommend we allow an exception for customer requirements. a signed release?

1917-11 Log #1424 **Final Action: Reject**
(Entire Document)

Submitter: Michael S. Wolfe, Plainfield Fire Territory

Recommendation: None given.

Substantiation: I understand that NFPA is Fire service oriented. Too much of this document is written towards fire based EMS. This document should be written for non-fired based EMS. Although fire departments provide a large amount of EMS, they are not the primary EMS transport providers in the country. As such the article is biased in its target audience since the majority of the writers are fire based.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-12 Log #1562 **Final Action: Reject**
(Entire Document)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Use the NFPA extract policy to identify text from other NFPA documents. Also use the annex to explain differences between requirements in NFPA 1901 and NFPA 1917 where there is no obvious reason for a difference given that both standards apply to the safe, reliable performance of emergency vehicles.

Substantiation: A lot of the text appears to have been copied from NFPA 1901. NFPA Manual of Style requires that text extracted from other NFPA documents be identified as such.

In some cases, the text for what should be the same requirement in all emergency vehicles is different in NFPA 1917. The committee needs to explain why it is different and work with the Fire Department Apparatus Committee to reach common requirements. NFPA standards should be consistent unless differences can be justified based on the purpose for which the emergency vehicle is used.

Committee Meeting Action: Reject

Committee Statement: An ambulance and a fire apparatus are separate vehicles. The committee borrowed some wording from 1901, *Standard for Automotive Fire Apparatus*, as well as from KKK and AMD, but the 1917 standard is intended to stand on its own.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-13 Log #1563 **Final Action: Accept in Principle**
(Entire Document)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Be consistent in including the title of cited documents after chapter 2. Suggest use title at first citation in a section or chapter.

Substantiation: In some cases, the full name of the standard being cited is included and in other cases, the only reference to the full title is in chapter 2. The committee should be consistent in its style. I suggest the full title be cited at first reference in a section or chapter.

Committee Meeting Action: Accept in Principle

Committee Statement: The committee did not find any specific sections that did not include the full title of the reference document at first use, but will have NFPA staff verify.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-14 Log #1688 **Final Action: Reject**
(Entire Document)

Submitter: Peter I. Dworsky, Monoc

Recommendation: There should be a requirement for a temperature control compartment to ensure medications are storage with the required range as indicated by the pharmaceutical industry.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

COLE, D.: I agree with the log - maybe an appendix is in order?

1917-15 Log #1679 **Final Action: Reject**
(Entire Document)

Submitter: Randy M. Freiburger, Ford Motor Company

Recommendation: Delete text as follows:

Cab integrity 0/26K GVW.

Substantiation: Engineering, technology, and resource plans developed during this time period were based on government requirements. Addition of incremental standards and the technology/resources required are not identified and not contained.

Committee Meeting Action: Reject

Committee Statement: The substantiation the submitter provided is unclear.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 2 Abstain: 1

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Explanation of Abstention:

COLE, D.: This log should be referred back to the author for a clear understanding. Author represents a major chassis segment used in the ambulance industry.

1917-16 Log #248 **Final Action: Reject**
(1.1)

Submitter: Jim Buell, Rep. Michigan Association of Emergency Medical Technician

Recommendation: The Michigan Association of Emergency Medical Technicians holds that the scope of NFPA 1917 must include consideration of ambulance safety as a core element of the new standard. There is a considerable, and growing body of evidence that could inform design decisions the result of which would be a safer ambulance for field paramedics and emergency medical technicians. The committee should include consideration of implementing safety recommendations from the peer-reviewed literature in this standard as it sees fit.

Substantiation: NFPA 1917 as proposed does not include substantial safety upgrades over the existing standard. By considering the peer reviewed evidence pertaining to ambulance safety the committee would remedy this defect.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no specific recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

COLE, D.: I agree with this log. We should have included better design standards.

1917-17 Log #1561 **Final Action: Accept in Principle in Part**
(1.1, 1.2, and 1.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 1.1, 1.2 and 1.3 to read as follows:

1.1* Scope.

~~1.1.1~~ This standard ~~defines establishes~~ the minimum requirements for the ~~design, performance and testing of new automotive ambulances emergency medical services (EMS) ground vehicles~~ used for out-of-hospital medical care and patient transport.

~~A.1.1 1.1.2~~ The term *new* as applied in this standard is intended to refer to the original construction of an ambulance using all new materials and parts.

1.2 Purpose. The purpose of this ~~standard document~~ is to ~~establish the specify~~ minimum requirements ~~for new automotive ambulances that will be safe and reliable when properly maintained and used within their design parameters.,~~ performance parameters, and essential criteria for the design of ground ambulances.

1.3 Application.

1.3.1 This standard shall apply equally to ~~ambulances vehicles~~ intended for use in both emergency and non-emergency operations.

1.3.2 This standard shall not apply to the following:

1. Refurbished and re-mounted ~~ambulances vehicles~~
2. Vehicles that are used for transport of more than two stretcher-bound patients at the same time
3. Mass casualty vehicles
4. Military field ambulances
5. Vehicles intended for use as fire apparatus as specified in NFPA 1901 or NFPA 1906

Substantiation: This is an automotive ambulance standard. Using other terms to refer to the ambulance, particularly in chapter 1 creates confusion as the user may think something else is being referred to. An emergency medical services (EMS) ground vehicle could be a response vehicle used by paramedics but may not have patient transport capability.

1.1.2 is explanatory material and belongs in the annex.

The changes to the scope are to strengthen the understanding that, as a product standard, this document covers the design, performance and testing of new ambulances.

The changes to the purpose are to better state what the standard is trying to accomplish.

Committee Meeting Action: Accept in Principle in Part

Committee Statement: The committee accepted the changes to the scope and purpose statement and in principle, to the application statement. See committee action on Proposal 1917-21 (Log #CP3) for the application statement.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-18 Log #930 **Final Action: Reject**
(1.1 Scope)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: Section 1.1 (Scope) of KKK-A-1822F specifies that the ambulance be built on a chassis prepared by the OEM for use as an ambulance. While this standard contemplates the use of chassis other than production OEM ambulance prep package chassis, there should be some requirement that the chassis is suitable for use as an ambulance. We recommend the standard include a provision that the ambulance be constructed on a chassis designed for use as an ambulance, or prepared by the OEM for use as an ambulance.

Further, the ambulance conversion should be constructed so that it does not void the OEM warranty and allows warranty services to be supplied by regular, full-service OEM dealerships without additional charge.

Substantiation: Warranty service on the engine of some current Ford products requires that the cab be removed to access the engine for repair. Some ambulance conversions have also been constructed in such a way that the cab cannot be removed. The ambulance owner is either charged a substantial sum to dismantle and reassemble the engine to effect repairs or the ambulance is out of service for an extended period of time because of the additional mechanic hours required to complete the repairs. Reference: Section 1.1 (Scope) of KKK-A-1822F.

Committee Meeting Action: Reject

Committee Statement: This is a performance standard. Items discussed by the submitter are difficult to quantify in a general standard, but easy to negotiate by the purchaser in a contract.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 2 Abstain: 1

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Explanation of Abstention:

COLE, D.: If we had the time to consider this comment - we could have used it to improve our document.

1917-19 Log #944 **Final Action: Reject**
(1.1 Scope)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: Section 1.1 (Scope) of KKK-A-1822F specifies that the ambulance be built on a chassis prepared by the OEM for use as an ambulance. While this standard contemplates the use of chassis other than production OEM ambulance prep package chassis, there should be some requirement that the chassis is suitable for use as an ambulance. We recommend the standard include a provision that the ambulance be constructed on a chassis designed for use as an ambulance, or prepared by the OEM for use as an ambulance. Further, the ambulance conversion should be constructed so that it does not void the OEM warranty and allows warranty services to be supplied by regular, full-service OEM dealerships without additional charge.

Substantiation: Warranty service on the engine of some current Ford products requires that the cab be removed to access the engine for repair. Some ambulance conversions have also been constructed in such a way that the cab cannot be removed. The ambulance owner is either charged a substantial sum to dismantle and reassemble the engine to effect repairs or the ambulance is out of service for an extended period of time because of the additional mechanic hours required to complete the repairs. Reference: Section 1.1 (Scope) of KKK-A-1822F.

Committee Meeting Action: Reject

Committee Statement: This is a performance standard. Items discussed by the submitter are difficult to quantify in a general standard, but easy to negotiate by the purchaser in a contract.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-20 Log #1260 **Final Action: Reject**
(1.2)

Submitter: Nadine Levick, EMS Safety Foundation

Recommendation: Add new text to read as follows:

The purpose of this document is to specify minimum requirements, performance parameters, and essential criteria for the safe design of ground ambulances and the safety of occupants and personnel.

Substantiation: Suggest to address this issue by inclusion of appropriate technical expertise, such that the Standards development is by consensus, but a consensus involving vehicle/automotive and occupant protection safety design engineers, biomechanics and safety technical expertise and ergonomic expertise.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no specific recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-21 Log #CP3 **Final Action: Accept**
(1.3)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

1.3 Application.

1.3.1 This standard shall apply equally to vehicles intended for use in both emergency and non-emergency operations. This standard shall apply to new ambulances that are contracted for on or after January 1, 2013.

1.3.2 This standard shall not apply to the following:

1. Refurbished and re-mounted vehicles
2. Vehicles that are used for transport of more than two stretcher-bound patients at the same time
3. Mass casualty vehicles
4. Military field ambulances
5. Vehicles intended for use as fire apparatus as specified in NFPA 1901 or NFPA 1906.

Substantiation: The committee included an implementation date for the requirements of the standard.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-22 Log #740 **Final Action: Reject**
(1.3.2)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

- 1.3.2** This standard shall not apply to the following:
1. Refurbished and re-mounted vehicles
 2. Vehicles that are used for transport of more than two wheeled stretcher-bound patients at the same time
 3. Mass casualty vehicles
 4. Military field ambulances
 5. Vehicles intended for use as fire apparatus as specified in NFPA 1901 or NFPA 1906
 6. Type I-AD and Type III-AD

Substantiation: Reason many states require the ability to carry a second patient on a long board which is a type of stretcher. Vehicle of these types are used to carry equipment as there primary purpose and should be covered under a different standard.

Committee Meeting Action: Reject

Committee Statement: Recommendation does not appear to match the substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-23 Log #919 **Final Action: Reject**
(1.3.2)

Submitter: Christopher Ryan, New Jersey Department of Health and Senior Services / Rep. Office of Emergency Medical Services

Recommendation: Revise text to read as follows:

- 1.3.2** This standard shall not apply to the following:
1. Refurbished and re-mounted vehicles
 2. Vehicles that are used for transport of more than two stretcher-bound patients at the same time
 3. Mass casualty vehicles
 4. Military field ambulances
 5. Vehicles intended for use as fire apparatus as specified in NFPA 1901 or NFPA 1906

Substantiation: Automotive Ambulances need to meet the same standards for patient safety regardless of manufacturing age. New and refurbished ambulances need to have a standard to ensure that nothing has been altered since it's original manufacturing date. As the office tasked with inspecting ambulances for the State of New Jersey many of the ambulances that do not meet the current specification outlined in KKK-A-1822F are those that have been remounted or refurbished. Not including these ambulance into the new NFPA standards may allow unsafe and substandard ambulances.

Committee Meeting Action: Reject

Committee Statement: Submitters proposal is out of scope of this standard. Need separate document for refurbished ambulances.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-24 Log #1031 **Final Action: Accept**
(1.3.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Add new text to read as follows:

- 1.3.2** This standard shall not apply to the following:
1. Refurbished and re-mounted vehicles
 2. Vehicles that are used for transport of more than two stretcher-bound patients at the same time
 3. Mass casualty vehicles
 4. Military field ambulances
 5. Vehicles intended for use as fire apparatus as specified in NFPA 1901 or NFPA 1906
 6. Wheeled chair transport vehicles

Substantiation: For clarification purposes wheelchair transports need to be added to the list.

Committee Meeting Action: Accept**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-25 Log #1361 **Final Action: Reject**
(1.3.2)**Submitter:** John Matthes, Kickapoo Valley Rescue Squad**Recommendation:** Revise text to read as follows:

1.3.2 This standard shall not apply to the following:

1. Refurbished and re-mounted vehicles
2. Vehicles that are used for transport of more than two wheeled stretcher-bound patients at the same time
3. Mass casualty vehicles
4. Military field ambulances
5. Vehicles intended for use as fire apparatus as specified in NFPA 1901 or NFPA 1906

6. Type I-AD and Type III-AD

Substantiation: Reason many states require the ability to carry a second patient on a long board which is a type of stretcher. Vehicle of these types are used to carry equipment as there primary purpose and should be covered under a different standard.**Committee Meeting Action: Reject****Committee Statement:** Recommendation does not appear to match the substantiation.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-26 Log #923 **Final Action: Reject**
(Chapter 2)**Submitter:** Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force**Recommendation:** We understand the initial rationale to develop this standard by 2013 is to ensure that a replacement to the General Services Administration (GSA) specification KKK-A-1822-F is available to the national ambulance community in a timely manner. We do not, however, see a need for a reformatted or marginally improved standard in the short-term. By contrast, minor improvements will likely only complicate and delay effective improvements in ambulance design. Our statewide EMS community feels strongly, however, that a next generation ambulance design standard with a greater focus on crash worthiness, crash avoidance and occupant safety is required. We also strongly recommend that the draft standard be developed with greater utilization of currently available research including available data. We have noted almost no reference to current research on conspicuity, ambulance occupant safety or crashworthiness. We encourage the NFPA to take the time needed to develop a standard with this safety focus. We would also be comfortable continuing to utilize the outdated GSA specification as needed until a properly focused and research-based standard on ambulance design is developed by NFPA.**Substantiation:** Minor changes and reformatting of existing ambulance design standards do not address the fundamental need of the ambulance community to have a significantly safer working platform. The current standard does not consider the evolving body of research in ambulance occupant safety crash worthiness. Large amounts of information on this topic are aggregated at: <http://www.objectivesafety.net/PDFArticlesgallery.htm>. Furthermore, the proposed standard complicates ambulance design in the short-term by mostly reformatting the GSA specification with minor changes that also incorporate some elements from the NFPA 1901 Fire Apparatus standard that are marginally applicable. Overall, these changes will not be useful to the ambulance community and may very well delay progress or prevent implementation of an appropriate standard due to the large number of short-term changes. We encourage the NFPA to embrace this opportunity to develop a safety-focused, functionally-based design standard validated by currently available research.**Committee Meeting Action: Reject****Committee Statement:** The submitter provided no specific recommendation.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-27 Log #936 **Final Action: Reject**
(Chapter 2)**Submitter:** DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors**Recommendation:** We understand the initial rationale to develop this standard this standard by 2013 is to ensure that a replacement to the General Services Administration (GSA) specification KKK-A-1822-F is available to the national ambulance community in a timely manner. We do not, however, see a need for a reformatted or marginally improved standard in the short-term. By contrast, minor improvements will likely only complicate and delay effective improvements in ambulance design. Our statewide EMS community feels strongly, however, that a next generation ambulance design standard with a greater focus on crash worthiness, crash avoidance and occupant safety is required. We also strongly recommend that the draft standard be developed with greater utilization of currently available research including available data. We have noted almost no reference to current research on conspicuity, ambulance occupant safety or crashworthiness. We encourage the NFPA to take the time needed to develop a standard with this safety focus. We would also be comfortable continuing to utilize the outdated GSA specification as needed until a properly focused and research-based standard on ambulance design is developed by NFPA.**Substantiation:** Minor changes and reformatting of existing ambulance design standards do not address the fundamental need of the ambulance community to have a significantly safer working platform. The current standard does not consider the evolving body of research in ambulance occupant safety crash worthiness. Large amounts of information on this topic are aggregated at: <http://www.objectivesafety.net/PDFArticlesgallery.htm>. Furthermore, the proposed standard complicates ambulance design in the short-term by mostly reformatting the GSA specification with minor changes that also incorporate some elements from the NFPA 1901 Fire Apparatus standard that are marginally applicable. Overall, these changes will not be useful to the ambulance community and may very well delay progress or prevent implementation of an appropriate standard due to the large number of short-term changes. We encourage the NFPA to embrace this opportunity to develop a safety-focused, functionally-based design standard validated by currently available research.**Committee Meeting Action: Reject****Committee Statement:** The submitter provided no specific recommendation.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-28 Log #1259 **Final Action: Reject**
(Chapter 2)**Submitter:** Nadine Levick, EMS Safety Foundation**Recommendation:** Suggest to address all comments made regarding the AMD Standards in the previously submitted public comments made to the AMD to address the following points:

Primary issues:

- An ambulance vehicle is a vehicle that carries passengers – not just freight, and safety standards should address the real safety of those passengers, and reflect accepted current automotive safety science and crash test procedures
- These suggested test protocols in the AMD are outdated and no longer accepted in automotive safety by government regulators, manufacturers or consumer groups (ie IIHS). Such test protocols would provide misleading information that could not be supported by any current accepted automotive safety, occupant protection and crashworthiness science or any principles thereof.
- The complete ABSENCE of any real world injury data applied to the determination of these test protocols
- The complete failure to utilize any dynamic crashworthiness test protocols
- The complete failure to utilize any test protocols that include injury criteria that currently exist for automotive safety testing (such as HIC, neck injury loads, chest decelerations, femur loading etc) government regulated or otherwise
- The lack of meaningful or established approaches to assess injury mitigation strategies as is used routinely in automotive safety
- Lack of reference to current accepted and routine passive structural crashworthiness and occupant protection technologies, such as crumple zones, automotive grade seating, seat belts, seat pretensioners, automotive grade padding and other passive safety technologies
- Test protocols described in this document are not in any way supported by any evidence or referenced scientific or automotive safety literature
- Whilst the test protocols in the document make reference to “minimize the possibility of their failure by forces acting upon them as a result of vehicle

crashes and/or sudden driving maneuvers” – these protocols are based on static tests – which in NO WAY reflect what occurs during a vehicle crash. These are static tests claiming to demonstrate dynamic test outcomes – this is not acceptable and frankly misleading

- International ambulance safety standards all refer to dynamic crashworthiness tests, use of crash test dummies and reflect existing automotive safety science

- Static test protocols do not consider any forces generated as a result of a crash impulse, e.g. inertia forces.

- The static test procedure in the document spreads loads over a large area and thus DO NOT reflect real world impact forces that are dynamic and usually localized to a small area and of a much higher magnitude than a static self weight load can generate.

- The static protocols do not take into consideration occupant kinematic movement and hence possible potentially injurious contact points at highly localized points such as sharp corners, etc.

Thus these protocols do not in any way reflect meaningful or accepted safety tests for occupant protection.

- Testing should be conducted of the fully configured interior vehicle construction with occupants in seating positions with restraints secured and under dynamic impact test conditions.

Substantiation: Relevant References:

1. Kleinburger et al, Injury Criteria for the Assessment of Advanced Automotive Restraint Systems, September 1998
<http://www-nrd.nhtsa.dot.gov/departments/nrd-51/BiomechanicsTrauma.html>
2. Eppinger et al, Development of Improved Injury Criteria for the Assessment of Advanced Automotive Restraint Systems - II, September 1998
<http://www-nrd.nhtsa.dot.gov/departments/nrd-51/BiomechanicsTrauma.html>
3. Eppinger et al, Supplement: Development of Improved Injury Criteria for the Assessment of Advanced Automotive Restraint Systems - II, September 1998
<http://www-nrd.nhtsa.dot.gov/departments/nrd-51/BiomechanicsTrauma.html>

4. Joint Standards Australia/Standards New Zealand Committee ME/48 on Restraint Systems in Vehicles, Standards for Ambulance Restraint Systems, AS/NZS 4535:1999

5. European Ambulance Restraint Systems Standards CEN, European Committee for Standardization, EN1789:2007

6. Levick NR, MD MPH, Grzebieta R, BE MEngSci PhD, Development of Proposed Crash Test Procedures for Ambulance Vehicles, International Enhanced Safety of Vehicles Technical Paper 07-0254, June 2007, <http://www-nrd.nhtsa.dot.gov/pdf/esv/esv20/07-0074-O.pdf>

7. Levick NR, MD MPH, Grzebieta R, BE MEngSci PhD, Crashworthiness Analysis of Three Prototype Ambulance Vehicles, International Enhanced Safety of Vehicles Technical Paper 07-0249, <http://www-nrd.nhtsa.dot.gov/pdf/esv/esv20/07-0249-W.pdf>

8. Levick NR, Emergency Medical Services: Unique Transportation Safety Challenge, Report No. 08-3010, Transportation Research Board, January 2008, www.trb.org

9. Levick NR, MD MPH, Grzebieta R, BE MEngSci PhD, Ambulance vehicle crashworthiness and passive safety design: A comparative vehicle evaluation, Society of Automotive Engineering, ComVec Technical paper, October 2008, 2008-01-2695, www.sae.org

10. Levick NR, MD MPH, Grzebieta R, BE MEngSci PhD, USA Ambulance Crashworthiness Frontal Impact Testing, International Enhanced Safety of Vehicles Technical Paper, 09-0471, June 2009 <http://www-nrd.nhtsa.dot.gov/pdf/esv/esv21/09-0471.pdf>

Committee Meeting Action: Reject

Committee Statement: The submitter provided no specific recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-29 Log #1689 **Final Action: Reject**
(2.1)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: 2.1 General: There is no standard for ride quality.

Substantiation: Problem: Quality or smoothness of ride resulting in patient discomfort and making the delivery of care difficult. Solution / proposal: Develop a test standard for quality of ride. Most modular ambulance bodies weigh significantly less than the rear axle GVW of large Type I chassis. Air Ride suspensions are typically rated for 11,000 + lbs and deliver a violent ride for the technician and patient. A test standard would drive manufacturers to develop a product(s) with variable capacities matched to the planned load.

Committee Meeting Action: Reject

Committee Statement: Valid comment but committee has no current method to describe ride quality and submitter provides no suggestion to consider.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R.,

Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-30 Log #438 **Final Action: Accept**
(2.2)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

2.2 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471, www.NFPA.org.

NFPA 70®, National Electrical, 2008 edition.

NFPA 1901® Standard for Automotive Fire Apparatus

NFPA 1906® Standard for Wildland Fire Apparatus

Substantiation: NFPA 1901 and 1906 are referenced in the annex.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-31 Log #1032 **Final Action: Reject**
(2.3)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: New text to read as follows:

AMD 001 Ambulance Body Structure Static Load Test, 2007

AMD 002 Body Dorr Retention Components Test, 2007

AMD 003 Oxygen Tank Retention System Static Test, 2007

AMD 004 Litter Retention System Static Test, 2007

AMD 006 Patient Compartment Sound Level Test, 2007

AMD 008 Patient Compartment Grab Rail Static Load Test, 2007

AMD 010 Water Spray Test, 2007

AMD 011 Equipment Temperature Test, 2007

AMD 012 Interior Climate Control Test, 2007

AMD 013 WEIGHT DISTRIBUTION TESTING

AMD 014 Engine Cooling System Test, 2007

AMD 015 Ambulance Main Oxygen System Test, 2007

AMD 016 Patient Compartment Lighting Level Test, 2007

AMD 018 Rear Step and Bumper Static Load Test, 2007

AMD 020 FLOOR DISTRIBUTED LOAD TEST

AMD 021 Aspirator System Test, Primary Patient, 2007

AMD 022 Cold Engine Start Test, 2007

AMD 024 Perimeter Illumination Test, 2007

AMD 025 Measuring Guidelines: Occupant Head Clearance Zones, 2007

Substantiation: Necessary testing AMD 020 better describes the requirements needed than ASTM E661.

Formal weight distribution guidelines are established in AMD 013.

Committee Meeting Action: Reject

Committee Statement: No data to substantiate the recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-32 Log #1564 **Final Action: Accept**
(2.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete the reference to ANSI S1.4, *Specification for Sound Level Meters, for Type II Meters, 2006*

Revise the reference to the California Administrative Code to read: Title 13, Chapter 4, Article 8, Sirens

Delete the reference to IPC Publications and IPC-A-610D *Acceptability of Electronic Assemblies, 2005*

Add to ISO Publications: ISO/IEC 17025, General requirements for the competence of testing and calibration laboratories, 2005

Delete the reference to ISO/IEC Guide 65, *General requirements for bodies operating product certification systems, 1996*.

Delete the reference to SAE J541, *Voltage Drop for Starting Motor Circuits, 1996*.

Delete the reference to SAE J560, *Primary and Auxiliary Seven Conductor Electrical Connector for Truck-Trailer Jumper Cable, 2004*.

Add a reference to SAE J576, *Plastic Material or Materials for Use in Optical Parts Such as Lenses and Reflex Reflectors of Motor Vehicle Lighting Devices*, 2010

Delete the reference to SAE J833, *Human Physical Dimensions*, 1989.

Delete the reference to SAE J2180, *A Tilt Table Procedure for Measuring the Static Rollover Threshold for Heavy Trucks*, 1998.

Delete the reference to SAE J2394, *Seven-Conductor Cable for ABS Power — Truck and Bus*, 2007.

Add a reference to UL 498, *Standard for Safety Attachment Plugs and Receptacles*, 2001

Add a reference to UL 153, *Standard for Portable Electric Luminaires*, 2002

Add a reference to UL 1598, *Luminaires*, 2008

Delete the reference to Title 21, Code of Federal Regulations, Part 820: Quality System Regulation.

Delete the reference to Title 29, Code of Federal Regulations, Part 1910.169, "Air receivers." 29 CFR 1910.169.

Delete the reference to Title 29, Code of Federal Regulations, Part 1910.1030: Blood borne Pathogens.

Delete the reference to Title 40, Code of Federal Regulations, Part 86: Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines.

Delete the reference to Title 47, Code of Federal Regulations, Part 90: Public Safety Radio Services (FCC).

Delete the reference to Title 49, Code of Federal Regulations, Part 178.37,

"Specification 3AA and 3AAX, seamless steel cylinders." 49 CFR 178.37.

Delete the reference to Title 49, Code of Federal Regulations, Part 393 Federal Motor Carrier Safety Regulations (FMCSR).

Delete the reference to Title 49, Code of Federal Regulations, Part 567, "Certification." 49 CFR 567.

Delete the reference to Title 49, Code of Federal Regulations, Part 571 Federal Motor Vehicle Safety Standards (FMVSS).

Add a reference to Title 49, Code of Federal Regulations, Part 571, Subpart B, "Federal Motor Vehicle Safety Standards," No. 108. "Lamps, reflective devices, and associated equipment - passenger cars, multipurpose passenger vehicles, trucks, buses, trailers, (except pole trailers and trailer converter dollies), and motorcycles." 49CFR571.108

Add a reference to Title 49, Code of Federal Regulations, Part 571, Subpart B, "Federal Motor Vehicle Safety Standards," No. 206, "Door locks and door retention components - passenger cars, multipurpose passenger vehicles, and trucks," 49CFR571.206.

Add a reference to Title 49, Code of Federal Regulations, Part 571, Subpart B, "Federal Motor Vehicle Safety Standards," No. 208 "Occupant crash protection," 49CFR571.208.

Add a reference to Title 49, Code of Federal Regulations, Part 571, Subpart B, "Federal Motor Vehicle Safety Standards," No. 213 "Child restraint systems - passenger cars, multipurpose passenger vehicles, trucks and buses, and child restraint systems for use in motor vehicles and aircraft", 49CFR571.213.

Add a reference to Title 49, Code of Federal Regulations, Part 571, Subpart B, "Federal Motor Vehicle Safety Standards," No. 302 "Flammability of interior materials - passenger cars, multipurpose passenger vehicles, trucks, and buses," 49CFR571.302.

Delete the reference to GSA Publications, KKK-A 1822F and RR-C-901C/GEN(1).

Delete the reference to U.S. Federal Standards, Standard No. 297, and NHTSA Document Number DOT HS 808 721.

Delete the reference to Military Standards, MIL-STD-461, and MIL-STD-1223.

Delete the reference to American College of Emergency Physicians (ACEP) and Guidelines for Ambulance Equipment.

Delete the reference to National EMSC (Emergency Medical Services for Children) Resource Alliance, and Performance Measures Checklist for Recommended Pediatric Equipment and Supplies for BLS and ALS Ambulances.

Revise the AMECA publication to read: AMECA Compliance Handbook for GSA and SAE Warning Lamp Systems, 2010

Substantiation: The publications being recommended to be deleted are not referenced in the standard. The publications being recommended to be added are referenced in the standard. The other changes are to provide a more accurate reference. Changes to the draft while incorporating accepted proposals may require the committee to make additional revisions.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-33 Log #29 **Final Action: Accept in Part**
(2.3.x)

Submitter: John F. Bender, Underwriters Laboratories Inc.

Recommendation: Add new text to read as follows:

2.3.x UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-

2096, www.UL.com

ANSI/UL 498, *Standard for Safety Attachment Plugs and Receptacles*, 2001, Revised 2010.

ANSI/UL 969, *Standard for Marking and Labeling Systems*, 2006 1995, Revised 2008.

ANSI/UL 2075, *Standard for Gas and Vapor Detectors and Sensors*, 2004, Revised 2007.

Substantiation: Add ANSI/UL 498 as referenced in 8.1.1.5.11 and ANSI/UL 2075 as referenced in proposed revisions to 6.5.2.2. Add ANSI approval designation to ANSI/UL 969 and update referenced standards to most recent edition.

Committee Meeting Action: Accept in Part

Committee Statement: The committee did not accept the reference to ANSI/UL 2075 because the committee deleted the requirement of carbon monoxide detectors.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-34 Log #1033 **Final Action: Reject**
(2.3.x)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete ASTM E661.

Substantiation: Replace with AMD 020 Floor distribution load test.

Committee Meeting Action: Reject

Committee Statement: The submitter has provided no substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-35 Log #1261 **Final Action: Reject**
(2.3.x)

Submitter: Nadine Levick, EMS Safety Foundation

Recommendation: Add new text to read as follows:

2.3.x - SAE, ESV and other Publications

1. Kleinburger et al, *Injury Criteria for the Assessment of Advanced Automotive Restraint Systems*, September 1998

<http://www-nrd.nhtsa.dot.gov/departments/nrd-51/BiomechanicsTrauma.html>

2. Eppinger et al, *Development of Improved Injury Criteria for the Assessment of Advanced Automotive Restraint Systems - II*, September 1998

<http://www-nrd.nhtsa.dot.gov/departments/nrd-51/BiomechanicsTrauma.html>

3. Eppinger et al, *Supplement: Development of Improved Injury Criteria for the Assessment of Advanced Automotive Restraint Systems - II*, September 1998

<http://www-nrd.nhtsa.dot.gov/departments/nrd-51/BiomechanicsTrauma.html>

4. Levick NR, MD MPH, Grzebieta R, BE MEngSci PhD, *Development of Proposed Crash Test Procedures for Ambulance Vehicles*, International Enhanced Safety of Vehicles Technical Paper 07-0254, June 2007, <http://www-nrd.nhtsa.dot.gov/pdf/esv/esv20/07-0074-O.pdf>

5. Levick NR, MD MPH, Grzebieta R, BE MEngSci PhD, *Crashworthiness Analysis of Three Prototype Ambulance Vehicles*, International Enhanced Safety of Vehicles Technical Paper 07-0249, <http://www-nrd.nhtsa.dot.gov/pdf/esv/esv20/07-0249-W.pdf>

6. Levick NR, *Emergency Medical Services: Unique Transportation Safety Challenge*, Report No. 08-3010, Transportation Research Board, January 2008, www.trb.org

7. Levick NR, MD MPH, Grzebieta R, BE MEngSci PhD, *Ambulance vehicle crashworthiness and passive safety design: A comparative vehicle evaluation*, Society of Automotive Engineering, ComVec Technical paper, October 2008, 2008-01-2695, www.sae.org

8. Levick NR, MD MPH, Grzebieta R, BE MEngSci PhD, *USA Ambulance Crashworthiness Frontal Impact Testing*, International Enhanced Safety of Vehicles Technical Paper, 09-0471, June 2009 <http://www-nrd.nhtsa.dot.gov/pdf/esv/esv21/09-0471.pdf>

Substantiation: Suggest to include specific publications in government databases relating to occupant protection and ambulance safety design (see above) in the Reference Section - as there are references to other general government publications in the reference section.

Committee Meeting Action: Reject

Committee Statement: Only references included in the body of the document are cited in the reference section.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-36 Log #1262 **Final Action: Reject**
(2.3.x)

Submitter: Nadine Levick, EMS Safety Foundation

Recommendation: Add new text to read as follows:

2.3.x - International Ambulance Standards

Joint Standards Australia/Standards New Zealand Committee ME/48 on Restraint Systems in Vehicles, Standards for Ambulance Restraint Systems, AS/NZS 4535:1999

European Ambulance Restraint Systems Standards CEN, European Committee for Standardization, EN1789:2007.

Substantiation: Suggest to include International Ambulance Design Standards (see above) in the Reference Section - as there are references to other general international standards in the reference section.

Committee Meeting Action: Reject

Committee Statement: Only references included in the body of the document are cited in the reference section.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-37 Log #1268 **Final Action: Reject**
(2.3.x)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

~~KKK-A 1822F Federal Specification for Ambulances, 2007.~~

Substantiation: The NFPA spec will supersede the KKK spec. Therefore reference to the KKK spec should be deleted.

Committee Meeting Action: Reject

Committee Statement: An assumption on the part of the submitter. No harm in referencing the document.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-38 Log #439 **Final Action: Accept**
(2.3.x (New))

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

2.3.x ISO Publications.

International Standards Organization, 1 rue de Varembe, Case Postale 56, CH-1211 Genève 20, Switzerland, www.standardsinfo.net.

ISO/IEC 17020, *General criteria for the operation of various types of bodies performing inspection*, 1998.

ISO/IEC Guide 65, *General requirements for bodies operating product certification systems*, 1996.

ISO/IEC 17025 *General requirements for the competence of testing and calibration laboratories*

Substantiation: ISO 17025 is referenced in NFPA 1917.

ISO Guide 65 is NOT referenced in NFPA 1917.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-39 Log #1186 **Final Action: Reject**
(3.2.1, 3.2.2)

Submitter: Deborah Thomson, PL Custom Emergency Vehicles

Recommendation: None given.

Substantiation: Definition of “Authority Having Jurisdiction” is too broad and will lead to confusion. NFPA should specify what authority, i.e., State DMV.

Committee Meeting Action: Reject

Committee Statement: AHJ is an official NFPA definition used as a boilerplate definition in all NFPA documents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-40 Log #1565 **Final Action: Accept in Principle**
(3.3.x Substantially Similar Ambulance (New))

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Add appropriate cross references when definitions are grouped under a title or other definition. For example, in the “S” part of the list, add 3.3.XX **Substantially Similar Ambulance**. See 3.3.3.1

Substantiation: The cross reference is to aid the reader in finding the definition. Persons are not going to look in the “A” section for “Substantially Similar Ambulance.”

Committee Meeting Action: Accept in Principle

Committee Statement: Definitions will be un-grouped and then alphabetized. Numbering will be eliminated like NFPA 70, *National Electrical Code*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-41 Log #1263 **Final Action: Reject**
(3.3.2 Acceptance Tests)

Submitter: Nadine Levick, EMS Safety Foundation

Recommendation: Add new text to read as follows:

Consistent with optimal practices and recommendations based on an appropriate and sound review of the technical automotive safety and occupant protection literature and input from automotive engineering expertise skilled in occupant safety and the issues that pertain to safe ambulance practice.

Substantiation: Suggest to include that testing be such that it complies with accepted vehicle occupant protection and safety testing procedures, and conducted by vehicle occupant safety expertise

Committee Meeting Action: Reject

Committee Statement: The submitter provided no specific recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-42 Log #55 **Final Action: Reject**
(3.3.3 Ambulance)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Revise text to read as follows:

3.3.3 Ambulance. A vehicle used for emergency medical care that provides a driver’s compartment; a patient compartment to accommodate an emergency medical services provider (EMSP) and at least one patient located on the primary-eot so positioned that the primary patient(s) can be given intensive life-support during transit; equipment and supplies for emergency care at the scene as well as during transport; safety, comfort, and avoidance of aggravation of the patient’s injury or illness; two-way radio communication; and audible and visual traffic warning devices.

Substantiation: Some ambulances may be configured for multiple patients.

Committee Meeting Action: Reject

Committee Statement: Submitters proposal is out of scope of this standard which is to describe a minimum standard for ambulances.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-43 Log #1244 **Final Action: Accept in Principle**
(3.3.3 Ambulance)

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: Revise text to read as follows:

“...and one patient located on the primary cot so positioned that the primary patient can be given intensive life support (medical care)...”.

Substantiation: This definition would exclude BLS and transport only ambulances.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

3.3.3 Ambulance. A vehicle used for emergency medical care that provides a driver's compartment; a patient compartment to accommodate an emergency medical services provider (EMSP) and one patient located on the primary cot so positioned that the primary patient can be given intensive life support emergency care during transit; equipment and supplies for emergency care at the scene as well as during transport; safety, comfort, and avoidance of aggravation of the patient's injury or illness; two-way radio communication; and audible and visual traffic warning devices.

Committee Statement: This will make the paragraph non exclusive and make the terminology in the paragraph consistent.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-44 Log #1806 **Final Action: Reject**
(3.3.3 Ambulance)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

3.3.3 Ambulance. A vehicle used for emergency medical care that provides a driver's compartment; a patient compartment to accommodate an emergency medical services provider (EMSP) and one patient located on the primary cot so positioned that the primary patient can be given intensive life support during transit; equipment and supplies for emergency care at the scene as well as during transport; safety, comfort, and avoidance of aggravation of the patient's injury or illness; two-way radio communication; and audible and visual traffic warning devices.

A vehicle primarily used for the care and or transportation of the sick and injured.

Substantiation: A much simpler and concise definition. Communication, audible, and visual warning devices are covered separately in this standard, so are not needed to be part of definition. Some ambulances are not used for emergency medical care.

Committee Meeting Action: Reject

Committee Statement: This standard is only applicable to ambulances providing emergency care.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-45 Log #1832 **Final Action: Reject**
(3.3.3 Ambulance)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

3.3.3 Ambulance. A vehicle used for emergency medical care that provides a driver's compartment; a patient compartment to accommodate an emergency medical services provider (EMSP) and one patient located on the primary cot so positioned that the primary patient can be given intensive life support during transit; equipment and supplies for emergency care at the scene as well as during transport; safety, comfort, and avoidance of aggravation of the patient's injury or illness; two-way radio communication; and audible and visual traffic warning devices.

A vehicle primarily used for the care and or transportation of the sick and injured.

Substantiation: A much simpler and concise definition. Communication, audible, and visual warning devices are covered separately in this standard, so

are not needed to be part of definition. Some ambulances are not used for emergency medical care, also differentiates between an ambulance and a vehicle whose primary function is transportation of equipment and or personnel but is capable of carrying a patient if it has to.

Committee Meeting Action: Reject

Committee Statement: This standard is only applicable to ambulances providing emergency care.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-46 Log #CP1 **Final Action: Accept**
(3.3.3.1 Substantially Similar Ambulance)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

3.3.3.1 Substantially Similar Ambulance. An ambulance of the same type and that employs the same chassis make and engine model. The definition of substantially similar must be applied to the test being considered. For chassis related tests, substantially similar refers to an Ambulance with a chassis that employs the same make and engine model. For Patient compartment related tests, substantially similar refers to an ambulance make where the relevant construction methods and configuration are comparable.

Substantiation: The intent is to have a sufficient number of tests to prove the design meets the standard without being an unnecessary burden to the manufacturer. Purchasers wanting a higher level of testing can require it in the contract.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-47 Log #440 **Final Action: Accept in Principle**
(3.3.3.1 Substantially Similar Ambulance)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise definition to read as follows:

3.3.3.1 Substantially Similar Ambulance. An ambulance of the same type (Type I, II, or III), that employs the same chassis make and engine model, and has the same basic patient compartment configuration.

Substantiation: When testing some of the AMD standards (heater and A/C performance) the interior of the patient compartment plays key in the air movement. If the climate control module is moved the compartment may not meet the requirements.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-46 (Log #CP1).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-48 Log #1034 **Final Action: Accept in Principle**
(3.3.3.1 Substantially Similar Ambulance)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text to read as follows:

3.3.3.1 Substantially Similar Ambulance. An ambulance of the same type and that employs the same chassis ~~make and engine model~~

Substantiation: The term substantially similar should not include the engine type.

The engines could be gas of multiple displacement series or diesel powered and still provide similar performance and durability.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-46 (Log #CP1).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-49 Log #1566 **Final Action: Accept in Principle**
(3.3.3.1 through 3.3.3.6 Various)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 3.3.3.1, 3.3.3.2, 3.3.3.4 and 3.3.3.5 as shown. Delete 3.3.3.3 and 3.3.3.6

3.3.3.1 Substantially Similar Ambulance. An ambulance of the same type, and that employs the same chassis make and engine model, and has a curb weight equal to or greater than the unit being manufactured.

3.3.3.2 Type I Ambulance (~~10,001 to 14,000 GVWR~~). An ambulance with A cab and chassis furnished with a modular ambulance body.

3.3.3.4 Type II Ambulance (~~10,000 and Under GVWR~~). An ambulance with a long wheelbase Van, with Integral Cab-Body A van style vehicle with an integral cab and ambulance body.

3.3.3.5 Type III Ambulance (~~10,001 to 14,000 GVWR~~). A vehicle with the rear of the cab cut away and furnished with an An ambulance with a Cutaway Van with integrated modular ambulance body.

Substantiation: 3.3.3.1 is being revised to require the substantially similar ambulance to have a curb weight equal to or greater than the unit being manufactured. Without this change, the tested unit could have a cur weight substantially less than the unit being manufactured and the performance of the manufactured unit could be considerably different.

There is no mention of Type I and Type III AD ambulances and no requirement other than for all Type I and Type III ambulances. Therefore 3.3.3.3 and 3.3.3.6 are not needed.

The changes to the definitions for Type I, Type II, and Type III ambulances are to eliminate the references to GVWR as that is not a factor in the definition or use of the term. Other changes are to improve the definition so it does not say “an ambulance is an ambulance” and to better describe the relationship between the cab and the body.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-46 (Log #CP1) and Proposal 1917-50 (Log #CP2).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-50 Log #CP2 **Final Action: Accept**
(3.3.3.2 Various Definitions)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

3.3.3.2 Type I Ambulance (10,001 lb to 14,000 lb GVWR). An ambulance constructed on a with a cab-chassis furnished with a modular ambulance body.

3.3.3.3 Type I-AD (Additional Duty) Ambulance (14,001 lb GVWR or More). An ambulance constructed on a with a cab-chassis with a modular ambulance body. ; increased GVWR, storage, and payload.

3.3.3.4 Type II Ambulance (~~10,000 and Under GVWR~~). An ambulance constructed on a van. with a long wheelbase Van, with Integral Cab-Body.

3.3.3.5 Type III Ambulance (10,001 lb to 14,000 lb GVWR). An ambulance constructed on a with a cutaway van chassis with integrated modular ambulance body.

3.3.3.6 Type III-AD (Additional Duty) Ambulance (14,001 lb GVWR or More). An ambulance constructed on a with a cutaway van chassis with integrated modular body. ; and increased GVWR, storage, and payload.

Substantiation: Makes the definitions more representative of design and weight, and common in format.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-51 Log #734 **Final Action: Accept in Principle**
(3.3.3.2 Type I Ambulance through 3.3.3.6)

Submitter: Jeffrey A. Pike, Biomechanics Consulting, Inc.

Recommendation: Revise text to read as follows:

3.3.3.2 Type I Ambulance (10,001 to 14,000 lb GVWR).

Substantiation: 3.3.3.2 - 6, should specify units. Also, units needed in 3.3.62, 63.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-50 (Log #CP2).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-52 Log #1807 **Final Action: Reject**
(3.3.3.2 through 3.3.3.6 Various Definitions)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

3.3.3.2 Type I Ambulance (10,001 to ~~14,000~~ 17,000 GVWR). An ambulance with a cab chassis furnished with a modular ambulance body.

3.3.3.3 Type I-AD (Additional Duty) Ambulance (~~14,001~~ 17,001 GVWR or More). An ambulance with a Cab-Chassis with modular ambulance body, increased GVWR, storage, and payload.

3.3.3.4 Type II Ambulance (10,000 and Under GVWR). An ambulance with a long wheelbase Van, with Integral Cab-Body.

3.3.3.5 Type III Ambulance (10,001 to ~~14,000~~ 17,000GVWR). An ambulance with a Cutaway Van with integrated modular ambulance body.

3.3.3.6 Type III-AD (Additional Duty) Ambulance (~~14,001~~ 17,001 GVWR or More). An ambulance with a Cutaway Van with integrated modular body, and increased GVWR, storage, and payload.

Substantiation: Most type III manufactured by Ford have a GVWR of 14,050 and in the 4 x 4 version have a GVRW of 16, 050

Type I-AD and Type III-AD as well as heavy rescue units and squads should have their own standards as their primary purpose is hauling equipment and/or personnel.

Committee Meeting Action: Reject

Committee Statement: Sales history from the AMD of the NTEA shows that a majority of the ambulances produced have a GVWR below 14,000 lb.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: Do not agree with Committee statement AMD reflects E 450 as the largest sale GVW 14, 500.

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-53 Log #1833 **Final Action: Reject**
(3.3.3.2 through 3.3.3.6 Various Definitions)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

3.3.3.2 Type I Ambulance (10,001 to ~~14,000~~ 17,000 GVWR). An ambulance with a cab chassis furnished with a modular ambulance body.

3.3.3.3 Type I-AD (Additional Duty) Ambulance (~~14,001~~ 17,001 GVWR or More). An ambulance with a Cab-Chassis with modular ambulance body, increased GVWR, storage, and payload.

3.3.3.4 Type II Ambulance (10,000 and Under GVWR). An ambulance with a long wheelbase Van, with Integral Cab-Body.

3.3.3.5 Type III Ambulance (10,001 to ~~14,000~~ 17,000GVWR). An ambulance with a Cutaway Van with integrated modular ambulance body.

3.3.3.6 Type III-AD (Additional Duty) Ambulance (~~14,001~~ 17,001 GVWR or More). An ambulance with a Cutaway Van with integrated modular body, and increased GVWR, storage, and payload.

Substantiation: Most type III manufactured by Ford have a GVWR of 14,050 and in the 4 x 4 version have a GVRW of 16, 050

Type I-AD and Type III-AD as well as heavy rescue units and squads should have their own standards as their primary purpose is hauling equipment and/or personnel

Committee Meeting Action: Reject

Committee Statement: Sales history from the AMD of the NTEA show that a majority of the ambulances produced have a GVWR below 14,000 lb.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: Do not agree with Committee statement AMD reflects E 450 as the largest sale GVW 14, 500.

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-54 Log #1035 **Final Action: Accept in Principle**
(3.3.3.4 Type II Ambulance (10,000 and under GVWR))

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text to read as follows:

3.3.3.4 Type II Ambulance (10,000 and Under GVWR). An ambulance with a long wheelbase Van, with Integral Cab-Body. CONSTRUCTED ON A VAN STYLE BODY WITH AN INTEGRATED CAB DESIGN.

Substantiation: The term long-wheelbase is subjective, to define long as a measurement or delete the word “long” and rephrase the sentence.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-50 (Log #CP2).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-55 Log #1036 **Final Action: Accept in Principle**
(3.3.3.5 Type III Ambulance (10,000 to 14,000 GVWR))

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: New text to read as follows:

3.3.3.5 Type III Ambulance (10,001 to 14,000 GWR), An ambulance with a Cutaway Van CHASSIS with integrated modular ambulance body.

Substantiation: The sentence was missing the word (Chassis) after cutaway van.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-50 (Log #CP2).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-56 Log #1037 **Final Action: Accept in Principle**
(3.3.3.8 Type III-AD (Additional Duty) Ambulance (14,001 GVWR or More))

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: New text to read as follows:

3.3.3.6 Type III-AD (additional Duty) Ambulance (14,001 GVWR or More). An ambulance with a Cutaway Van CHASSIS with integrated modular body, and increased GVWR, storage, and payload.

Substantiation: The sentence is missing the word (chassis) after cutaway van.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-50 (Log #CP2).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-57 Log #1217 **Final Action: Reject**
(3.3.6 Bonded (Bonding))

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

3.3.6 Bonded (Bonding). Connected to establish electrical continuity and conductivity In accordance with accepted Automotive industry standards.

Substantiation: There are numerous ways to bond electrical connections, not all of them good, by using an accepted industry standards you have continuity of methods and as bonding methods are accepted by the Automotive industry, they become acceptable for use in Ambulance Manufacturing.

Committee Meeting Action: Reject

Committee Statement: This definition is from NFPA 70, National Electrical Code, 2011 edition. Reference will be added in 1917.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-58 Log #1808 **Final Action: Reject**
(3.3.9 Chassis)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

3.3.9 Chassis. ~~The basic operating motor vehicle including the engine, frame, and other essential structural and Mechanical parts, but exclusive of the body and all appurtenances for the accommodation of driver, property, Passengers, appliances, or equipment related to other than control. Common usage might, but need not, include a cab (Or cowl). The basic operating motor vehicle as it came from the vehicle manufacturer.~~

Substantiation: Less wordy and still understandable.

Committee Meeting Action: Reject

Committee Statement: Current wording is consistent with NFPA 1901, *Standard for Automotive Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-59 Log #1834 **Final Action: Reject**
(3.3.9 Chassis)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

3.3.9 Chassis. ~~The basic operating motor vehicle including the engine, frame, and other essential structural and Mechanical parts, but exclusive of the body and all appurtenances for the accommodation of driver, property, Passengers, appliances, or equipment related to other than control. Common usage might, but need not, include a cab (Or cowl). The basic operating motor vehicle as it came from the vehicle manufacturer.~~

Substantiation: Less wordy and still understandable.

Committee Meeting Action: Reject

Committee Statement: Current wording is consistent with NFPA 1901, *Standard for Automotive Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-60 Log #1245 **Final Action: Accept**
(3.3.10.2 Patient Compt)

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: Revise text to read as follows:

The portion of the ambulance aft (behind) the cab.

Substantiation: Make it consistent with wording in sections 3.3.10.2.1 through 3.3.10.2.3.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-61 Log #1567 **Final Action: Reject**
(3.3.10.2.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 3.3.10.2.3.

Substantiation: The term is not used in the standard and it is defined exactly the same as Type I Patient Compartment.

Committee Meeting Action: Reject

Committee Statement: Definitions as stated serve the purpose of the standard by defining the patient compartment “space”.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

**1917-62 Log #1246 Final Action: Reject
(3.3.12 Continuous Duty)**

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: None given.

Substantiation: This is an ambiguous and open-ended definition.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

**1917-63 Log #62 Final Action: Accept
(3.3.25 GCWR)**

Submitter: William von Zehle, Jr., Wilton Emergency Medical Services

Recommendation: Delete paragraph.

Substantiation: The definition 'GCWR' is not required in this standard as tractor-trailer ambulances are not presently manufactured as Class I, II or III types covered in the proposed standard.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

**1917-64 Log #1038 Final Action: Accept in Principle
(3.3.25 GCWR)**

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text to read as follows:

3.3.25*GCWR—See 3.3.63.2 Gross Combination Weight Rating.

Substantiation: Unnecessary definition—no ambulances are to be used as tow vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-63 (Log #62).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

**1917-65 Log #1568 Final Action: Accept in Principle
(3.3.2, 3.3.63.2 Gross Combination Weight Rating and A.3.3.25)**

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 3.3.25, 3.3.63.2 and A.3.3.25.

Substantiation: The term "Gross Combination Weight Rating" is not used in the standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-63 (Log #62).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

**1917-66 Log #441 Final Action: Reject
(3.3.36 Line Voltage Circuit, Equipment, or System)**

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise definition to read as follows:

3.3.36 Line Voltage Circuit, Equipment, or System. An ac or dc electrical circuit, equipment, or system where the voltage to ground or from line is

30 V rms (ac), 42.4 V peak (ac), or 60 V dc; or greater.

An Alternating Current (AC) electrical circuit, equipment, or system where the voltage to ground or voltage to Neutral is 120V AC or greater.

Substantiation: I don't understand what the crossed out portion is. I think this proposed is what is needed.

Committee Meeting Action: Reject

Committee Statement: Current wording is consistent with NFPA 1901, *Standard for Automotive Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

**1917-67 Log #1569 Final Action: Accept
(3.3.37 Total Continuous Electrical Load)**

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 3.3.37 and 3.3.37.1. Move 3.3.37.2 to the appropriate alphabetical place for "Total Continuous Electrical Load."

Substantiation: This definition for live load deals with aerial devices and is not appropriate in this standard. Deleting that definition leaves no reason to have a title only number and puts the term and definition at 3.3.37.2 in a more appropriate location.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

**1917-68 Log #1188 Final Action: Accept in Principle
(3.3.37 Live Load)**

Submitter: Deborah Thomson, PL Custom Emergency Vehicles

Recommendation: None given.

Substantiation: Live Load - refers to Aerial Device and is not applicable to Ambulance - Should be deleted.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-67 (Log #1569).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

**1917-69 Log #3 Final Action: Accept in Principle
(3.3.37.1 Live Load)**

Submitter: Dan O'Brien, Malley Industries, Inc.

Recommendation: Delete section in its entirety.

Substantiation: Not aware of aerial devices mounted on an ambulance.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-67 (Log #1569).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

**1917-70 Log #1039 Final Action: Accept in Principle
(3.3.37.1 Live Load)**

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text to read as follows:

3.3.37.1 Live Load. Forces acting on the aerial device from personnel, portable equipment, water, and nozzle

Substantiation: This is fire truck verbiage, does not apply to the ambulance spec.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-67 (Log #1569).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-71 Log #1269 **Final Action: Accept in Principle**
(3.3.37.1 Live Load)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

~~3.3.37 Load-~~

~~3.3.37.1 Live Load:~~ Forces acting on the aerial device from personnel, portable equipment, water, and nozzle reaction.

Substantiation: Aerial devices are generally not relevant to ambulances.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-67 (Log #1569).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-72 Log #1427 **Final Action: Accept**
(3.3.37.2 Total Continuous Electrical Load)

Submitter: Michael S. Wolfe, Plainfield Fire Territory

Recommendation: Delete such as primers and booster reel rewind motors.

This type of wording is not relevant to ground ambulances. This refers to fire based equipment.

Substantiation: This document should be for general EMS equipment. Giving examples of fire based equipment confuses the document. The document should be written for EMS ground ambulances not fire based ground ambulances.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-73 Log #225 **Final Action: Accept in Principle**
(3.3.37.2 Total Continuous Electrical Load)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Revise text to read as follows:

3.3.37.2 Total Continuous Electrical Load. The total current required to operate all of the devices permanently connected to the ambulance that can be simultaneously energized, ~~excluding intermittent type loads such as primers and booster reel rewind motors.~~

Substantiation: Delete section marked because those items are not used on Ambulances. Primers are used to remove air from centrifugal pumps to draw water into it. Booster reels are/were used to fight fires.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-72 (Log #1427).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-74 Log #1040 **Final Action: Accept in Principle**
(3.3.37.2 Total Continuous Electrical Load)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text to read as follows:

3.3.37.2 Total Continuous Electrical Load. The total current required to operate all of the devices permanently connected to the ambulance that can be simultaneously energized ~~excluding intermittent-type loads such as primers and~~

~~booster reel rewind motors.~~

Substantiation: Does not apply to ambulances.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-72 (Log #1427).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-75 Log #1247 **Final Action: Reject**
(3.3.44 Panelboard)

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: Revise text to read as follows:

~~; and accessible only from the front.~~

Substantiation: This is unclear. Not sure what to suggest because I don't fully understand the intent of this portion.

Committee Meeting Action: Reject

Committee Statement: Current wording matches NFPA 70, *National Electrical Code*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-76 Log #918 **Final Action: Reject**
(3.3.45 Patient Cot)

Submitter: Kenneth Beym, New Jersey Department of Health and Senior Services / Rep. Office of Emergency Medical Services

Recommendation: Revise text to read as follows:

3.3.45 Patient Cot. The cot, gurney, stretcher or litter upon which the primary patient is transported.

Substantiation: The proposed statement does not use the term stretcher to describe the patient cot. The term stretcher is commonly synonymous and relatively descriptive when referring to the patient cot. The medical community is familiar with this term and application.

Committee Meeting Action: Reject

Committee Statement: Patient cot and stretcher are different items.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-77 Log #1392 **Final Action: Accept**
(3.3.45 Patient Cot)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise definition to read as follows:

3.3.45 Patient Cot. ~~The cot, gurney or litter. Also known as a transporter, gurney, and carrier is an elevating patient conveyance device upon which the primary patient is transported.~~

Substantiation: More clear definition of patient cot versus stretcher.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-78 Log #1248 **Final Action: Reject**
(3.3.57 Rear Entry Door)

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: Add new text to read as follows:

3.3.57 Rear Entry Door. The body door(s) on the rear of the ambulance that provides entry into the patient compartment and through which patients may be loaded/unloaded.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-79 Log #1393 **Final Action: Accept**
(3.3.58 Stretcher (New))

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Add definition to read as follows:

3.3.58 Stretcher. Also known as a litter or flat, A non-elevating transportation device designed to transport a supine patient.

Substantiation: No definition of stretcher existed on the proposed draft standard.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-80 Log #1249 **Final Action: Reject**
(3.3.59 Striker)

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: Add new text to read as follows:

A mechanical device with which the (exterior compartment door or entry door) latch engages...

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-81 Log #CP7 **Final Action: Accept**
(3.3.62 Usable Payload, Loose Equipment, 4.13, 4.17.13, 5.1, 5.2, 5.11)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

3.3.62.2 Estimated In-Service Weight. The amount that the ambulance manufacturer estimates the ambulance will weigh when it is placed in service with all fixed and portable equipment installed, all tanks full, and all personnel seating positions occupied.

3.3.62.3 In-Service Weight. The maximum actual vehicle weight under any conditions of mobile operation, sometimes referred to as gross vehicle weight.
3.3.xxxx Usable Payload. Usable payload is the weight of the loose equipment, occupants, and cot as defined by NFPA 1917 Standard for Automotive Ambulances, 2013 Edition that can be carried in this ambulance without exceeding the GVWR

3.3.xxxx Loose Equipment. Equipment other than the occupants and the cot that is intended to be stored on the ambulance. Such equipment may include, but not be limited to, medicines, first aid supplies, oxygen tanks, child seats, and personal dunnage.

4.13 Roadability.

4.13.1 The ambulance, when loaded to its GVWR estimated in-service weight, shall be capable of the following performance while on dry, paved roads that are in good condition.

4.17.3 Certification and Payload Signage.

4.17.3.1* All ambulances shall have a certification and payload label as shown in Figure 4.17.3.1.

4.17.3.2 The label shall be mounted on the body (module) interior in a conspicuous location.

4.17.4.1* 4.17.3.3 The complete payload calculation in Figure 4.17.3.1 shall be provided with the ambulance in accordance with 4.17.3.

4.17.3.3 All text in Figure 4.17.3.1 shall be included on the certification and payload label.

Ambulance Data	
Manufactured By _____	Mo./Yr. _____
Address _____	
City _____	State _____ Zip _____
VIN _____	Job No. _____
Chassis Model _____	Statement of Exception Applies _____
Vehicle Type _____	Usable Payload (lbs)* _____
<p>This ambulance is certified by the manufacturer to conform to the edition of NFPA 1917 Standard for Automotive Ambulance in effect on the date the ambulance as contracted for subject to any applicable statement of exception as mandated by this standard.</p> <p>*Usable payload is the weight of the loose equipment, occupants, and cot as defined by NFPA 1917 Standard for Automotive Ambulances that can be carried in this ambulance without exceeding the GVWR.</p>	

Figure 4.17.3.1 Certification and Payload Label

4.17.4 Payload Calculation Form.

4.17.4.1* The completed payload calculation form in Figure 4.17.4.1 shall be provided in accordance with 4.17.3.

4.17.4.2 All text shown in Figure 4.17.4.1 shall be included.

Final Stage Ambulance Manufacturer's Name: _____

OEM Chassis Year, Make, Model: _____

1) Ambulance Model, Type, Prod. #: _____

2) OEM GAWR — Front: _____ lb (kg) 3) OEM GAWR — Rear: _____

lb (kg) 4) OEM GVWR: _____ lb (kg) 5) Minimum Payload: _____

lb (kg) 6) Curb Weight — AS BUILT — Front Axle: _____ lb

(kg) 7) Curb Weight — AS BUILT — Rear Axle: _____ lb (kg) 8) Total

Curb Weight — AS BUILT: _____ lb (kg) 9) CUSTOMER USABLE Total

Payload AS BUILT (item 4 minus item 8): _____ lb (kg) 10) CUSTOMER

USABLE Front Axle Payload AS BUILT (item 2 minus item 6): _____ lb

(kg) 11) Total Weight of Permanently mounted Options Specified (only required

if item 9 does not meet or exceed item 5): _____

lb (kg) 12) Payload of Basic Vehicle (item 9 plus item 11) (only

required if item 9 does not meet or exceed item 5): _____

lb (kg)

FIGURE 4.17.4.1 Payload Calculation Form.**5.1 Carrying Capacity.**

5.1.1 The manufacturer shall establish the estimated in-service weight required GVWR during the design of the ambulance using the method and values specified in table 5.1.1.

5.1.2 The estimated in-service weight shall include the following:

(1) The chassis and body

(2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs

(3) Equipment load prescribed by the purchaser

(4) 171 lb (78 kg) in each designated seating position

(5) 171 lb (78 kg) to account for patient

(6) Patient cot

(7) 200 lb (91 kg) spare capacity

Table 5.1.1 Required GVWR Calculation			
Component		Weight (lbs)	
Chassis			
Ambulance body complete			
Fluids (fuel, lubricants, etc...)			
Permanently mounted equipment			
Loose Equipment (Use one of these values unless the required loose equipment is specified by the purchaser)	Type I	750	
	Type I-AD	1250	
	Type II	500	
	Type III	750	
	Type III-AD	1250	
Belted occupant seating positions	(No. Seats) x	171	
Cot patient		171	
Cot	Standard Cot	100	
	Power Cot	150	
Spare capacity		200	
Minimum GVWR Required			

5.1.3 5.1.2 The manufacturer shall design the ambulance such that the completed ambulance, when loaded to its required GVWR estimated in-service weight, with all loose equipment movable weights distributed as close as is practical to its their intended in-service configuration, does not exceed the GVWR or GAWRs of the chassis.

5.2* Weight Distribution.

5.2.1 Longitudinal Weight Distribution.

5.2.1.1 When the ambulance is loaded to its GVWR estimated in-service weight, the front-to-rear weight distribution and vertical center of gravity shall be within the limits set by the chassis manufacturer.

5.2.1.2 The front GAWR shall be not less than 20 percent of the GVWR.

5.2.1.3 The rear GAWR shall be not less than 50 percent of the GVWR.

5.2.2* Lateral Weight Distribution.

The vehicle, when loaded to its GVWR estimated in-service weight, shall have a side-to-side tire load variation of no more than 5 percent of the total tire load for that axle.

5.2.3 The front axle loads shall not be less than the minimum axle loads specified by the chassis manufacturer under full load and all other loading conditions.

5.2.4 Vehicle and component ratings shall be the manufacturer's published ratings and shall not be modified without written authorization from the OEM.

5.2.5 The manufacturer shall design the ambulance to comply with the gross axle weight ratings (GAWR), the overall gross vehicle weight rating (GVWR), and the chassis manufacturer's load balance guidelines.

5.11.2.8 Rear Stepping Surface

5.11.2.8.1 The rear stepping surface shall withstand a load of 500 lb (227 kg) with no more than 1.0 in. (25.4 mm) of deflection nor more than 0.25 in. (6.4 mm) of permanent deformation.

5.11.2.9 The height of the rear step shall not exceed 22 in. (559 mm) with the vehicle loaded to its GVWR estimated in-service weight and/or the suspension in the kneeling condition.

Substantiation: There was confusion between the use of the term estimated in-service weight and GVWR. This proposal clears up this confusion, simplifies the calculation of the required GVWR, and simplifies the label.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-82 Log #1041 **Final Action:** Reject
(3.3.62.2 Estimated In-Service Weight)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text to read as follows:

3.3.62.2 Estimated In-Service Weight. The amount that the ambulance manufacturer estimates the ambulance will weight when it is placed in service with all fixed and portable equipment installed, all tanks full, and all personnel

seating positions occupied. The actual weight of vehicle as constructed, calculated with the allocations for equipment and personnel as prescribed in 5.1.2.

Substantiation: Ambulance manufacturer has no ability to ascertain or validate "equipment load prescribed by purchaser". A calculation for the number of occupants on board plus an allowance for equipment needed on the various types of ambulances would be more useful.

Committee Meeting Action: Reject

Committee Statement: This wording is common with NFPA 1901, *Standard for Automotive Fire Apparatus* and 1906, *Standard for Wildland Fire Apparatus*. The committee feels that the processes and requirements for ensuring that all NFPA requirements are met should be the same between all emergency vehicles.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: I agree with the log. Amb manufacturer cannot validate loads. Because it matches 1901 is not the reason to accept.

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-83 Log #442 **Final Action:** Reject
(3.3.62.3 In-Service Weight)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revision definition to read as follows:

3.3.62.3 In-Service Weight. The maximum actual vehicle weight under any conditions of mobile operation, sometimes referred to as gross vehicle weight. See "Gross Vehicle Weight Rating".

Substantiation: The proposed change makes it less confusing while reading through standard.

Committee Meeting Action: Reject

Committee Statement: This wording is common with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*. The committee feels that the processes and requirements for ensuring that all NFPA requirements are met should be the same between all emergency vehicles.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-84 Log #1042 **Final Action: Reject**
(3.3.63.1 Gross Axle Weight Rating (GAWR))

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

3.3.63.1* Gross Axle Weight Rating (GAWR). The CHASSIS MANUFACTURER'S final stage manufacturer's specified maximum load-carrying capacity of an axle system, as measured at the tire-ground interfaces. **Substantiation:** The axle rating is determined by the chassis manufacturer not the final stage manufacturer.

Committee Meeting Action: Reject

Committee Statement: The final stage manufacturer determines this.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-85 Log #1043 **Final Action: Accept in Principle**
(3.3.63.2 Gross Combination Weight Rating (GCWR))

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text to read as follows:

3.3.63.2* Gross Combination Weight Rating (GCWR). The final stage manufacturer's specified maximum loaded weight for a combination (articulated) vehicle consisting of a tow vehicle and one or more towed units. **Substantiation:** Unnecessary definition—no ambulances are to be used as tow vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-63 (Log #62).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-86 Log #1044 **Final Action: Reject**
(3.3.63.3 Gross Vehicle Weight Rating (GVWR))

Submitter: Randy A. Hanson, American Emergency Vehicles

Ronald W. Thackery, American Medical Response, Inc. (Log #577)

Recommendation: Revised text to read as follows:

3.3.63.3* Gross Vehicle Weight Rating (GVWR). The CHASSIS MANUFACTURER'S final stage manufacturer's specified maximum load-carrying capacity of a single vehicle.

Substantiation: The final stage manufacturer specifies the maximum load carrying capacity of a single vehicle.

Committee Meeting Action: Reject

Committee Statement: The final stage manufacturer determines this.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-87 Log #933 **Final Action: Reject**
(3.15.2 Fire Extinguisher Requirement)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: KKK-A-1822F 3.15.2 requires the ambulance conversion manufacturer to supply at least two, minimum 5lb. ABC fire extinguishers, one accessible from outside the vehicle and one in the patient compartment (and similar to the Colorado regulatory requirement). This was omitted from the NFPA draft document.

Substantiation: Despite the multiple sections of the proposed standard intended to reduce the possibility of fire in an ambulance. The robust electrical system, high operating temperatures, and use of compressed oxygen may increase the chance of vehicle fire <http://www.autosafety.org/ford-ambulancevan-fuel-fed-fires>. It is also reasonable to assume that ambulances, much like law enforcement vehicles, may come across small fires in the normal course of operations. As many jurisdictions rely on the GSA standard to address non-medical equipment requirements, it is reasonable to carry this requirement forward into the proposed standard.

Committee Meeting Action: Reject

Committee Statement: This standard does not set minimum requirements for loose equipment.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-88 Log #947 **Final Action: Reject**
(3.15.2 Fire Extinguisher Requirement)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: KKK-A-1822F 3.15.2 requires the ambulance conversion manufacturer to supply at least two, minimum 5lb. ABC fire extinguishers, one accessible from outside the vehicle and one in the patient compartment (and similar to the Colorado regulatory requirement). This was omitted from the NFPA draft document.

Substantiation: Despite the multiple sections of the proposed standard intended to reduce the possibility of fire in an ambulance. The robust electrical system, high operating temperatures, and use of compressed oxygen may increase the chance of vehicle fire <http://www.autosafety.org/ford-ambulancevan-fuel-fed-fires>. It is also reasonable to assume that ambulances, much like law enforcement vehicles, may come across small fires in the normal course of operations. As many jurisdictions rely on the GSA standard to address non-medical equipment requirements, it is reasonable to carry this requirement forward into the proposed standard.

Committee Meeting Action: Reject

Committee Statement: This standard does not set minimum requirements for loose equipment.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-89 Log #955 **Final Action: Reject**
(Chapter 4)

Submitter: Kevin Sullivan, Town of Enfield - EMS Division

Recommendation: I would like to see a requirement that ambulances operating or potentially operating at the ALS level have a way to temperature controlled cabinet systems to maintain medications at a stable temperature regardless of ambient temperature.

Substantiation: Maintaining meds at a constant and stable temperature is a real concern for ALS level providers. Having a requirement for this type of cabinet will make it easier to justify the inclusion of this into new units. Virtually every ALS level service I know of is trying to figure out a way to keep fluids cool for hypothermia protocols. Those of us in colder climates are also trying to figure out how to keep other meds warm in the winter. When units are not running, but left outside, it would be really helpful to have shore-line connected options in this area.

Committee Meeting Action: Reject

Committee Statement: The submitter did not provide a specific recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-90 Log #1570 **Final Action: Reject**
(4.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4.1 to read as follows:

4.1 General. The AH ambulances and its components shall be designed, manufactured, tested, and certified to meet or exceed the requirements of this standard, comply with the following chapters:

(1) Chapter 1, "Administration"

(2) Chapter 2, "Referenced Publications"

(3) Chapter 3, "Definitions"

(4) Chapter 4, "General Requirements"

(5) Chapter 5, "Chassis"

(6) Chapter 6, "Body"

(7) Chapter 7, "Low Voltage Electrical Systems and Warning Devices"

(8) Chapter 8, "Line Voltage Electrical Systems"

(9) Chapter 9, "Testing"

Substantiation: There is no need for a list of the chapters as the list is all inclusive. The revised wording provides a general requirement that the ambulance as designed, manufactured, tested, and certified meet or exceed the requirements of the standard.

Committee Meeting Action: Reject

Committee Statement: The text as written is consistent with 1901, *Standard for Automotive Fire Apparatus*, and provides a convenient list of the chapters. If optional chapters are added in the future it would need to be recreated.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-91 Log #27 **Final Action: Reject**
(4.1, 4.10, 4.13.3, and 4.13.4)

Submitter: Bill Florea, Nodaway County Ambulance District

Recommendation: Delete and add the following text:

4.10 Vehicle Data Recorder:

4.10.1 All ambulances shall be equipped with an on-board vehicle data recorder (VDR):

4.10.2 The VDR shall be capable of recording the data shown in Table 4.10.2 in that order at least once per second:

Table 4.10.2 VDR Data

Data Unit of Measure

Vehicle speed mph

Acceleration (from speedometer) mph/sec

Deceleration (from speedometer) mph/sec

Engine speed rpm

Engine throttle % of full throttle

Anti-lock braking system event On/off

Seat occupied status Occupied: Yes/No by position

Seat belt status Buckled: Yes/No by position

Master optical warning device switch On/off

Time 24-hour clock

Date Year/month/day

4.10.3 Data shall be stored at the sampling rate in a 48-hour loop:

4.10.4 Memory shall be sufficient to record 100 engine hours' worth of minute-by-minute summary showing the data in Table 4.10.4:

Table 4.10.4 VDR Summary Data

Data Unit of Measure

Maximum vehicle speed mph

Maximum acceleration (from speedometer) mph/sec

Maximum deceleration (from speedometer) mph/sec

Maximum engine speed rpm

Maximum engine throttle position % of full throttle

Anti-lock braking system event On/off

Time 24-hour clock

Date Year/month/day

4.10.5 When the memory capacity is reached, the system shall erase the oldest data first:

4.10.6 All data stored in the VDR shall be uploadable by the user to a computer and importable into a data management software package:

4.10.7 Data shall be password-protected with access controlled by the purchaser:

4.10.8 Software shall be delivered with the ambulance that will run on both Windows® and Apple® operating systems and produce the following formatted reports from the uploaded data:

(1) Raw second-by-second data over a specified data/time range

(2) Daily log for the time the engine is running for a given date (minute-by-minute output of all values)

(3) Weekly summary (maximum values each day for each day of the month)

(4) Monthly summary (maximum values each day for each day of the month)

4.1.3.3 The maximum top speed of the ambulance shall not exceed either 85 mph (137 km/hr) ~~72 mph (116 km/hr)~~ or the manufacturer's maximum service speed rating for the tires installed on the ambulance whichever is lower.

4.13.4* The ambulance shall be capable of a sustained speed of not less than 65 mph (105 km/hr) over dry, hard surfaced, level roads, at sea level, and passing speeds of 85 mph (137 km/hr) ~~70 mph (112 km/hr)~~ when tested under normal ambient conditions.

Substantiation: 4.1 Vehicle Data Recorder; should be removed all together.

The economics of providing ambulance service is challenged enough with adding yet more unfunded mandates. This will only provide data for studies after the fact. This will not have an immediate impact on safety or patient care. Medicare is cutting funding for ambulance services.

4.13.3 Is too slow for rural ambulances, these are not fire trucks, there are several hospital to hospital. This was the speed when Ford came out with the diesel chassis for their ambulance prep package in 1988. We literally had people passing our ambulances on the interstate with the lights and siren activated.

4.13.4 Is too slow for rural ambulances, these are not fire trucks, there are several hospital to hospital. This was the speed when Ford came out with the diesel chassis for their ambulance prep package in 1988. We literally had people passing our ambulances on the interstate with the lights and siren activated.

Committee Meeting Action: Reject

Committee Statement: The recommended text is impossible since the speed can't both be at least 85 mph and no more than 85 mph at the same time.

The VDR issue is dealt with on other comments.

Too many suggestions on the same log.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: The rational is correct. the log suggests max speed with correct tires and passing speed must not exceed 85 mph. suggestions are within scope.

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-92 Log #323 **Final Action: Reject**
(4.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Responsibility of the Purchaser:

Substantiation: The purchaser is aware of their responsibilities, requirements, needs and constraints. Vehicle application & usage will be the driving element for the choice of chassis, payload, design and other specifications, which need not be standardized.

Committee Meeting Action: Reject

Committee Statement: This is typical for this type of standard to clearly define the responsibility of both the purchaser and the contractor.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-93 Log #1571 **Final Action: Reject**
(4.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete Section 4.2 Responsibility of the Purchaser.

Substantiation: The intent of this document is to define the design, performance and testing requirements for an ambulance regardless of whether that ambulance is built to a specific purchaser's requirements or as a demonstrator or stock unit. 4.2.1 and 4.2.2 are procurement issues, not minimum requirements. Paragraph 4.2.3 is outside the scope of the document. There are other NFPA documents that are responsible for ongoing training of

personnel in the proper and safe use of emergency vehicles.

If the committee wants to provide advice on purchasing an ambulance, it can do so in an Annex.

Committee Meeting Action: Reject

Committee Statement: This is typical for this type of standard to clearly define the responsibility of both the purchaser and the contractor.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-94 Log #639 **Final Action: Reject**
(4.2.1)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Add new text to read as follows:

Guide line for payload Type II 1,500 lbs, Type I & III 1,500 lbs and Type I AD & III AD 2,250 lbs.

Substantiation: Add guide lines for pay load as listed in current KKK-A-1822F. The vast majority of the buyers do not have the back ground or working knowledge of GVWR, GAWR, UVWR and what they mean and what can be expected of current chassis limitations.

Committee Meeting Action: Reject

Committee Statement: Committee does not feel that the seat requirements can be combined since the cab seats are typically provided with the chassis.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-95 Log #56 **Final Action: Reject**
(4.2.3)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Delete text to read as follows:

~~4.2.3 After acceptance of the ambulance, the purchaser shall be responsible for ongoing training of personnel to develop and maintain proficiency regarding the proper and safe use of the ambulance and the associated equipment.~~

Substantiation: This Is an agency policy not a vehicle standard

Committee Meeting Action: Reject

Committee Statement: This is typical for this type of standard to clearly define the responsibility of both the purchaser and the contractor.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-96 Log #569 **Final Action: Reject**
(4.2.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~After acceptance of the ambulance, the purchaser shall be responsible for ongoing training of personnel to develop and maintain proficiency regarding the proper and safe use of the ambulance and the associated equipment.~~

Substantiation: The purchaser is aware of their responsibilities, requirements, needs and constraints. Vehicle application & usage will be the driving element for the choice of chassis, payload, design and other specifications, which need not be standardized. A vehicle design standard has no ability to provide enforcement for a training requirement.

Committee Meeting Action: Reject

Committee Statement: This is typical for this type of standard to clearly define the responsibility of both the purchaser and the contractor.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-97 Log #1190 **Final Action: Reject**
(4.2.3)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

~~After acceptance of the ambulance, the purchaser shall be responsible for ongoing training of personnel to develop and maintain proficiency regarding the proper and safe use of the ambulance and the associated equipment.~~

Substantiation: The purchaser is aware of their responsibilities, requirements, needs and constraints. Vehicle application & usage will be the driving element for the choice of chassis, payload, design and other specifications, which need not be standardized.

Committee Meeting Action: Reject

Committee Statement: This is typical for this type of standard to clearly define the responsibility of both the purchaser and the contractor.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-98 Log #1572 **Final Action: Reject**
(4.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete Section 4.3 Responsibility of the Contractor.

Substantiation: This section is all procurement and contract information and does not belong in the body of this standard. Section 4.17 lists what the contractor needs to provide for information. The details of the ambulance listed in this section should be included in section 4.17. While some may argue that the purchaser needs to know what they are buying, and thus the need for this information, there is no time defined when this information is to be provided and the required information is very incomplete to make a purchase decision. This is sales brochure type information. Paragraph 4.3.2 is a legal issue that is part of the contract for purchase and is outside the control of this document.

Committee Meeting Action: Reject

Committee Statement: This is typical for this type of standard to clearly define the responsibility of both the purchaser and the contractor.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-99 Log #4 **Final Action: Reject**
(4.3.1.1)

Submitter: Dan O'Brien, Malley Industries, Inc.

Recommendation: Revise text to read as follows:

~~"...not be limited to, minimum maximum usable payload..."~~

Substantiation: It is far more important to be aware of the maximum usable payload rather than the minimum.

Committee Meeting Action: Reject

Committee Statement: The Contractor is giving the purchaser a guaranteed minimum payload. The maximum will depend on how the manufacturing variables come out.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-100 Log #324 **Final Action: Reject**
(4.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

4.4 Ambulance Components:

Substantiation: The proposed standard is redundant; all vehicles must comply with Federal Motor Vehicle Safety Standards (FMVSS) and states. With respect to medical devices the FDA is the regulating body of the Federal Government. The NFPA should not compound requirements for regulatory oversight by redundantly including them in these provisions.

Committee Meeting Action: Reject

Committee Statement: Do not wish to delete the entire section. Substantiation does not cover everything the submitter is suggesting we delete.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-101 Log #443 **Final Action: Reject**
(4.4)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

4.4 Ambulance Components.

4.4.1 All components shall be installed in accordance with the applicable manufacturer's installation instructions.

4.4.1.1 Construction of vehicle or installation of components should not hinder/interfere with the ambulatory personnel's ability to perform life rendering services.

4.4.1.2 Projections, sharp corners, or obstacles that could present snagging location for clothing or equipment or dangerous impact location to the head should be avoided

Substantiation: Adding this text will add safety to the patient compartment and the outside perimeter of the vehicle.

Committee Meeting Action: Reject

Committee Statement: The committee does not know how to quantify the recommendations.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-102 Log #1218 **Final Action: Accept in Principle**
(4.4.1)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

All components shall be installed in accordance with the manufacturer's installation instructions, or with the written approval of the manufacturer.

Substantiation: Often times instructions are meant for use by lay persons without technical expertise, so the instructions are written to cover the majority of installations. Since there may be no engineering reason why a given apparatus can't be installed differently, having the manufacturer approve the installation in writing, is perfectly acceptable.

Committee Meeting Action: Accept in Principle

Replace with following text:

4.4.1 All components shall be installed in accordance with the manufacturer's installation instructions, or with the written approval of the component manufacturer.

Committee Statement: The committee clarified that it is the component manufacturer that is providing approval and not the ambulance manufacturer.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-103 Log #1219 **Final Action: Reject**
(4.4.2)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

4.4.2 The emergency medical care vehicles; including chassis, ambulance body, equipment, devices, medical accessories, and electronic equipment shall be standard commercial products, that have been tested and certified by the Manufacturer to meet or exceed the requirements of this standard.

Substantiation: Since many of the Ambulance Manufacturer's use the same chassis, ambulance body, equipment, devices, medical accessories, and electronic equipment, having the items tested by the entity having Engineering Control of the design, will ensure that all of the certifications are uniform.

Committee Meeting Action: Reject

Committee Statement: Testing need not be performed by the manufacturer, it may be conducted by third parties.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-104 Log #1573 **Final Action: Accept**
(4.4.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 4.4.2.

Substantiation: This precludes the use of custom chassis which is design restrictive. Also the standard should not change terminology to "emergency medical care vehicles." "Equipment, devices, medical accessories, and electronic equipment" are ambiguous terms.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-105 Log #1574 **Final Action: Accept in Principle**
(4.4.4)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4.4.4 to read:

Vehicles shall be free from defects that may impair their reliability or serviceability or detract from appearance.

Substantiation: The standard should define the requirements necessary for an ambulance to be reliable and serviceable. Defects in appearance are contract issues that are difficult to evaluate as to whether they and do not affect reliability and serviceability so are beyond the scope of the standard.

Committee Meeting Action: Accept in Principle

Revise 4.4.4 to read as follows:

4.4.4 Vehicles shall be free from defects that may impair their reliability or serviceability or detract from appearance.

Committee Statement: The committee deleted text referring to defects that detract from appearance.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-106 Log #445 **Final Action: Accept in Principle**
(4.6.11)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

4.6.11 The testing facility for each certification shall supply the following supportive verification data and information on letterhead stationery in electronic format (pdf files):

- (1) For whom tested
- (2) Report date

- (3) Name of sample product or device
 (4) Contractor's address
 (5) Serial and model number(s)
 (6) Specification referral and amendment number(s), and test requirement(s)
 (7) Test facilities used and location
 (8) Test equipment used
 (9) Test procedure
 (10) Test results
 (11) Verifying test data
 (xx) Drawings (annex - Drawings of the vehicle structure verified to the vehicle tested for any structural testing. Drawings to include material sizes, thicknesses, welds, fasteners, adhesive coverage, etc... of the critical regions that would be established as "minimums" for the respective location and function served.) Detailed drawings of custom parts manufactured by the contractor that are used to comply with the requirements of Chapter 9 (AMD standards) or meet FMVSS requirements.
 (12) Photographs
 (13) Test conclusion(s)
 (14) Witness(es)
 (15) Authorized signature

Substantiation: Drawings are critical to the structure. The ambulance must be built with the same "technique" on every unit. If the "technique" is changed, the ambulance structure may be compromised therefore ruling the report invalid.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-107 Log #744 **Final Action: Reject**
 (4.4.5)

Submitter: John J. Russell, Cape County Private Ambulance Service, Inc.

Recommendation: Delete the following text:

~~All bodies, systems, equipment, and interfaces with the chassis shall be done in accordance with the OEM Body Builders Book.~~

Substantiation: The proposed standard is redundant, all vehicles must comply with Federal Motor Vehicle Safety Standards (FMVSS) and State Agencies. We also believe that these are provided by Chassis Manufacturers in accord with all existing regulatory requirements. To the best of my knowledge only 2 chassis manufacturers have a specific "Builders Book" with an aftermarket builder certification program. I.E. Ford and Daimler-Benz

Committee Meeting Action: Reject

Committee Statement: Submitter is incorrect in the substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-108 Log #1575 **Final Action: Accept in Principle**
 (4.4.5)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 4.4.5.

Substantiation: The purpose of this document is to set the standard for the manufacture of an ambulance. Paragraph 4.4.5 defers to the OEM to set the standard by requiring him to use his body builder book.

Committee Meeting Action: Accept in Principle

Revise 4.4.5 to read as follows:

4.4.5 All bodies, systems, equipment and interfaces with the chassis not otherwise specified in this standard shall be done in accordance with the Chassis OEM Body Builders Guidelines.

Committee Statement: The committee agrees that this document is setting the standard for all items addressed by this document, but where this document does not address an item the final stage manufacturer is required to follow the OEM chassis manufacturer's guidelines.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-109 Log #325 **Final Action: Accept in Principle**
 (4.5)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Legal Requirements. The ambulance shall comply with the following:~~

~~(1) Applicable Federal Motor Vehicle Safety Standards (FMVSS)~~

~~(2) State regulations as specified by the purchaser~~

Substantiation: The proposed standard is redundant; all vehicles must comply with Federal Motor Vehicle Safety Standards (FMVSS) and states.

Committee Meeting Action: Accept in Principle

Revise 4.5 to read as follows:

4.5 Legal Requirements. The ambulance shall comply with the following:

(1) Applicable Federal Regulations Motor Vehicle Safety Standards (FMVSS)

(2) State regulations as specified by the purchaser

Committee Statement: The committee deleted the reference to FMVSS, because there may be other federal regulations which are applicable to motor vehicles and this standard should include all federally required regulations.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-110 Log #1576 **Final Action: Accept in Principle**
 (4.5)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4.5 to read as follows:

4.5 Legal Requirements. The ambulance shall comply with all applicable federal and state or provincial laws and regulations, the following:

~~(1) Applicable Federal Motor Vehicle Safety Standards (FMVSS)~~

~~(2) State regulations as specified by the purchaser~~

Substantiation: The ambulance needs to comply with all applicable state or provincial laws and regulations whether specified by the purchaser or not. Also it needs to comply with all applicable federal laws and regulations, not just the FMVSS. As written it sounds like the manufacturer or the purchaser can choose not to comply with some laws. The revised wording is more encompassing.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-109 (Log #325).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-111 Log #CP26 **Final Action: Accept**
 (4.5)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

4.5 Legal Requirements. The ambulance shall comply with the following:

(1) Applicable Federal Regulations Motor Vehicle Safety Standards (FMVSS)

(2) State regulations as specified by the purchaser

Substantiation: State regulations are too varied to expect the manufacturer to know them all.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-112 Log #326 **Final Action: Reject**
(4.6)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Third-Party Certification of Test Results. Where this standard requires the witnessing or performing of tests by an independent third-party organization, that organization shall meet the requirements of this section.

Substantiation: There is a lack of current scientific testing data to support that the certification process enhances engineering, structure, safety or efficiency. Until all of those elements can be satisfied this section should be deleted.

Committee Meeting Action: Reject

Committee Statement: Submitter provides unsubstantiated statements.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-113 Log #446 **Final Action: Reject**
(4.6)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

4.6.7 Programs shall be in place for training, proficiency testing, and performance verification of any staff involved with certification.

4.6.x Test reports shall comply with the requirements set forth in ISO/IEC 17025

Substantiation: Standardization of test reports.

Committee Meeting Action: Reject

Committee Statement: This standard applies to specific tests. Should not appear in these general specifications.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-114 Log #1015 **Final Action: Reject**
(4.6)

Submitter: David Schimmel, Wayne Memorial First Aid Squad

Recommendation: Revise text to read as follows:

4.6 Third-Party Certification of test Results. Where this standard requires the witnessing or performing of tests by an independent third-part organization, that organization shall meet the requirement of this section. Testing shall be per design not per unit.

Substantiation: If the intent is to make this per unit that would add unnecessary cost. A manufacturer should submit a basic design and that design should be tested and approved.

Committee Meeting Action: Reject

Committee Statement: The standard already points out when a test is per unit and when it can be performed on a substantially similar unit.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-115 Log #1587 **Final Action: Reject**
(4.6)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4.6 to read as follows:

4.6 Third-Party Certification of Test Results. Where this standard requires the witnessing or performing results of tests to be certified by an independent third-party organization, that organization shall meet the requirements of this section.

Revise 4.6.1 to read as follows:

4.6.1 All testing unique to this standard other than those outlined in AMD Standards shall be witnessed or performed certification shall be performed by a certification organization that is accredited for inspection and testing systems on of ambulances in accordance with ISO/IEC 17020, General criteria for the

operation of various types of bodies performing inspection or ISO/IEC Guide 65, General requirements for bodies operating product certification systems.

Substantiation: Section 4.6 should focus on the requirements for the third-party certification organization and what is to be certified should be stated as a requirement at the appropriate section where the requirement that is being certified is stated. Also ISO/IEC Guide 65 may be appropriate for some certification bodies.

4.6.1 should deal with certification, not witnessing or performing tests.

Committee Meeting Action: Reject

Committee Statement: Guide 65 is too broad for this standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-116 Log #444 **Final Action: Accept in Principle**
(4.6.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

4.6.1 All testing unique to this standard other than those outlined in AMD Standards shall be witnessed or performed by an organization that is accredited for inspection of ambulances in accordance with ISO/IEC 17020, General Criteria For The Operation Of Various Types Of Bodies Performing Inspection, or ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories.

Substantiation: 17025 Testing staff should be present for testing.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-117 Log #1176 **Final Action: Reject**
(4.6.1)

Submitter: Rodd Lehman, ACC Climate Control

Recommendation: Revise text to read as follows:

4.6.1 All testing unique to this standard other than those outlined in AMD Standards and FMVSS shall be witnessed or performed by an organization that is accredited for inspection of ambulances in accordance with ISO/IEC 17020, General Criteria for the Operation of Various Types of Bodies Performing Inspection or performed by an organization that is accredited in accordance with ISO/IEC 17025.

Substantiation: ISO/IEC 17020 is for inspection. ISO/IEC 17025 is for testing. Revising this wording would allow for ISO/IEC 17020 to monitor testing performed by FSAM or allow ISO/IEC 17025 to perform by FSAM or allow ISO/IEC 17025 to perform testing, particularly in the case where testing is done by the supplier.

Committee Meeting Action: Reject

Committee Statement: FMVSS requirements can be certified by the manufacturer.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-118 Log #1191 **Final Action: Reject**
(4.6.1)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

All testing unique to this standard other than those outlined in AMD Standards shall be witnessed or performed by an organization that is accredited for inspection of ambulances in accordance with ISO/IEC 17020, General Criteria For The Operation Of Various Types Of Bodies Performing Inspection.

Substantiation: There is a lack of current scientific testing data to support that the certification process enhances engineering, structure, safety or efficiency. Until all of those elements can be satisfied this section should be deleted

Committee Meeting Action: Reject

Committee Statement: Submitter provides unsubstantiated statements.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

COLE, D.: I accept this comment. the cost of testing is increased - what is the cost benefit to the end user. Does this provide a better and safer ambulance?

1917-119 Log #1270 **Final Action: Accept in Principle**
(4.6.1)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

4.6.1 All testing unique to this standard other than those outlined in AMD Standards shall be witnessed or performed by an organization that is accredited for inspection of ambulances in accordance with ISO/IEC 17020, *General Criteria For The Operation Of Various Types Of Bodies Performing Inspection or ISO/IEC Guide 65, General requirements for bodies operating product certification systems.*

Substantiation: The value of ambulance testing with independent oversight is not questioned. However, it is not clear that the additional expense of ISO/IEC 17020 accreditation is justified.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-120 Log #640 **Final Action: Reject**
(4.6.2)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Delete the following text:

~~4.6.2 The certification organization shall not be owned or controlled by manufacturers or vendors of the product that is being tested.~~

Substantiation: In 4.6.1 you require the lab being ISO/IEC and if that lab/manufacturer meets that requirement why then are we limiting their work. Siren, lighting, seat belt, and chassis manufacturers do most or all testing in house.

Committee Meeting Action: Reject

Committee Statement: Committee desires third party certification to ensure compliance.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-121 Log #1177 **Final Action: Accept**
(4.6.2)

Submitter: Rodd Lehman, ACC Climate Control

Recommendation: Revise text to read as follows:

4.6.2 The certification organization shall not be owned or controlled by manufacturers or vendors of the product that is being tested the Final Stage Ambulance Manufacturer.

Substantiation: This would conflict with pass through testing done by vendors with Accredited Testing Facilities. For Example; Siren Manufacturers, Chassis Manufacturers, HVAC Manufacturers, HVAC Manufacturers, Failure to make this change will significantly drive up the cost of testing.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-122 Log #1493 **Final Action: Accept in Principle**
(4.6.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

~~The certification organization shall not be owned or controlled by manufacturers or vendors of the product that is being tested. The Ambulance Manufacturer can not be the owner or controller of the test facilities.~~

Substantiation: If the lab is already being required to be ISO accredited, and not owned by an ambulance manufacturer, it should preclude conflict of interest issues with testing of components and sub-systems. Otherwise, this would seem to preclude pass through compliance from vendors.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-121 (Log #1177).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-123 Log #641 **Final Action: Accept**
(4.6.3)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Delete the following text:

~~4.6.3 The certification organization shall be primarily engaged in certification work and shall not have a monetary interest in the product's ultimate profitability.~~

Substantiation: In 4.6.1 you require the lab being ISO/IEC and if that lab/manufacturer meets that requirement why then are we limiting their work. Siren, lighting, seat belt, and chassis manufacturers do most or all testing in house.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-124 Log #1494 **Final Action: Accept in Principle**
(4.6.3)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Delete text to read as follows:

~~The certification organization shall be primarily engaged in certification work and shall not have a monetary interest in the product's ultimate profitability.~~

Substantiation: If the lab is already being required to be ISO accredited, and not owned by an ambulance manufacturer, it should preclude conflict of interest issues with testing of components and sub-systems. Otherwise, this would seem to preclude pass through compliance from vendors.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-123 (Log #641).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-125 Log #1178 **Final Action: Reject**
(4.6.5)

Submitter: Rodd Lehman, ACC Climate Control

Recommendation: Delete text as follows:

~~4.6.5 There shall be no conditional, temporary, or partial certification of test results.~~

Substantiation: Unclear, appears to be redundant to 4.6.4.

Committee Meeting Action: Reject

Committee Statement: Committee does not want to allow these practices as stated.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-126 Log #1264 **Final Action: Reject**
(4.6.9)

Submitter: Nadine Levick, EMS Safety Foundation

Recommendation: Add new text to read as follows:

An appropriate accredited testing organization for conducting technical automotive safety and occupant protection testing with automotive engineering expertise skilled in occupant safety and automotive occupant biomechanics.

Substantiation: Suggest to include that testing be such that it complies with accepted vehicle occupant protection and safety testing procedures, and conducted by vehicle occupant safety expertise.

Committee Meeting Action: Reject

Committee Statement: Committee is using ISO standards to dictate qualifications. Suggested text is vague wording not allowed by NFPA manual of style. Definition of “acceptable” is not specific enough.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-127 Log #1588 **Final Action: Reject**
(4.6.9)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4.6.9.1 to be a separate section to read as follows:

4.7 Accredited Organizations for Testing Laboratory. ~~4.6.9.1~~ All testing specified by the AMD Standards incorporated by reference in this standard shall be witnessed or performed by an organization that is accredited for inspection of ambulances including electrical systems on those ambulances in accordance with an ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories and accredited laboratory that is recognized by a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA).
Delete 4.6.9.2.

Add ISO/IEC 17025:2005 to chapter 2.

Substantiation: Paragraph 4.6.9.1 does not belong in the section on certification as there are no certification requirements, just witnessing or performing tests. If the committee intends the test results of the AMD tests to be certified, it has not stated that in the draft.
The requirement stated in 4.6.9.2 has been incorporated in the wording for the new 4.7.

See also separate proposal for 9.2.7.2.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-128 Log #1593 **Final Action: Reject**
(4.6.9, 4.6.10 and 4.6.11)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Clarify what is being tested and what is being certified. The word “certified” and “certification” seem to be used without a clear requirement for something to be certified. There is a difference between testing something and certifying something.

Substantiation: Current text is very confusing as to what is required to be tested and what is required to be certified and by whom.

Committee Meeting Action: Reject

Committee Statement: The submitter provided a general opinion with no specific suggestion for change.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-129 Log #75 **Final Action: Reject**
(4.6.9.1)

Submitter: David B. Cole, Life Line Emergency Vehicles

Recommendation: Revise text to read as follows:

4.6.9.1 All testing specified by AMD Standards shall be witnessed or performed by an organization that is accredited for inspection of ambulances in accordance with an ISO/IEC 17025 accredited laboratory that is recognized by a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA).

Substantiation: The standard excludes labs that are able to provide correct standard testing. Why is NFPA 1917 attempting to eliminate certain labs from the process. Does ISO/IEC 17025 mean that the Lab is the best lab to test Ambulances? As we are an organization that is still establishing test standards, why is it correct to delete other labs?

Committee Meeting Action: Reject

Committee Statement: Any lab can obtain specified certification so the standard is not eliminating labs, only requiring them to meet minimum level of certification to ensure that the work will be performed properly.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: As stated - the added cost benefit is in question. How many labs will be available to test.

Does this provide a safer ambulance?

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-130 Log #1179 **Final Action: Accept in Principle**
(4.6.9.1)

Submitter: Rodd Lehman, ACC Climate Control

Recommendation: Revise text to read as follows:

4.6.9.1 All testing specified as required by AMD Standards or FMVSS shall be witnessed or performed by an organization that is accredited for inspection testing of ambulances in accordance with an ISO/IEC 17025 accredited laboratory that is recognized by a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA).

Substantiation: Rewording clarifies testing, as required, as not all testing in this document must necessarily be completed by a 17025 lab. Also corrects the terminology from Inspections to Testing as likely intended.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-131 Log #1185 **Final Action: Reject**
(4.6.9.1)

Submitter: Deborah Thomson, PL Custom Emergency Vehicles

Recommendation: None given.

Substantiation: States that testing can only be done by accredited organization. This contradicts 4.7.3 which states that as a manufacturer we need to have necessary testing facilities. We object as conforming to both 4.6.9.1 & 4.7.3 will be unnecessarily costly.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: Does this contradict the items. Cost Benefit
Maybe the committee needs to make a recommendation?

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-132 Log #1271 **Final Action: Accept in Principle**
(4.6.9.1)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

4.6.9.1 All testing specified by AMD Standards shall be witnessed or performed by an organization that is accredited for inspection of ambulances in accordance with ISO/IEC Guide 65, General requirements for bodies operating product certification systems or an ISO/IEC 17025 accredited laboratory that is recognized by a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA).

Substantiation: The value of ambulance testing with independent oversight is not questioned. However, it is not clear that the additional expense of ISO/IEC 17020 accreditation is justified.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-133 Log #1394 **Final Action: Reject**
(4.6.9.1.1 (New))

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Add text to read as follows:

4.6.9.1.1 Testing of ancillary ambulance equipment may be performed by the equipment manufacturer in accordance with Section 4.7.

Substantiation: Third party dynamic crash testing is not economically feasible for every piece of equipment carried in the back of ambulance. Self-testing and certification will enable companies to offer full ranges of products aimed to meet the varying regional and regulatory needs of the ambulatory market.

Committee Meeting Action: Reject

Committee Statement: Only seat and cab designs are tested dynamically therefore the submitter's comment is not valid.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-134 Log #1180 **Final Action: Reject**
(4.6.9.2)

Submitter: Rodd Lehman, ACC Climate Control

Recommendation: Revise text to read as follows:

4.6.9.2 The scope of accreditation shall include all tests ~~outlined by Chapter 9~~ as required by this document.

Substantiation: Covers AMD, FMVSS, and other required tests as required throughout the entire document not only chapter 9.

Committee Meeting Action: Reject

Committee Statement: Wording suggested by the submitter does not meet the intent of the committee.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-135 Log #1181 **Final Action: Accept in Principle**
(4.6.9.2)

Submitter: Ryan Hoover, IMMI/Cape

Recommendation: Add new text to read as follows:

If required, the scope of accreditation shall include those tests being performed by the testing organization.

Substantiation: A typical laboratory that performs electrical tests outlined by Chapter 9 usually does not also perform vehicle crash or structural tests. Therefore, maintaining the aforementioned scope of accreditation as outlined

by Chapter 9 should not be a requirement for a test organization to perform work per this standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-136 Log #1589 **Final Action: Accept in Principle**
(4.6.10)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4.6.10 to read as follows:

4.6.10 Certification letters submitted for the ambulance model, components, and equipment being certified shall contain the following information on contractor's letterhead stationery in electronic format (pdf files): The third-party that certifies any test results shall supply the following information on the certification organization letterhead as a pdf file(s):

(1) Company or business the results are being certified for ~~To whom certifying~~

(2) Date of certification

(3) Ambulance model, components, or equipment being certified

(3) Units or items

(4) Certification organization ~~Contractor~~ and address

(5) Date product tested

(6) Model number and specification data

(7) Applicable specification references and test requirement

(8) Summary of the test report

(9) A certifying statement with official signature

Substantiation: The change makes it clear that certain information is required to be submitted by the certifying organization, uses the term "certification organization" rather than "contractor" to avoid misunderstanding with the use of the term contractor elsewhere in the document, and clarifies what is meant by "units or items".

Committee Meeting Action: Accept in Principle

Revise to read as follows:

~~**4.6.10**~~ **4.6.9** The third-party that certifies any test results shall supply the following information on the certification organization letterhead:

(1) Company or business the results are being certified for

(2) Date of certification

(3) Ambulance model, components, or equipment being certified

(4) Certification organization and address

(5) Date product tested

(6) Model number and specification data

(7) Applicable specification references and test requirement

(8) Summary of the test report

(9) A certifying statement with official signature

Committee Statement: The committee did not want to limit to only PDF files as an electronic format.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-137 Log #1590 **Final Action: Accept in Principle**
(4.6.11)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4-6.11 to read as follows:

4.6.11 The testing facility that conducts the testing for any each certification shall supply the following supportive verification data and information on the testing facility's letterhead stationery as a pdf file(s) in electronic format (pdf files):

(1) Certification organization the product is being tested for ~~For whom tested~~

(2) Report date

(3) Name of sample product or device

(4) Testing facility's Contractor's address

(5) Serial and model number(s) of product tested

(6) Specification referral and amendment number(s), and test requirement(s)

(7) Test facilities used and location

- (8) Test equipment used
- (9) Test procedure
- (10) Test results
- (11) Verifying test data
- (12) Photographs
- (13) Test conclusion(s)
- (14) Witness(es)
- (15) Authorized signature

Substantiation: The change makes it clear that certain information is required to be submitted by the testing organization, uses the term “certification organization” rather than “for whom tested” to avoid misunderstanding, and uses the term “testing facility” rather than contractor to avoid confusion with the use of the term contractor elsewhere in the document.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-138 Log #327 **Final Action: Reject**
(4.7)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Manufacturer Certification of Test Results. Where this standard requires the results of tests or the performance of a component to be certified by the manufacturer, the manufacturer shall meet the requirements of this section.~~

Substantiation: There is a lack of current scientific testing data to support that the certification process enhances engineering, structure, safety or efficiency. Until all of those elements can be satisfied this section should be deleted.

Committee Meeting Action: Reject

Committee Statement: No supporting evidence to substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-139 Log #642 **Final Action: Accept in Principle**
(4.7)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Add new text to read as follows:

4.7 Certification of Test Results by Manufacturer:

Substantiation: Makes statement clear as to purpose.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action in Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-140 Log #1495 **Final Action: Accept in Principle**
(4.7)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

~~4.7 Manufacturer Certification of Test Results by the manufacturer.~~ Where this standard requires the results of tests or the performance of a component to be certified by the manufacturer, the manufacturer shall meet the requirements of this section.

Substantiation: Minor revision for clarification.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action in 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-141 Log #1265 **Final Action: Reject**
(4.8)

Submitter: Nadine Levick, EMS Safety Foundation

Recommendation: Add new text to read as follows:

Safety design based on preventing injury mechanisms sustained by ambulance vehicle occupants. Including vehicle design to protect occupants, absorb energy and prevent intrusion and non-hostile surfaces in potential head strike zones, and effective equipment restraint systems.

Substantiation: Suggest to include that safety of occupants be guided by designs that will prevent injuries to all occupants - personnel, patients and other occupants. Safety is part of a system. Suggest to include designs preventing potential injuries sustained by these people during loading and unloading, during transit, or any sudden acceleration or deceleration, or in the event of a crash, consistent with accepted occupant protection practice and existing international ambulance vehicle standards.

Committee Meeting Action: Reject

Committee Statement: Recommended text does not describe any concrete requirement.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-142 Log #1362 **Final Action: Reject**
(4.8.2)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Electrical insulation or isolation shall be provided where necessary in order to prevent electrical shock from onboard electrical systems.

Substantiation: This needs to be clarified to state that circuits either need to be touch safe, tool safe, or enclosed. Is this for high voltage, low voltage or both? The term isolation is too ambiguous.

Committee Meeting Action: Reject

Committee Statement: This wording is common with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*. The committee feels that this wording has been understood for many years without question and should be the same between all emergency vehicles.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-143 Log #1496 **Final Action: Accept in Principle**
(4.9.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

~~4.9.1 Illumination shall be provided for controls, switches, instruction plates, labels, gauges, and instruments necessary for the operation of the ambulance and the equipment provided on it.~~

Substantiation: “Illumination” typically involves backlighting. Plates and labels should instead be reflective.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

~~4.9.1 Illumination shall be provided for controls, switches, instruction plates, labels, gauges, and instruments necessary for the operation of the ambulance and the equipment provided on it.~~

Committee Statement: The committee included action taken from 1917-144 (Log #1580) because requirements for such equipment are beyond the scope of this document.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-144 Log #1580 Final Action: Accept in Principle (4.9.1)**Submitter:** Carl E. Peterson, Hingham, MA**Recommendation:** Revise 4.9.1 to read as follows:

4.9.1 Illumination shall be provided for controls, switches, instruction plates, labels, gauges, and instruments necessary for the operation of the ambulance and the equipment permanently installed provided on it.

Substantiation: Portable equipment carried on the ambulance often has controls, switches, instruction plates, labels, gauges, and instruments that cannot be illuminated. Besides, requirements for such equipment are beyond the scope of this document.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-143 (Log #1496).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-145 Log #447 Final Action: Accept (4.9.2)**Submitter:** Andrew J. Alger, Progressive Engineering Inc.**Recommendation:** Revise text to read as follows:

4.9.2* All required signs, instruction plates, and labels shall be permanent in nature ~~and~~, securely attached, and shall meet the requirements of 4.9.4 ASTM D5010 - Standard Guide for Testing Printing Inks and Related Materials and UL 969, *Standard for Marking and Labeling Systems*.

4.9.2.1 The signs, instruction plates, and labels shall be resistant to the following:

- (1) Fluids to which they will normally be exposed
- (2) Temperatures between -30°F and 176°F (-35°C and 80°C)
- (3) Ultra violet radiation

Substantiation: Section 4.9.4 is not found in document. ASTM D5010 is a standard method for testing color fade on labels/printed material to be used in section 4.9.2.1(3).

Committee Meeting Action: Accept**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-146 Log #1045 Final Action: Accept in Principle (4.9.2)**Submitter:** Randy A. Hanson, American Emergency Vehicles**Recommendation:** Delete text to read as follows:

4.9.2* All required signs, instruction plates, and labels shall be permanent in nature and securely attached and shall meet the requirements of 4.9.4 and UL 969, *Standard for Marking and Labeling Systems*.

Substantiation: Passage 4.9.4 does not appear in this text.**Committee Meeting Action: Accept in Principle****Committee Statement:** See committee action on Proposal 1917-145 (Log #447).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-147 Log #1577 Final Action: Accept in Principle (4.9.2)**Submitter:** Carl E. Peterson, Hingham, MA**Recommendation:** Revise 4.9.2 to read as follows:

4.9.2* All required signs, instruction plates, and labels shall be permanent in nature and securely attached and shall meet the requirements of 4.9.2.1 and

4.9.2.2 4.9.4 and UL 969, *Standard for Marking and Labeling Systems*.

Substantiation: There is no 4.9.4. I believe the committee intended to reference the 2 paragraphs that follow 4.9.2.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-145 (Log #447).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-148 Log #1184 Final Action: Reject (4.9.2.1)**Submitter:** Deborah Thomson, PL Custom Emergency Vehicles**Recommendation:** None given.

Substantiation: Signs, Instruction Plates, & Labels need to be resistant to fluids, temperatures, & ultraviolet radiation. Problem is that not all Signs, Instruction Plates, & Labels need this sort of resistant. Request that these requirements be location and requirement specific. A label in the engine compartment would require fluid & temperature resistance, while a label on the exterior needs to be ultra violet resistant.

Committee Meeting Action: Reject**Committee Statement:** It would be impossible to anticipate all the labels on an ambulance by location. Standard as written ensures label permanency regardless of location.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-149 Log #1579 Final Action: Accept (4.9.2.1)**Submitter:** Carl E. Peterson, Hingham, MA**Recommendation:** Revise 4.9.2.1 to read as follows:

4.9.2.1 The signs, instruction plates, and labels shall be resistant to damage from the following:

Substantiation: Editorial to improve understanding of the requirement.**Committee Meeting Action: Accept****Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-150 Log #1497 Final Action: Reject (4.9.2.2)**Submitter:** Steve Spata, AMD Technical Committee & National Truck Equipment Association**Recommendation:** Revise text to read as follows:

4.9.2.2 The exterior mounted labels relating to safety or critical operational instructions shall be reflective or illuminated.

Substantiation: "Illumination" typically involves backlighting. Plates and labels should instead be reflective.

Committee Meeting Action: Reject**Committee Statement:** Nothing wrong with providing the option of illumination. If instructions are back-lit or illuminated they should not need to be reflective.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-151 Log #1581 Final Action: Reject (4.9.2.2)**Submitter:** Carl E. Peterson, Hingham, MA**Recommendation:** Revise 4.9.2.2 to read as follows:

4.9.2.2 The exterior mounted labels relating to safety or critical operational instructions shall be reflective or illuminated.

Substantiation: Paragraph 4.9.1 requires instruction plates to be illuminated so this creates a conflict by allowing them to be reflective.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-143 (Log #1496).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-152 Log #450 **Final Action: Reject**
(4.9.2.3)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

4.9.2.3.1 Controls and switches that are expected to be operated by the belted driver while the ambulance is in motion shall be visible and meet the requirements of 4.9.2.3.3.

4.9.2.3.2 Controls and switches that are expected to be operated by the belted EMSP while the ambulance is in motion shall be visible and meet the requirements of 4.9.2.3.3, within reach of the designated Primary Patient Care Position.

4.9.2.3.3 Viewing the designated seat from the top, the controls and switches must be located within a 30" radius of the centered h-point in the designated seating position.

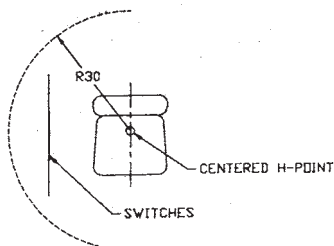


Figure 4.9.2.3.3

Substantiation: We need a definition of “within reach”.

Committee Meeting Action: Reject

Committee Statement: Submitter makes a good point but the final solution has not had enough attention by the committee. NIOSH is performing testing that may help to provide guidance. Hold for next revision cycle.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-153 Log #57 **Final Action: Reject**
(4.9.2.3.1)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Revise text to read as follows:

4.9.2.3.1 Controls and switches that are expected to be operated by the belted driver while the ambulance is in motion shall be visible and within reach. The position of controls and switches shall be able to be determined by touch as well as sight.

Substantiation: The old rocker switch always allowed the driver to tell by touch the position of the switch. This will allow operation by the driver without diverting attention from the road.

Committee Meeting Action: Reject

Committee Statement: This is a minimum standard. Purchaser can specify if desired.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-154 Log #1498 **Final Action: Reject**
(4.9.2.3.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

4.9.2.3.1* Controls and switches that are expected to be operated by the belted driver while the ambulance is in motion shall be visible and within reach.

Substantiation: Recommend adding an annex item to bring up potential for non-compliance to FMVSS 101.

Committee Meeting Action: Reject

Committee Statement: The submitter makes no specific recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-155 Log #1395 **Final Action: Reject**
(4.9.2.3.3 (New))

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Add text to read as follows:

4.9.2.3.3: Controls and switches shall be rated to IP54 (IEC 60529 International Standards) or greater.

Substantiation: This allows switches to be wiped clean with an appropriate disinfectant and do not incorporate cavities where bacteria can accumulate.

Committee Meeting Action: Reject

Committee Statement: Submitter makes a good point but the final solution has not had enough attention or time by the committee. The committee will consider this for next revision cycle.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: This is a good comment. Why cant the committee accept this for the betterment of the standard!

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-156 Log #1396 **Final Action: Reject**
(4.9.2.3.4 (New))

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Add text to read as follows:

4.3.2.3.4: Controls and switches shall be resistant to fluids to which they are normally exposed (i.e. cleaning chemicals, water, disinfectants, bodily fluids, blood, etc.)

Substantiation: Reduce risk of corrosion or performance degradation when exposed to environmental fluids/chemicals.

Committee Meeting Action: Reject

Committee Statement: Submitter makes a good point but the final solution has not had enough attention or time by the committee. The committee will consider this for next revision cycle.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-157 Log #1397 **Final Action: Reject**
(4.9.2.3.5 (New))

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Add text to read as follows:

4.9.2.3.5: Controls and switches shall not contain cavities where bacteria can accumulate behind touch surfaces. Controls and switches shall be cleanable with disinfectant wipes.

Substantiation: Prevents pathogens from accumulating on touch surfaces, as a

measure of prevention against the spread of disease.

Committee Meeting Action: Reject

Committee Statement: Submitter makes a good point but the final solution has not had enough attention or time by the committee. The committee will consider this for next revision cycle.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-158 Log #1272 **Final Action:** Accept
(4.9.2.6)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

4.9.2.6 The identifications shall be contrasting colors etched or engraved in plastic or metal, or printed and laminated in ~~see-through translucent~~ plastic, and grouped according to function, and mounted in illuminated or backlit panel(s) or the console.

Substantiation: See-through plastic would create problems due to light shining into the operators' eyes. Moreover, we do not want to be able to see through the label to the light source and/or wiring behind the panel.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-159 Log #1578 **Final Action:** Accept
(4.9.2.3.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4.9.2.3.2 to read as follows:

4.9.2.3.2 Controls and switches that are expected to be operated by the belted emergency medical service provider (EMSP) while the ambulance is in motion shall be visible and within reach of the designated Primary Patient Care Position.

Add a definition of Primary Patient.

Substantiation: While EMSP appears in a definition of ambulance in chapter 3, this is the first use of the abbreviation in the requirements of the standard and adding the wording for what the abbreviation means helps the reader.

The term "Primary patient" is used in the document in relationship to care position, seats and other things without definition. Primary implies there can be secondary patients, etc. The term needs to be defined.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-160 Log #60 **Final Action:** Accept in Principle
(4.10)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Delete text to read as follows:

~~4.10 Vehicle Data Recorder:~~

~~4.10.1 All ambulances shall be equipped with an on-board vehicle data recorder (VDR).~~

Substantiation: This unnecessarily adds complexity and cost to agencies that may be only marginally able to afford the vehicle in the first place. Consider optional language.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-161 Log #84 **Final Action:** Accept in Principle
(4.10)

Submitter: Michael Gardner, WARsaw - Lincoln Ambulance District

Dan Albrecht, Tri-Township EMS (Log #894)

Charles W. Anderson, Callaway County Ambulance District (Log #1736)

Charles Ansley, MedFlight of Ohio (Log #806)

Tony Anteau, Medicare Ambulance (Log #781)

Charles Ashworth, Alert Ambulance Service Inc. (Log #672)

Scott Ballard, Ballard Ambulance (Log #995)

Marcus Barnett, Logan Co. EMS (Log #750)

William Barratt, Wolcott Volunteer Ambulance (Log #1351)

Michael A. Barrow, Mobile Medical Response, Inc. (Log #796)

Bob Barry, California Ambulance Association (Log #878)

David Batson, MedRide Oklahoma Critical Care Transport (Log #863)

Shawn Baumgartner, Valley Ambulance Services, Inc. (Log #1000)

Jeffrey D. Benson, Millcreek Paramedic Service (Log #1728)

Homer Berlew, Trans-Med Ambulance, Inc. (Log #1316)

Lori Blackburn, Fayette County Memorial Hospital EMS (Log #1156)

Jim Borkowski, Medstar Ambulance (Log #675)

Richard Bowers, Exeter Ambulance (Log #125)

Dymond Bradley, Atchison-Holt Ambulance District (Log #1707)

Gene Bradley, Professional Medical Transportation Inc. (Log #1713)

Ramona M. Bright, Tri-Community Ambulance (Log #816)

Charles P. Bryan, Jr., Tri-Community South EMS (Log #145)

Larry Burton, Adair County Ambulance District (Log #594)

Donald DeReamus, Suburban Emergency Medical Services (Log #858)

Jerry Domidion, Jessamine County EMS (Log #1435)

Jerry Donahue, Greater Columbia Medical Transport Service LP (Log #1131)

Diane Eberdt, Lodi Area EMS (Log #1464)

Harry Eccard, Ada County Paramedics (Log #1470)

Pat Edwards, White River Valley Ambulance (Log #266)

Alexander Fairfield, Northglenn Ambulance (Log #174)

Jack Fisher, Medic 1 Ambulance (Log #1136)

Charmian Foster, Medical Transportation Association of New Jersey/C/O Alert Ambulance (Log #1166)

Russell R. Fowler, Dekalb Ambulance Service (Log #1171)

Linda Frederiksen, Medic EMS (Log #766)

JD Fuiten, Metro West Ambulance (Log #482)

JD Fuiten, Pacific West Ambulance (Log #487)

JD Fuiten, Medix Ambulance (Log #492)

JD Fuiten, Bay Cities Ambulance (Log #497)

Mary Ann Gingrich, Medstar Ambulance (Log #299)

Ben Gresham, Pafford Medical Center (Log #1146)

Lois Griggs, Courtesy Ambulance Inc. (Log #1748)

Douglas Gruenwald, Beaumont Medical Transportation (Log #801)

Nicole Gullickson, Ameny Area EMS (Log #888)

Michael Hall, Nature Coast EMS (Log #624)

Curtis Halmrast, North Dakota EMS Association (Log #1341)

Steven Hare, Levittown-Fairless Hills Rescue Squad (Log #141)

William E. Hathaway, Town of Bennington Rescue Squad, Inc. (Log #756)

Nora Helfrich, Tri-Community South EMS (Log #970)

Ralph Hellebusch, Warren County Ambulance District (Log #1785)

Zack Helton, Pafford Medical Service (Log #828)

Robert Herceg, Ambulance Service, Inc. (Log #206)

Tony Hickerson, Central EMS (Log #771)

Scott Hicks, Medstar Ambulance (Log #690)

Jean M. Holesko, Gillespie - Benld Area Ambulance Service (Log #164)

Mike Howard, Galesburg Hospitals' Ambulance Service (Log #776)

Jon Howell, Huntsville Emergency Medical Services, Inc. (Log #1449)

Steven Hubbard, Scott & White EMS (Log #873)

Victor Incorvaia, Pulse Medical Transportation (Log #975)

Michael Jambrosic, Champion EMS (Log #317)

Chad Jay, Kimball Health Services EMS (Log #1454)

Howard Kaplan, Exceptional Medical Transportation (Log #904)

Glenn Kasprzyk, Life Line Ambulance Service (Log #1443)

Conrad Kearns, Community EMS (Log #868)

Earl Kossuth, TransCare Corp. (Log #761)

Philip Koster, Community Ambulance Service (Log #990)

Joe Kovacs, Medstar Ambulance (Log #680)

Steve Long, Pleasant Hill Fire Protection District (Log #134)

Brian Lovellette, Michigan Association of Ambulance Services (Log #1718)

Mark Mallory, Titus Regional Medical Center EMS (Log #256)

Michael J. Markilinski, Guardian Angel Ambulance Services, Inc. (Log #110)

Elliot Markovitz, Susquehanna Twp. EMS (Log #1360)

William McCarthy, Coastal Health Systems of Brevard (Log #899)

James P. McPartlon, III, Mohawk Ambulance Service (Log #252)

Mark D. Meijer, Life EMS Ambulance (Log #848)

Randy Meininger, Regional West Medical Center (Log #1151)

Michael Mellon, Emergency Medical Foundation, Inc. (Log #913)

Lyle L. Meyers, Trinity Ambulance Service (Log #985)

Jim Miara, Kings Daughters Medical Transport (Log #957)

Kolby Miller, Medstar Ambulance (Log #695)

Eric Mills, University Hospital Ambulance Service (Log #1723)
 Terrye Nicholls, DMCare Express (Log #811)
 Jay O'Keefe, PRN Medical Transport (Log #1438)
 Joseph C. Olla, Meda-Care Ambulance Corp. (Log #1321)
 Bonnie Page, Western Berks Ambulance Assoc. (Log #118)
 Michael Paradis, Newport Ambulance Service, Inc. (Log #1799)
 Paul R. Patrick, State of Utah, Bureau of EMS and Preparedness (Log #629)
 Mark Pedgwaite, Lyndon Rescue, Inc. (Log #150)
 Josef H. Penner, Mecklenburg EMS Agency (Log #318)
 William H. Pennington, Cameron County Ambulance Service, Inc. (Log #169)
 Anne Red, Sinor Emergency Medical Service, Inc. (Log #589)
 Johnny L. Red, Sinor Emergency Medical Service (Log #599)
 Gregory A. Reid, React EMS (Log #1355)
 Aaron Reinert, Lakes Region EMS (Log #786)
 Jennifer Revels, Pafford Medial Service (Log #833)
 Dennis Reynolds, VBEMS, Inc. (Log #1326)
 S. Scott Rhoat, Bellefonte Emergency Medical Services, Inc. (Log #1459)
 Eugene Richardson, Sullivan County Ambulance District (Log #1790)
 Damian Rickard, American Ambulance Services, Inc (Log #909)
 Michael Ross, Freeman Ambulance Service (Log #133)
 Todd Runge, Swea City Ambulance (Log #961)
 John J. Russell, Cape County Private Ambulance Service, Inc. (Log #821)
 Tom Schmiedeknecht, Professional Med Team, Inc. (Log #791)
 Eddie Sims, NRHS-EMStat EMS (Log #853)
 Ron Slagell, LifeCare Ambulance Service (Log #619)
 Brent Smith, Hopkins County EMS (Log #223)
 Julie Smith, Rural Nebraska Regional Ambulance Network (RNRAN) (Log #1141)
 Debra Sokota, New Paltz Rescue Squad (Log #275)
 Christopher H. Stawasz, Rockingham Regional Ambulance, Inc. (Log #1336)
 Terry Stecker, Siouxland Paramedics Inc. (Log #838)
 Anthony Stevens, Professional Sales & Service (Log #883)
 Ronald W. Thackery, American Medical Response, Inc. (Log #580)
 Ronald W. Thackery, American Medical Response, Inc. (Log #604)
 Tom Tornstrom, Tri-State Ambulance (Log #159)
 Patrick Trinko, Shawano Ambulance Service (Log #243)
 Scott Tucker, Canyon County Paramedics (Log #634)
 Randy VanderHeiden, Bellingham Fire Dept. (Log #614)
 Gabe VanVactor, ITS Emergency Medical Services (Log #609)
 Michael Vatch, SeniorCare EMS (Log #1331)
 Marianne Venditti, Medstar Ambulance (Log #685)
 Charles Wadsworth, Pafford Medical Service (Log #1161)
 Jo Walter, Waverly Health Center (Log #1472)
 Faril A. Ward, Trans-Care, Inc. (Log #1346)
 Jau Washburn, Metro Paramedic Services, Inc. (Log #1795)
 Gary Watters, AMED (Log #271)
 Scott Welker, Uwchlan Ambulance Corps. (Log #122)
 Jerry Whetstone, Altoona Fire Department (Log #843)
 Kelly Whitehead, North Flight EMS (Log #965)
 Gary Wingrove, Gold Cross/Mayo Clinic Medical Transport (Log #1753)
 Diane Witkowski, HealthLink Medical Transportation (Log #980)
 Michael Woronka, Action Ambulance Service, Inc. (Log #260)
 Richard Young, Washington County Ambulance (Log #667)
 Jerry Zapolnik, Huron Valley Ambulance (Log #1761)
 Jerry Zapolnik, Jackson Community Ambulance (Log #1766)

Recommendation: Revise text to read as follows:

~~All ambulances shall be equipped with an on-board vehicle data recorder (VDR).~~ This section should be deleted in its entirety.

Substantiation: There is a lack of current technology and VDR design that meets the standard; any implementation of an onboard VDR will require more scientific study demonstrating improved safety performance, increased operational efficiency before identifying VDR requirements. Also need to be able to establish with scientific certainty that the data being gathered can be accumulated, acted upon and will provide enhanced safety of vehicle operation and occupant safety. Any VDR should be provided by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-162 Log #92 **Final Action: Accept in Principle (4.10)**

Submitter: Patrick Ryan, Madison, WI

Recommendation: Revise text to read as follows:

~~All ambulances shall be equipped with an on-board vehicle data recorder (VDR).~~ This section should be deleted in its entirety.

Substantiation: There is a lack of current technology and VDR design that

meets the standard; any implementation of an onboard VDR will require more scientific study demonstrating improved safety performance, increased operational efficiency before identifying VDR requirements. Also need to be able to establish with scientific certainty that the data being gathered can be accumulated, acted upon and will provide enhanced safety of vehicle operation and occupant safety. Any VDR should be provided by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-163 Log #96 **Final Action: Accept in Principle (4.10)**

Submitter: Ryan Hellebusch, Warren County Ambulance District

Recommendation: Revise text to read as follows:

~~All ambulances shall be equipped with an on-board vehicle data recorder (VDR).~~ This section should be deleted in its entirety.

Substantiation: There is a lack of current technology and VDR design that meets the standard; any implementation of an onboard VDR will require more scientific study demonstrating improved safety performance, increased operational efficiency before identifying VDR requirements. Also need to be able to establish with scientific certainty that the data being gathered can be accumulated, acted upon and will provide enhanced safety of vehicle operation and occupant safety. Any VDR should be provided by the OEM. □

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-164 Log #99 **Final Action: Accept in Principle (4.10)**

Submitter: Al Maletto, Johnsonburg Fire Dept. Ambulance

Recommendation: Revise text to read as follows:

~~All ambulances shall be equipped with an on-board vehicle data recorder (VDR).~~ This section should be deleted in its entirety.

Substantiation: There is a lack of current technology and VDR design that meets the standard; any implementation of an onboard VDR will require more scientific study demonstrating improved safety performance, increased operational efficiency before identifying VDR requirements. Also need to be able to establish with scientific certainty that the data being gathered can be accumulated, acted upon and will provide enhanced safety of vehicle operation and occupant safety. Any VDR should be provided by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-165 Log #104 **Final Action: Accept in Principle (4.10)**

Submitter: Timothy Hoffman, Good Samaritan Hospital

Recommendation: Revise text to read as follows:

~~All ambulances shall be equipped with an on-board vehicle data recorder (VDR).~~ This section should be deleted in its entirety.

Substantiation: There is a lack of current technology and VDR design that meets the standard; any implementation of an onboard VDR will require more scientific study demonstrating improved safety performance, increased operational efficiency before identifying VDR requirements. Also need to be able to establish with scientific certainty that the data being gathered can be accumulated, acted upon and will provide enhanced safety of vehicle operation and occupant safety. Any VDR should be provided by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-166 Log #184 **Final Action: Accept in Principle (4.10)**

Submitter: Andrew Moffitt, Gold Cross Ambulance

Recommendation: ~~All ambulances shall be equipped with an on-board vehicle data recorder (VDR).~~ This section should be deleted in its entirety.

Substantiation: There is a lack of current technology and VDR design that meets the standard; any implementation of an on board VDR will require more scientific study demonstrating improved safety performance, increased operational efficiency before identifying VDR requirements. Also need to be able to establish with scientific certainty that the data being gathered can be accumulated, acted upon and will provide enhanced safety of vehicle operation and occupant safety. Any VDR should be provided by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-167 Log #185 **Final Action: Accept in Principle (4.10)**

Submitter: James Finger, Regional Ambulance Service, Inc.

Recommendation: ~~All ambulances shall be equipped with an on-board data recorder (VDR).~~ This section should be deleted in its entirety.

Substantiation: There is a lack of current technology and VDR design that meets the standard; any implementation of an on board VDR will require more scientific study demonstrating improved safety performance, increased operational efficiency before identifying VDR requirements. Also need to be able to establish with scientific certainty that the data being gathered can be accumulated, acted upon and will provide enhanced safety of vehicle operation and occupant safety. Any VDR should be provided by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-168 Log #190 **Final Action: Accept in Principle (4.10)**

Submitter: Stephen Williamson, EMSA

Recommendation: ~~All ambulances shall be equipped with an on-board data recorder (VDR).~~ This section should be deleted in its entirety.

Substantiation: There is a lack of current technology and VDR design that meets the standard; any implementation of an on board VDR will require more scientific study demonstrating improved safety performance, increased operational efficiency before identifying VDR requirements. Also need to be able to establish with scientific certainty that the data being gathered can be accumulated, acted upon and will provide enhanced safety of vehicle operation and occupant safety. Any VDR should be provided by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-169 Log #199 **Final Action: Accept in Principle (4.10)**

Submitter: Leonard Marquez, SeniorCare EMS

Recommendation: ~~All ambulances shall be equipped with an on-board data recorder (VDR).~~ This section should be deleted in its entirety.

Substantiation: There is a lack of current technology and VDR design that meets the standard; any implementation of an on board VDR will require more scientific study demonstrating improved safety performance, increased operational efficiency before identifying VDR requirements. Also need to be able to establish with scientific certainty that the data being gathered can be accumulated, acted upon and will provide enhanced safety of vehicle operation and occupant safety. Any VDR should be provided by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-170 Log #211 **Final Action: Accept in Principle (4.10)**

Submitter: Matthew Zavadsky, MedStar EMS

Recommendation: Delete entire section.

Substantiation: Cost prohibitive for many EMS agencies and no requirement for data collection/reporting.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-171 Log #704 **Final Action: Accept in Principle (4.10)**

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: This line item should be deleted.

Substantiation: This would add a high amount of expense to ambulances. It can still be an option. Not all services, especially small volunteers with very short runs, do not need this device or the overhead expense it creates.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-172 Log #950 **Final Action: Accept in Principle (4.10)**

Submitter: Kevin Sullivan, Town of Enfield - EMS Division

Recommendation: I would like to see the Vehicle Data Recorder aspect removed or made "optional" or "recommended".

Substantiation: I appreciate the value of a standard which includes a Vehicle Data Recorder, but I do not think the ambulance market has effective vehicle data recorders on the market. In a number of previous ambulance purchases, I have incorporated various types of vehicle data recorders. When attempting to utilize these devices, often after accidents, data was unavailable and the device had failed. After repeated failures, I move to software and applications that moved to capture important vehicle data in other ways - often via software packages that utilized GPS data connected to a CAD system.

I think that Vehicle Data Recorders are a solid idea, but I do not think that the technology is available to utilize this technology at this time.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-173 Log #1005 **Final Action: Reject**
(4.10)

Submitter: Thomas Lenart, CT Dept of Public Health Office of Emergency Medical Services

Recommendation: New text to read as follows:

4.10 Vehicle Data Recorder.

4.10.1 All ambulances shall be equipped with an on-board vehicle data recorder (VDR). The manufacturer of the Data recorder system will provide all necessary technical support to the owner of the vehicle and will provide software necessary for operation and updates, all information obtained by the data recorder system will be owned by the vehicle owner.

Substantiation: 4.10- data recorder and its systems, both the equipment and the technical support needed to store and maintain the data, and potential liability associated with who owns the data and who is entitled to it.

Committee Meeting Action: Reject

Committee Statement: Recommended specification is too vague.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-174 Log #1027 **Final Action: Reject**
(4.10)

Submitter: Guy Balok, Plymouth, MI

Recommendation: None given.

Substantiation: By observing and analyzing vehicle performance parameters, driver inputs, and vehicle responses, manufacturers and operators of Ambulances can gain improved operational utility, achieve new levels of safety and security, and have at their disposal a wealth of new information to help them learn from vehicle events. Such real-time monitoring and data-logging opportunities include improved vehicle interaction, driver training and oversight, occupant-protection systems. Systems that record specific vehicle inputs, component conditions, and dynamic responses from the period immediately preceding a crash, through the actual event, offer safety agencies and vehicle manufacturers additional opportunities to gain knowledge that can be used to reduce the likelihood of future crashes.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-175 Log #1030 **Final Action: Reject**
(4.10)

Submitter: Guy Balok, Plymouth, MI

Recommendation: None given.

Substantiation: By observing and analyzing vehicle performance parameters, driver inputs, and vehicle responses, manufacturers and operators of Ambulances can gain improved operational utility, achieve new levels of safety and security, and have at their disposal a wealth of new information to help them learn from vehicle events. Such real-time monitoring and data-logging opportunities include improved vehicle interaction, driver training and oversight, occupant-protection systems. Systems that record specific vehicle inputs, component conditions, and dynamic responses from the period immediately preceding a crash, through the actual event, offer safety agencies and vehicle manufacturers additional opportunities to gain knowledge that can be used to reduce the likelihood of future crashes.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-176 Log #1183 **Final Action: Reject**
(4.10)

Submitter: Deborah Thomson, PL Custom Emergency Vehicles

Recommendation: None given.

Substantiation: Vehicle Data Recorder - Not all Ambulance chassis manufacturers allow interface with a Vehicle Data Recorder. This will be costly for us to add to chassis that do not provide.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-177 Log #1499 **Final Action: Accept in Principle**
(4.10)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Delete text to read as follows:

4.10 Vehicle Data Recorder:

Substantiation: This section should be moved to the annex and made an option.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-178 Log #1809 **Final Action: Reject**
(4.10)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

4.10 Vehicle Data Recorder.

4.10.1 All ambulances ~~shall~~ may be equipped with an on-board vehicle data recorder (VDR).

4.10.2 ~~The~~ If a VDR is used it shall be capable of recording the data shown in Table 4.10.2 in that order at least once per second.

Substantiation: Cost is excessive in particular to small volunteer units and is of very little if any use to anyone except insurance companies and members of the legal profession.

Committee Meeting Action: Reject

Committee Statement: Cannot have may statements in the body of the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-179 Log #1835 **Final Action: Reject**
(4.10)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

4.10 Vehicle Data Recorder.

4.10.1 All ambulances ~~shall~~ may be equipped with an on-board vehicle data recorder (VDR).

4.10.2 ~~The~~ If a VDR is used it shall be capable of recording the data shown in Table 4.10.2 in that order at least once per second.

Substantiation: Cost is excessive in particular to small volunteer units and is of very little if any use to anyone except insurance companies and members of the legal profession.

Committee Meeting Action: Reject

Committee Statement: Cannot have may statements in the body of the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-180 Log #CP4 **Final Action: Accept**
(6.24.3 and 6.24.3.1)

Submitter: Technical Committee on Ambulances,

Recommendation: Delete 4.10

4.10 Vehicle Data Recorder:

4.10.1 All ambulances shall be equipped with an on-board vehicle data recorder (VDR):

4.10.2 The VDR shall be capable of recording the data shown in Table 4.10.2 in that order at least once per second:

Table 4.10.2 VDR Data Data Unit of Measure Vehicle speedmphAcceleration (from speedometer)mph/secDeceleration (from speedometer)mph/secEngine speedrpmEngine throttle position% of full throttleAnti-lock braking system eventOn/offSeat occupied statusOccupied: Yes/No by positionSeat belt statusBuckled: Yes/No by positionMaster optical warning device switchOn/offTime24-hour clockDateYear/month/day

4.10.3 Data shall be stored at the sampling rate in a 48-hour loop:

4.10.4 Memory shall be sufficient to record 100 engine hours' worth of minute-by-minute summary showing the data in Table 4.10.4:

Table 4.10.4 VDR Summary Data Data Unit of Measure Maximum vehicle speedmphMaximum acceleration (from speedometer)mph/secMaximum deceleration (from speedometer)mph/secMaximum engine speedrpmMaximum engine throttle position% of full throttleAnti-lock braking system eventOn/offSeat occupied with seat belt unbuckledYes/no by position at 30 sec into minuteMaster optical warning device switchOn/off at 30 sec into minuteTime24-hour clockDateYear/month/day

4.10.5 When the memory capacity is reached, the system shall erase the oldest data first:

4.10.6 All data stored in the VDR shall be uploadable by the user to a computer and importable into a data management software package:

4.10.7 Data shall be password-protected with access controlled by the purchaser:

4.10.8 Software shall be delivered with the ambulance that will run on both Windows® and Apple® operating systems and produce the following formatted reports from the uploaded data:

(1) Raw second-by-second data over a specified data/time range

(2) Daily log for the time the engine is running for a given date (minute-by-minute output of all values)

(3) Weekly summary (maximum values each hour for each day of the week)

(4) Monthly summary (maximum values each day for each day of the month)

Revise 6.24.3 to read as follows and add new Annex

6.24.3 Seat Belts.

6.24.3.1* Each crew designated seating position riding position shall be provided with a seat belt.

A.6.24.3.1 The ultimate mission of any ambulance is to safeguard the health and welfare of the patient being transported. This mission fails if the ambulance does not arrive safely. To this end it is essential that the ambulance is driven in a safe manner, and that all occupants are seated and belted while the vehicle is in motion. During emergency responses, emergency medical personnel may be inclined to take more risks than usual and to skip basic vehicle safety precautions. To encourage safe practices, ambulance operation management should consider employing some method of monitoring the driving habits of the ambulance personnel. Several methods of monitoring compliance of all safety precautions by personnel in the vehicle including available live video monitoring, video recording, and vehicle data recording. Any monitoring method should include monitoring of the use of seat belts, and an indication of how carefully the ambulance is being driven.

Purchasers may wish to consider specifying seat belt colors such as bright red or bright orange. Bright belt colors are easier to see on drive-cam videos or by

observation through the window when enforcing seat belt use compliance. Seat belt design is critical to safety during a crash. Seat belts should conform to FMVSS 210 S4.3.1.1 which requires that the lap portion of the belt in any Designated Seating Position does not constrain the occupant high across the belly.

FMVSS 210-S5.1 requires that seat belt anchorages for side-facing seatbelt assembly shall withstand a minimum of 1134 kg (2,500 lbs.) force:

Substantiation: VDRs are probably a good thing for many ambulance operations but they are not the only means of monitoring safe driving. There are so many methods that the committee feels this should be left up to the ambulance operation management. Operations who are convinced that their policy and culture already ensures safe practices may not need a method of monitoring.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

PRENTISS, S.: within the scope of this revision, this is one place with seatbelts for each designated "seating positions" that addresses safety and starts the discussion about the cultural shift necessary for EMS Providers when working from a seated, belted position in the back of ambulance

1917-181 Log #1432 **Final Action: Accept in Principle**
(4.10 and 4.10.1)

Submitter: Chad Dotzler, Hennepin EMS

Recommendation: Revise text to read as follows:

4.10 Vehicle Data Recorder

4.10.1 All ambulances shall be equipped with a on-board vehicle data recorder Delete entire VDR section.

Substantiation: The section about requiring continuous style VDRs in all ambulance should be deleted. First, the technology is fairly new and is not yet prevalent in the market. As a result, the costs are too high for the smaller ambulance services to not only install the equipment' but also the cost to maintain and manage it. This will likely, in some cases, make it so that agencies will not be able to afford a new ambulance. The concept is good, but what is the Committee's goal by requiring this VDR? If it is crash data, then why not go with an event style recorder. These have a larger footprint in the market, are cheaper and easier to manage. Data would only be collected and stored after an event triggered it. Most car manufacturers have these units already in place.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-182 Log #79 **Final Action: Reject**
(4.10.1)

Submitter: Brad Elliott, Intertek Industrial Corp.

Recommendation: Revise text to read as follows:

All ambulances shall be equipped with On-Board Vehicle Data Recorder (VDR) when the vehicle is equipped from the factory with hook ups to obtain this information from the vehicles factory VDR system.

Substantiation: A VDR cannot be installed by a ambulance manufacture without violating Ford, Chevy or Dodge quality issues with the ambulance manufacture. The ambulance manufacture needs the capability to tie into the existing VDR installed by the Vehicle Manufacture.

Committee Meeting Action: Reject

Committee Statement: The standard cannot provide for 2 levels of safety depending on what is available from the manufacturer.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-183 Log #304 **Final Action: Reject**
(4.10.1)

Submitter: Charles D. Drake, SJC Industries Corporation

Recommendation: Revise text to read as follows:

4.10.1 All ambulances shall may be equipped with an on-board vehicle data recorder (VDR).

Substantiation: Vehicle data recorders increase the cost of every ambulance as compared to the value that every user may receive. The end users that value the information may determine the cost is appropriate for their operation.

Committee Meeting Action: Reject

Committee Statement: Cannot have may statements in the body of the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-184 Log #1363 **Final Action: Accept in Principle**
(4.10.1)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

All ambulances shall be equipped with an on-board vehicle data recorder (VDR).

Substantiation: This level of monitoring will be expensive and all the vehicle data required may not be available via the OBD on all models.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-185 Log #328 **Final Action: Accept in Principle**
(4.10.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

The VDR shall be capable of recording the data shown in Table 4.10.2 in that order at least once per second.

Substantiation: Lack of current VDR designed that meets the standard; data will require more scientific study before identifying VDR requirements Also need to be able to establish with scientific certainty that the data being gathered can be accumulated, acted upon and will provide enhanced safety of vehicle operation and occupant safety.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-186 Log #1046 **Final Action: Reject**
(4.10.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

4.10.2 The VDR shall be capable of recording the data shown in Table 4.10.2 in that order at least once per second.

Table 4.10.2 VDR Data

Data Unit of Measure

Vehicle speed mph

Acceleration (from speedometer) mph/sec

Deceleration (from speedometer) mph/sec

rpm

Engine throttle position % of full throttle

Anti-lock braking system event On/off

Seat occupied status —PATIENT COMPARTMENT Occupied: Yes/No by position

Seat belt status—PATIENT COMPARTMENT Buckled: Yes/No by position

Master optical warning device switch On/off

Substantiation: Many chassis' used for ambulances do not provide for monitoring seat occupied status or seat belt status in one of more of the seats in the OEM cab. Most chassis manufacturers prohibit modification of their seat belt systems. The ambulance manufacturer can only be required to provide monitoring for the seats they have installed in the patient compartment.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-187 Log #1192 **Final Action: Accept in Principle**
(4.10.2)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

The VDR shall be capable of recording the data shown in Table 4.10.2 in that order at least once per second.

Substantiation: Lack of current VDR designed that meets the standard; data will require more scientific study before identifying VDR requirements Also need to be able to establish with scientific certainty that the data being gathered can be accumulated, acted upon and will provide enhanced safety of vehicle operation and occupant safety.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-188 Log #1500 **Final Action: Reject**
(4.10.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

4.10.2 The VDR shall be capable of recording the data shown in Table 4.10.2

in that order at least once per second. Table 4.10.2 VDR Data Data Unit of

Measure Vehicle speed mph Acceleration (from speedometer) mph/sec

Deceleration (from speedometer) mph/sec rpm Engine throttle position % of

full throttle Anti-lock braking system event On/off Seat occupied status —

PATIENT COMPARTMENT Occupied: Yes/No by position Seat belt status —

PATIENT COMPARTMENT Buckled: Yes/No by position Master optical

warning device switch On/off Time 24-hour clock Date Year/month/day.

Substantiation: This section should be moved to the annex and made an option. And, as an option, the seat belt status should be limited to monitoring of the seats in the patient compartment. Requiring this for the front seats will require replacement of OEM belts and risks incompatibility with restraint/airbag functionality.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-189 Log #1690 **Final Action: Accept in Principle**
(Table 4.10.2)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Table 4.10.2 VDR Data: See comments below

Substantiation: Problem: What VDR product captures this many parameters?

Considering that a four door cab ambulance has as many as ten occupant positions to monitor and some chassis manufacturers do not support monitoring of rear cab positions, the cost and complexity of retrofitting the cab and up-fitting the patient compartment will be tremendous. Now consider the distraction of the emergency vehicle operator as care givers move around in the rear of the vehicle delivering patient care. The warning system will be blaring as they attempt to focus on operating the vehicle under emergency conditions. Now add in the maintenance nightmare you've designed. Seat belt sensors, position sensors to be calibrated to sense a certain weight and an alarm system to distract operators if one malfunctions. Was any thought give to the additional vehicle down time this standard will create? Would the NFPA recommend parking an ambulance for a defective sensor?

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-190 Log #329 **Final Action: Accept in Principle**
(4.10.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Data shall be stored at the sampling rate in a 48-hour loop.~~
Substantiation: Lack of current VDR designed that meets the standard; data will require more scientific study before identifying VDR requirements

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-191 Log #1012 **Final Action: Reject**
(4.10.3)

Submitter: David Schimmel, Wayne Memorial First Aid Squad

Recommendation: Revise text to read as follows:

4.10.3 Data shall be stored at the sampling rate in a 48-hour 180 second loop.
Substantiation: Ideally this should be an optional item and left up to the purchaser to decide how he wants to monitor his employees but that the very lease technology that measures g forces on the vehicle and will determine if the vehicle has been struck should be used and the time frame should be reduced to 180 seconds and the storage should be frozen if the vehicle gets hit.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-192 Log #330 **Final Action: Reject**
(4.10.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Memory shall be sufficient to record 100 engine hours' worth of minute-by-minute summary showing the data in Table 4.10.4.~~

Substantiation: Lack of current VDR designed that meets the standard; data will require more scientific study before identifying VDR requirements

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-193 Log #331 **Final Action: Reject**
(4.10.5)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~When the memory capacity is reached, the system shall erase the oldest data first.~~

Substantiation: Lack of current VDR designed that meets the standard; data will require more scientific study before identifying VDR requirements.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-194 Log #332 **Final Action: Reject**
(4.10.6)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~All data stored in the VDR shall be uploadable by the user to a computer and importable into a data management software package.~~

Substantiation: Lack of current VDR designed that meets the standard; data will require more scientific study before identifying VDR requirements.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-195 Log #1193 **Final Action: Reject**
(4.10.6)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

~~Software shall be delivered with the ambulance that will run on both Windows® and Apple® operating systems and produce the following formatted reports from the uploaded data:~~

- ~~(1) Raw second-by-second data over a specified data/time range~~
- ~~(2) Daily log for the time the engine is running for a given date (minute-by-minute output of all values)~~
- ~~(3) Weekly summary (maximum values each hour for each day of the week)~~
- ~~(4) Monthly summary (maximum values each day for each day of the month)~~

Substantiation: Lack of current VDR designed that meets the standard; data will require more scientific study before identifying VDR requirements.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-196 Log #333 **Final Action: Reject**
(4.10.7)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Data shall be password protected with access controlled by the purchaser.~~
Substantiation: Lack of current VDR designed that meets the standard; data will require more scientific study before identifying VDR requirements.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-197 Log #1582 **Final Action: Reject**
(4.10.7)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4.10.7 to read as follows:

~~4.10.7 Data shall be password protected with access controlled by the purchaser.~~

Substantiation: The manufacturer cannot control who can have access to the data and that is a matter beyond the scope of the document. The purchaser may not be the correct person as the purchaser could be a leasing company or some other third party.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-198 Log #334 **Final Action: Reject**
(4.10.8)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Software shall be delivered with the ambulance that will run on both Windows® and Apple® operating systems and produce the following formatted reports from the uploaded data:~~

- ~~(1) Raw second-by-second data over a specified data/time range~~
- ~~(2) Daily log for the time the engine is running for a given date (minute-by-minute output of all values)~~
- ~~(3) Weekly summary (maximum values each hour for each day of the week)~~
- ~~(4) Monthly summary (maximum values each day for each day of the month)~~

Substantiation: Lack of current VDR designed that meets the standard; data will require more scientific study before identifying VDR requirements.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-199 Log #1364 **Final Action: Reject**
(4.10.8)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Software shall be delivered with the ambulance that will run on both Windows® and Apple® operating systems.

Substantiation: Requiring the data collection software to operate on both platforms Windows and Apple adds cost. It may be better to require the output

files be viewable on both platforms. This allows for cross platform file types to be utilized without added cost or specialized software.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-200 Log #1560 **Final Action: Reject**
(4.10.8)

Submitter: Ed Brady, Weldon (a Division of Akron Brass)

Recommendation: Revise text to read as follows:

~~4.10.8 Software shall be delivered with the ambulance that will run on both Windows® XP Service Pack 3 or later and Apple® operating systems and produce the following formatted reports from the uploaded data:~~

Substantiation: This paragraph was originally worded to imply that the software must run on all Windows and Apple operating system platforms. Some of these platforms have been obsoleted by Microsoft and Apple and are no longer supported. Apple was removed completely since it provides software that allows it to automatically run Windows based applications.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-201 Log #335 **Final Action: Reject**
(4.12)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Ambulance Performance:~~

Substantiation: The proposed standard lacks data to support standard. In order to include the proposed standard it must be supported by peer reviewed scientific data that supports its utilization and establishes benefits related to cost, efficiency and safety.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-180 (Log #CP4).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-202 Log #63 **Final Action: Accept**
(4.12.1)

Submitter: William von Zehle, Jr., Wilton Emergency Medical Services

Recommendation: Revise text to read as follows:

The ambulance shall meet the requirements of this standard at elevations of up to 2,000 ft (600 m) above sea level.

Substantiation: The original wording actually states the apparatus must perform only at 2,000 ft (600 m) above sea level.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-203 Log #643 **Final Action: Reject**
(4.12.1)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Delete the following text:

4.12.1 The ambulance shall meet the requirements of this standard at elevations of 2,000 ft (600 m) above sea level.

Substantiation: How do you validate this if asked for testing certification? If you require this in the spec then there should be a written test criteria for it.

Committee Meeting Action: Reject

Committee Statement: Engine and chassis manufacturers can provide performance data at 2000 ft.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-204 Log #1501 **Final Action: Reject**
(4.12.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Delete text to read as follows:

4.12.1 The ambulance shall meet the requirements of this standard at elevations of 2,000 ft (600 m) above sea level.

Substantiation: This would rule out all known test facilities that currently test ambulances.

Committee Meeting Action: Reject

Committee Statement: Engine and chassis manufacturers can provide performance data at 2000 ft.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-205 Log #651 **Final Action: Reject**
(4.12.2)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Delete the following text:

4.12.2 The ambulance shall meet all the requirements of this standard while stationary on a grade of 6 percent in any direction.

Substantiation: There has never been a reported issue of an ambulance not functioning on a 6 percent incline. What is being tested and how is this test to be performed. Is it in an environmental chamber with a tilting floor if so I know of none in this country. I don't have a problem with testing if we are addressing a issue but if there isn't what then is the value. if you put something like this in a spec there should be a way to validate it.

Committee Meeting Action: Reject

Committee Statement: Engine and chassis manufacturers can provide performance data at 2000 ft.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-206 Log #1502 **Final Action: Accept in Principle**
(4.12.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Delete text to read as follows:

4.12.2 The ambulance shall meet all the requirements of this standard while stationary on a grade of 6 percent in any direction.

Substantiation: What is intended to be tested "stationary"? Also, a 6% grade is unnecessary. Recommend using the separate gradeability requirements from KKK-A-1822 F, Section 3.4.7.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-207 (Log #CP5).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-207 Log #CP5 **Final Action: Accept**
(4.12.2)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

A.4.12 This section describes a range of operating measures of the vehicle and there may be different performance criteria specified for different tests. This section is not intended to prescribe test requirements for all ambulance characteristics. Refer to section 9 for individual ambulance performance test requirements.

A.4.12.2 The purchaser should determine on types of grades the ambulance will be expected to operate on when it is in stationary operation. The occasional exposure to grades in excess of that required by this standard while moving over roadways is different from prolonged stationary operations. The vehicle might require special lubrication systems for engines and other modifications to ensure that it will not be damaged by operation on the increased grades.

Revise A.4.12.3 to read as follows:

A.4.12.3 This standard specifies various temperature ranges for the ambulance or ambulance systems based on the use they will see. While the ambulance as a whole is required to operate satisfactorily in low temperatures, it is not crucial that the engine starting capability be as low as the ambient temperature since most operations in cold climates will keep working ambulances in a garage or will use an engine block heater. Components or systems in the interior of the ambulance do not need to function at extremely low ambient temperatures since the interior of the ambulance will be maintained at higher temperatures by the HVAC system. The purchaser should consider the climate that the ambulance will operate in and specify temperatures outside these minimum standard ranges if appropriate. The interior of the ambulance patient compartment should be maintained at a minimum temperature of 50°F (10°C) when the ambulance is prepared for immediate response. The purchaser should consider how this will be accomplished. If the ambulance will not be housed in a heated facility, then other means may be required to ensure that this requirement is met. This requirement does not apply to ambulances that are fully operational but being held in reserve or ambulances that are not fully operational.

The ambulance and all systems, components and equipment shall be capable of being stored at 32° F to 95° F (0°C to 35°C) without damage or deterioration.

Substantiation: First section was added to remove some confusion that was evident from the public comments. The second section points out that grades greater than 6 percent may require special specifications. The third section explains why the temperature ranges are not the same in all sections of the standard. The last sentence is deleted because it is a shall statement that does not belong in the annex and is not necessary given the other temperature specifications in the standard.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

PRENTISS, S.: the "ready" temperature of 50 degrees for the patient compartment is to low. This is not for storage, or operating ranges once in action. It is less then many states would allow for the patient compoartment when ready for the next response.

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-208 Log #644 **Final Action: Reject**
(4.12.3)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Delete the following text:

4.12.3* Where temperature requirements are not otherwise specified, the ambulance shall be designed to function in ambient temperature conditions between -20°F (-29°C) and 110°F (43°C).

Substantiation: How do you validate this if asked for testing certification? If you require this in the spec then there should be a written test criteria for it.

Committee Meeting Action: Reject

Committee Statement: Not all specifications require testing. This line item is intended to provide guidance to ambulance engineers specifying equipment and materials that will operate in these temperatures.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-209 Log #931 **Final Action: Reject**
(4.12.3)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: Section 4.12 Ambulance Performance

We are pleased that the operating range for temperatures in this section has been expanded to -20°F to 110°F. This represents a more realistic range of environmental temperatures that may be encountered by an ambulance. This is especially important in Colorado and other areas that experience a wide range of temperature variation between the summer and winter months and various changes in elevation.

The performance parameters should also include operating altitudes. It is important that ambulances be able to operate reliably at a variety of altitudes in a multitude of states with mountainous terrain. KKK-A-1822F addressed this issue peripherally through a requirement that the cooling system maintain a safe operating engine temperature at all drivable grades and altitudes. Engine performance, electronic displays and other ambulance systems may also be influenced by altitude and should be included in the performance standard.
Substantiation: Colorado Highways range in elevation from 3355 to 14,160 feet above sea level <http://www.mesalek.com/colo/trivia/elev.html>.

Most states have also recorded extreme temperature ranges of 120 – 190 degrees http://ggweather.com/climate/extremes_us.htm with most states having exceeded both the high and low end of the range listed. Ambulances are also likely to be used to serve the public during these extreme temperatures.

7.3.4.1 - Alternator output is rated at 95°F ambient temperatures rather than the maximum operating temperature of 110°F.

9.1.2 - Test sequence does not specify a temperature. Battery capacity is significantly influenced by temperature and a system that performs at room temperature may not perform at the extremes of operating temperatures.

Committee Meeting Action: Reject

Committee Statement: The submitter provides no specific recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-210 Log #945 **Final Action: Reject**
(4.12.3)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: We are pleased that the operating range for temperatures in this section has been expanded to -20°F to 110°F. This represents a more realistic range of environmental temperatures that may be encountered by an ambulance. This is especially important in Colorado and other areas that experience a wide range of temperature variation between the summer and winter months and various changes in elevation.

The performance parameters should also include operating altitudes. It is important that ambulances be able to operate reliably at a variety of altitudes in a multitude of states with mountainous terrain. KKK-A-1822F addressed this issue peripherally through a requirement that the cooling system maintain a safe operating engine temperature at all drivable grades and altitudes. Engine performance, electronic displays and other ambulance systems may also be influenced by altitude and should be included in the performance standard.
Substantiation: Colorado Highways range in elevation from 3355 to 14,160 feet above sea level <http://www.mesalek.com/colo/trivia/elev.html>.

Most states have also recorded extreme temperature ranges of 120 – 190 degrees http://ggweather.com/climate/extremes_us.htm with most states having exceeded both the high and low end of the range listed. Ambulances are also likely to be used to serve the public during these extreme temperatures.

7.3.4.1 - Alternator output is rated at 95°F ambient temperatures rather than the maximum operating temperature of 110°F.

9.1.2 - Test sequence does not specify a temperature. Battery capacity is significantly influenced by temperature and a system that performs at room temperature may not perform at the extremes of operating temperatures.

Committee Meeting Action: Reject

Committee Statement: The submitter provides no specific recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-211 Log #1047 **Final Action: Accept in Principle**
(4.12.3)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

A.4.12.3 The interior of the ambulance patient compartment should be maintained at a minimum temperature of 50°F (10°C) when the ambulance is prepared for immediate response. The purchaser should consider how this will be accomplished. If the ambulance will not be housed in a heated facility, then other means may be required to ensure that this requirement is met. This requirement does not apply to ambulances that are fully operational but being held in reserve or ambulances that are not fully operational. The ambulance and all systems, components and equipment shall be capable of being stored at 32°F to 95°F (0°C to 35°C) without damage or deterioration.

Substantiation: Temp. range needs to be consistent with ranges set forth in 6.17.4 and 6.17.4.2. 32 deg. F (0 deg. C) TO 95 deg. F (35 deg. C)

Committee Meeting Action: Accept in Principle

Delete text from last sentence in A.4.12.3:

~~The ambulance and all systems, components and equipment shall be capable of being stored at 32° F to 95° F (0°C to 35°C) without damage or deterioration.~~

Committee Statement: Comments from submitter are unclear as to what is being asked, but the final sentence in A.4.12.3 appears to be an editorial mistake.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-212 Log #1503 **Final Action: Reject**
(4.12.3)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

Where temperature requirements are not otherwise specified, the ambulance shall be designed to function in ambient temperature conditions between -2032°F (-290°C) and +1095°F (4335°C).

Substantiation: Change to be consistent with temp range cited through document. The Annex item for this states the 32 degrees to 95 degrees. F range, so this may have been a type-o.

Committee Meeting Action: Reject

Committee Statement: The committee intends the ambulance to operate in the stated external ambient temperatures. The body text refers to interior temperature operation and assumes that the vehicle HVAC will maintain these temperatures.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-213 Log #746 **Final Action: Reject**
(4.12.4)

Submitter: John J. Russell, Cape County Private Ambulance Service, Inc.

Recommendation: Delete the following text:

~~The ambulance shall be capable of being driven for at least 250 mi (402 km) without refueling.~~

Substantiation: The proposed standard lacks data to support standard. In order to include the proposed standard it must be supported by peer reviewed scientific data that supports its utilization and establishes benefits related to cost, efficiency and safety. Further, many flex and alternative fuel vehicles may meet this standard with one fuel source but not another. It strikes me the prerogative of the operator should be paramount in deciding what fuel source and operational range is appropriate. Many locations may want considerably more than 250 miles.

Committee Meeting Action: Reject

Committee Statement: This is a minimum standard. The purchaser can specify if desired.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-214 Log #1194 **Final Action: Reject**
(4.12.4)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

The ambulance shall be capable of being driven for at least 250 mi (402 km) without refueling.

Substantiation: The proposed standard lacks data to support standard. In order to include the proposed standard it must be supported by peer reviewed scientific data that supports its utilization and establishes benefits related to cost, efficiency and safety.

Committee Meeting Action: Reject

Committee Statement: This is a minimum standard. The purchaser can specify if desired.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-215 Log #1583 **Final Action: Reject**
(4.12.4)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4.12.4 to either specify a quantity of fuel or driving conditions. Also provide a test requirement that is repeatable.

Substantiation: As stated, the ambulance could be driven very conservatively for 250 miles but get far less under emergency conditions with starts and stops.

Committee Meeting Action: Reject

Committee Statement: Commercial vehicles commonly provide nominal range in their sales literature.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-216 Log #1195 **Final Action: Reject**
(4.12.5)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

The vehicle shall be capable of three fordings, without water entering patient and equipment compartments while being driven through a minimum of 8 in. (203 mm) of water, at speeds of 5 mph (8 km/hr), for a distance of at least 100 ft (30 m)

Substantiation: The proposed standard lacks data to support standard. In order to include the proposed standard it must be supported by peer reviewed scientific data that supports its utilization and establishes benefits related to cost, efficiency and safety.

Committee Meeting Action: Reject

Committee Statement: Flooding is a common natural disaster. This specification provides minimum fording capability. Purchaser may specify deeper water capability if required.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-217 Log #336 **Final Action: Reject**
(4.13)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Roadability:

Substantiation: The proposed standard is irrelevant; appropriate for heavy duty load vehicles not automotive ambulances.

Committee Meeting Action: Reject

Committee Statement: This is a minimum standard. Many ambulances are built on heavy truck chassis.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-218 Log #1810 **Final Action: Accept in Principle**
(4.13)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

4.13.3 The maximum top speed of the ambulance shall not exceed either 72 mph (116 85 mph (137 km/hr) or the manufacturer's Maximum service speed-rating for the tires installed on the ambulance average maximum speed of the model chassis when it leaves the vehicle manufacturers point of assembly, whichever is lower.

Substantiation: Well over 1/2 of the states maximum speed limits are 70 mph or greater, over 1/3 of the states are 75 mph or greater. When responding emergent ambulances should not be a hindrance to traffic. Vehicle manufacturers know the abilities of their vehicle components and design to safely travel at these speeds.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-219 Log #1048 **Final Action: Accept in Principle**
(4.13.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

4.13.1 The ambulance, when loaded to its estimated-in-service-weight CHASSIS MANUFACTURER'S MAX GVWR, shall be capable of the following performance while on dry, paved roads that are in good condition. **Substantiation:** Max GVWR Covers testing of the vehicle to its maximum potential.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-220 Log #1504 **Final Action: Accept in Principle**
(4.13.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

4.13.1 The ambulance, when loaded to its estimated-in-service-weight-CHASSIS MANUFACTURES MAX GVWR, shall be capable of the following performance while on dry, paved roads that are in good condition.

Substantiation: The current road test in AMD 017 loads the vehicle to its GVWR. Since GVWR is the heaviest weight the vehicle is rated to handle, this is a more robust limit will make this a more objective requirement.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-221 Log #1584 **Final Action: Accept**
(4.13.1 and 4.13.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Move the list of 3 items that is under 4.13.2 to be a list for 4.13.1.

Substantiation: The list of 3 items support 4.13.1, not 4.13.2.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-222 Log #1196 **Final Action: Reject**
(4.13.2)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

The determination shall be made by actual test or OEM's certified computer prediction:

(1) From a standing start, the ambulance shall be able to attain a speed of 55 mph (88 km/hr) within 25 seconds on a level road.

(2) The ambulance shall be able to maintain a speed of at least 5 mph (8 km/hr) on any grade up to 35 percent.

(3) The ambulance shall be able to maintain a speed of at least 55 mph (88 km/hr) on any grade up to 3 percent.

Substantiation: The proposed standard is irrelevant. The proposed standard appropriate for heavy duty load vehicles not automotive ambulances.

Committee Meeting Action: Reject

Committee Statement: This is a minimum standard. Many ambulances are built on heavy truck chassis.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-223 Log #18 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Brendan Kearney, Boston EMS

Recommendation: Section 4.13.3 states: the maximum speed of an ambulance shall not exceed 72 mph. Section 4.13.4 states that the same ambulance must be able to sustain a passing speed of 70 mph. This creates a very narrow window of compliance- the vehicle must be able to reach a speed of 70, but can not exceed 72 mph.

Substantiation: Section 4.13.3 states: the maximum speed of an ambulance shall not exceed 72 mph. Section 4.13.4 states that the same ambulance must be able to sustain a passing speed of 70 mph. This creates a very narrow window of compliance- the vehicle must be able to reach a speed of 70, but can not exceed 72 mph.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-224 Log #39 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Warren A. Winner, NOIBN Assoc.

Recommendation: Delete Section 4.13.3.

Substantiation: Max speed not safe and reasonable. The max speed rating on tires must not be included because of variety of tire options. Such info not available to operator of the vehicle.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP 6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R.,

Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-225 Log #58 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Delete text to read as follows:

~~4.13.3 The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.~~

Substantiation: Major portions of the Western United States have posted speed limits in excess of 65 mph. In extremely rural areas, posted speed limits may be as high as 80 mph. Restricting speed to 72 mph would may unnecessarily delay patient care, and would make the ambulance an obstacle to normal traffic flow. Having an ambulance running to an emergency at under the posted speed limit would lead to public relations and well a potential legal liability issues.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-226 Log #64 **Final Action: Accept in Principle**
(4.13.3)

Submitter: William von Zehle, Jr., Wilton Emergency Medical Services

Recommendation: Revise text to read as follows:

The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower be specified by the purchaser.

Substantiation: The proposed wording would result in ambulances that would be incapable of even attaining the legal speed limits in 13 states. It should be up to the purchaser to determine the required maximum speed. (See appendix item A.4.13.4.)

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-227 Log #74 **Final Action: Accept in Principle**
(4.13.3)

Submitter: David B. Cole, Life Line Emergency Vehicles

Recommendation: Revise text to read as follows:

4.13.3 It is recommended that the maximum top speed of the ambulance shall not exceed either 72 mph (116km/hr) or the manufacturers maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: The standard does suggest a level of safety, however how is a manufacturer able to enforce such a statement. I believe this belongs in the appendix. I also suggest that if limited to 70 mph all vehicles driving below the posted speed limits shall not be allowed to use Lights and Sirens.

How does this effect the golden 10 minutes - of life saving!

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

**1917-228 Log #82 Final Action: Accept in Principle
(4.13.3)**

Submitter: Christopher S. Schultz, Mountain Ambulance Service

Recommendation: Revise text to read as follows:

4.13.3 The maximum top speed of the ambulance shall not exceed either 84 72 mph (135 H6 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: Ford E series vehicles speed is governed at 84 mph. The standard tires that Ford E Series vehicles have supplies are rated at speed rating "R" or 106 mph. It should not be the responsibility of ambulance modular box manufacturer to change OEM speed settings. Throughout much of the United States the speed for normal driving is set at 70 mph. It would not be prudent to restrict emergency vehicles speed lower than that of the everyday driver on the road. This causes a safety hazard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

**1917-229 Log #85 Final Action: Accept in Principle
(4.13.3)**

Submitter: Michael Gardner, WARsaw - Lincoln Ambulance District

Dan Albrecht, Tri-Township EMS (Log #895)

Charles W. Anderson, Callaway County Ambulance District (Log #1737)

Charles Ansley, MedFlight of Ohio (Log #807)

Tony Anteau, Medicare Ambulance (Log #782)

Scott Ballard, Ballard Ambulance (Log #996)

Marcus Barnett, Logan Co. EMS (Log #751)

William Barratt, Wolcott Volunteer Ambulance (Log #1352)

Michael A. Barrow, Mobile Medical Response, Inc. (Log #797)

Bob Barry, California Ambulance Association (Log #879)

David Batson, MedRide Oklahoma Critical Care Transport (Log #864)

Shawn Baumgartner, Valley Ambulance Services, Inc. (Log #1001)

Jeffrey D. Benson, Millcreek Paramedic Service (Log #1729)

Homer Berlew, Trans-Med Ambulance, Inc. (Log #1317)

Lori Blackburn, Fayette County Memorial Hospital EMS (Log #1157)

Jim Borkowski, Medstar Ambulance (Log #676)

Richard Bowers, Exetor Ambulance (Log #126)

Dymond Bradley, Atchison-Holt Ambulance District (Log #1708)

Gene Bradley, Professional Medical Transportation Inc. (Log #1714)

Ramona M. Bright, Tri-Community Ambulance (Log #817)

Charles P. Bryan, Jr., Tri-Community South EMS (Log #146)

Larry Burton, Adair County Ambulance District (Log #595)

Donald DeReamus, Suburban Emergency Medical Services (Log #859)

Jerry Domidion, Jessamine County EMS (Log #1434)

Jerry Donahue, Greater Columbia Medical Transport Service LP (Log #1132)

Diane Eberdt, Lodi Area EMS (Log #1465)

Harry Eccard, Ada County Paramedics (Log #1471)

Pat Edwards, White River Valley Ambulance (Log #265)

Patrick Egan, Allina Medical Transportation (Log #1732)

Alexander Fairfield, Northglenn Ambulance (Log #175)

Jack Fisher, Medic 1 Ambulance (Log #1137)

Charmian Foster, Medical Transportation Association of New Jersey (Log #1167)

Russell R. Fowler, Dekalb Ambulance Service (Log #1172)

Linda Frederiksen, Medic EMS (Log #767)

JD Fuiten, Metro West Ambulance (Log #483)

JD Fuiten, Pacific West Ambulance (Log #488)

JD Fuiten, Medix Ambulance (Log #493)

JD Fuiten, Bay Cities Ambulance (Log #498)

Mary Ann Gingrich, Medstar Ambulance (Log #301)

Ben Gresham, Pafford Medical Center (Log #1147)

Lois Griggs, Courtesy Ambulance Inc. (Log #1749)

Douglas Gruenwald, Beaumont Medical Transportation (Log #802)

Nicole Gullickson, Ameny Area EMS (Log #889)

Michael Hall, Nature Coast EMS (Log #625)

Curtis Halmarst, North Dakota EMS Association (Log #1342)

Steven Hare, Levittown-Fairless Hills Rescue Squad (Log #140)

William E. Hathaway, Town of Bennington Rescue Squad, Inc. (Log #757)

Nora Helfrich, Tri-Community South EMS (Log #971)

Ralph Hellebusch, Warren County Ambulance District (Log #1786)

Zack Helton, Pafford Medial Service (Log #829)

Robert Herceg, Ambulance Service, Inc. (Log #207)

Tony Hickerson, Central EMS (Log #772)

Scott Hicks, Medstar Ambulance (Log #691)

John Hill, Iowa EMS Association (Log #664)

Jean M. Holesko, Gillespie - Benld Area Ambulance Service (Log #165)

Mike Howard, Galesburg Hospitals' Ambulance Service (Log #777)

Jon Howell, Huntsville Emergency Medical Service, Inc. (Log #1450)

Steven Hubbard, Scott & White EMS (Log #874)

Victor Incorvaia, Pulse Medical Transportation (Log #976)

Michael Jambrosic, Champion EMS (Log #316)

Chad Jay, Kimball Health Services EMS (Log #1455)

Howard Kaplan, Exceptional Medical Transportation (Log #905)

Glenn Kasprzyk, Life Line Ambulance Service (Log #1444)

Conrad Kearns, Community EMS (Log #869)

Earl Kossuth, TransCare Corp. (Log #762)

Philip Koster, Community Ambulance Service (Log #991)

Joe Kovacs, Medstar Ambulance (Log #681)

Melissa Licon, Professional Medical Transportation Inc. (Log #1712)

Steve Long, Pleasant Hill Fire Protection District (Log #135)

Brian Lovellette, Michigan Association of Ambulance Services (Log #1719)

Mark Mallory, Titus Regional Medical Center EMS (Log #214)

Michael J. Markilinski, Guardian Angel Ambulance Services, Inc. (Log #111)

William McCarthy, Coastal Health Systems of Brevard (Log #900)

James P. McPartlon, III, Mohawk Ambulance Service (Log #251)

Mark D. Meijer, Life EMS Ambulance (Log #849)

Randy Meininger, Regional West Medical Center (Log #1152)

Michael Mellon, Emergency Medical Foundation, Inc. (Log #914)

Lyle L. Meyers, Trinity Ambulance Service (Log #986)

Jim Miara, Kings Daughters Medical Transport (Log #958)

Kolby Miller, Medstar Ambulance (Log #696)

Eric Mills, University Hospital Ambulance Service (Log #1724)

Michael E. Nagel, Cetrionia Ambulance Corps, Inc. (Log #1448)

Terry Nichols, DMCare Express (Log #812)

Jay O'Keefe, PRN Medical Transport (Log #1439)

Joseph C. Olla, Meda-Care Ambulance Corp. (Log #1322)

Bonnie Page, Western Berks Ambulance Assoc. (Log #117)

Michael Paradis, Newport Ambulance Service, Inc. (Log #1800)

Paul R. Patrick, State of Utah, Bureau of EMS and Preparedness (Log #630)

Mark Pedgwaite, Lyndon Rescue, Inc. (Log #152)

Josef H. Penner, Mecklenburg EMS Agency (Log #319)

William H. Pennington, Cameron County Ambulance Service, Inc. (Log #170)

Anne Red, Sinor Emergency Medical Service, Inc. (Log #590)

Johnny L. Red, Sinor Emergency Medical Service (Log #600)

Gregory A. Reid, React EMS (Log #1356)

Aarron Reinert, Lakes Region EMS (Log #787)

Jennifer Revels, Pafford Medial Service (Log #834)

Dennis Reynolds, VBEMS, Inc. (Log #1327)

S. Scott Rhoat, Bellefonte Emergency Medical Services, Inc. (Log #1460)

Eugene Richardson, Sullivan County Ambulance District (Log #1791)

Damian Rickard, American Ambulance Services, Inc (Log #910)

Michael Ross, Freeman Ambulance Service (Log #130)

Todd Runge, Swea City Ambulance (Log #962)

John J. Russell, Cape County Private Ambulance Service, Inc. (Log #822)

Tom Schmiedeknecht, Professional Med Team, Inc. (Log #792)

Eddie Sims, NRHS-EMSSat EMS (Log #854)

Ron Slagell, LifeCare Ambulance Service (Log #620)

Brent Smith, Hopkins County EMS (Log #222)

Julie Smith, Rural Nebraska Regional Ambulance Network (RNAN) (Log #1142)

Debra Sokota, New Paltz Rescue Squad (Log #274)

Christopher H. Stawasz, Rockingham Regional Ambulance, Inc. (Log #1337)

Terry Stecker, Siouxland Paramedics Inc. (Log #839)

Anthony Stevens, Professional Sales & Service (Log #884)

Ronald W. Thackery, American Medical Response, Inc. (Log #579)

Ronald W. Thackery, American Medical Response, Inc. (Log #605)

Tom Tornstrom, Tri-State Ambulance (Log #158)

Patrick Trinko, Shawano Ambulance Service (Log #244)

Scott Tucker, Canyon County Paramedics (Log #635)

Randy VanderHeiden, Bellingham Fire Dept. (Log #615)

Gabe VanVactor, ITS Emergency Medical Services (Log #610)

Michael Vatch, SeniorCare EMS (Log #1332)

Marianne Venditti, Medstar Ambulance (Log #686)

Charles Wadsworth, Pafford Medical Service (Log #1162)

Jo Walter, Waverly Health Center (Log #1473)

Faril A. Ward, Trans-Care, Inc. (Log #1347)

Jau Washburn, Metro Paramedic Services, Inc. (Log #1796)

Gary Watters, AMED (Log #273)

Scott Welker, Uwchlan Ambulance Corps. (Log #121)

Jerry Whetstone, Altoona Fire Department (Log #844)

Kelly Whitehead, North Flight EMS (Log #966)

Gary Wingrove, Gold Cross/Mayo Clinic Medical Transport (Log #1754)

Diane Witkowski, HealthLink Medical Transportation (Log #981)

Michael Woronka, Action Ambulance Service, Inc. (Log #261)

Richard Young, Washington County Ambulance (Log #668)

Jerry Zapolnik, Monroe Community Ambulance (Log #216)

Jerry Zapolnik, Huron Valley Ambulance (Log #1762)

Jerry Zapolnik, Jackson Community Ambulance (Log #1767)

Recommendation: Delete the following text:

~~The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.~~

Substantiation: The proposed standard is irrelevant. The proposed standard appropriate for heavy duty load vehicles not automotive ambulances. The proposal would increase liability to a user if the device failed and limited speed during the transport of an emergent patient or speed exceeded that allowed by state law. Any device of this type should be provided by the OEM and needs to make accommodation for the variances in speed allowed by state law for EMS vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-230 Log #89 **Final Action: Accept in Principle (4.13.3)**

Submitter: Patrick Ryan, Madison, WI

Recommendation: Delete the following text:

~~The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.~~

Substantiation: The proposed standard is irrelevant. The proposed standard appropriate for heavy duty load vehicles not automotive ambulances. The proposal would increase liability to a user if the device failed and limited speed during the transport of an emergent patient or speed exceeded that allowed by state law. Any device of this type should be provided by the OEM and needs to make accommodation for the variances in speed allowed by state law for EMS vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-231 Log #98 **Final Action: Accept in Principle (4.13.3)**

Submitter: Ryan Hellebusch, Warren County Ambulance District

Recommendation: Delete the following text:

~~The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.~~

Substantiation: The proposed standard is irrelevant. The proposed standard appropriate for heavy duty load vehicles not automotive ambulances. The proposal would increase liability to a user if the device failed and limited speed during the transport of an emergent patient or speed exceeded that allowed by state law. Any device of this type should be provided by the OEM and needs to make accommodation for the variances in speed allowed by state law for EMS vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-232 Log #100 **Final Action: Accept in Principle (4.13.3)**

Submitter: Al Maletto, Johnsonburg Fire Dept. Ambulance

Recommendation: Delete the following text:

~~The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.~~

Substantiation: The proposed standard is irrelevant. The proposed standard appropriate for heavy duty load vehicles not automotive ambulances. The proposal would increase liability to a user if the device failed and limited speed during the transport of an emergent patient or speed exceeded that allowed by state law. Any device of this type should be provided by the OEM and needs to make accommodation for the variances in speed allowed by state law for EMS vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-233 Log #105 **Final Action: Accept in Principle (4.13.3)**

Submitter: Timothy Hoffman, Good Samaritan Hospital

Recommendation: Delete the following text:

~~The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.~~

Substantiation: The proposed standard is irrelevant. The proposed standard appropriate for heavy duty load vehicles not automotive ambulances. The proposal would increase liability to a user if the device failed and limited speed during the transport of an emergent patient or speed exceeded that allowed by state law. Any device of this type should be provided by the OEM and needs to make accommodation for the variances in speed allowed by state law for EMS vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-234 Log #183 **Final Action: Accept in Principle (4.13.3)**

Submitter: Andrew Moffitt, Gold Cross Ambulance

Recommendation: Delete the following text:

~~The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.~~

Substantiation: The proposed standard is irrelevant. The proposed standard appropriate for heavy duty load vehicles not automotive ambulances. The proposal would increase liability to a user if the device failed and limited speed during the transport of an emergent patient or speed exceeded that allowed by state law. Any device of this type should be provided by the OEM and needs to make accommodation for the variances in speed allowed by state law for EMS vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-235 Log #186 **Final Action: Accept in Principle**
(4.13.3)

Submitter: James Finger, Regional Ambulance Service, Inc.

Recommendation: Delete the following text:

The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) of the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: The proposed standard is irrelevant. The proposed standard appropriate for heavy duty load vehicles not automotive ambulances. The proposal would increase liability to a user if the device failed and limited speed during the transport of an emergent patient or speed exceeded that allowed by state law. Any device of this type should be provided by the OEM and needs to make accommodation for the variances in speed allowed by state law for EMS vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-236 Log #191 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Stephen Williamson, EMSA

Recommendation: Delete the following text:

The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) of the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: The proposed standard is irrelevant. The proposed standard appropriate for heavy duty load vehicles not automotive ambulances. The proposal would increase liability to a user if the device failed and limited speed during the transport of an emergent patient or speed exceeded that allowed by state law. Any device of this type should be provided by the OEM and needs to make accommodation for the variances in speed allowed by state law for EMS vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-237 Log #198 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Leonard Marquez, SeniorCare EMS

Recommendation: Delete the following text:

The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) of the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: The proposed standard is irrelevant. The proposed standard appropriate for heavy duty load vehicles not automotive ambulances. The proposal would increase liability to a user if the device failed and limited speed during the transport of an emergent patient or speed exceeded that allowed by state law. Any device of this type should be provided by the OEM and needs to make accommodation for the variances in speed allowed by state law for EMS vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-238 Log #226 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Delete the following text:

4.13.3 The maximum top speed of the ambulance shall not exceed 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: Section 4.13.3 is not needed for ambulances. Ambulances normally travel on Interstate Highways to get to their hospital. Interstate Highway speeds are anywhere from 55 mph to 85 mph depending upon the area of the county you are driving in and the driving conditions of the highway with traffic. With having an ambulance traveling at a lesser speed than what other people are driving creates a traffic hazard. With patients that are in serious condition time is of the most importance. Progressive organizations put Standard Operation Procedure into place where the speed of an emergency vehicle can be no more than 10 mph over the posted speed limit. With having a vehicle monitoring system as listed in Section 4.10 Vehicle Data Recorder, this information is available to organizations to monitor their own operations.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-239 Log #305 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Charles D. Drake, SJC Industries Corporation

Recommendation: Revise text to read as follows:

4.13.3 The maximum top speed of the ambulance shall not exceed the manufacturer's maximum service speed rating for the tires installed on the ambulance.

Substantiation: The chassis manufacturer should have the responsibility to match the top speed with the tires, and according to our investigation the chassis manufacturers are wary to commit to individually programming top speeds per chassis vocations.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-240 Log #645 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Delete the following text:

4.13.3 The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: Needs to be deleted as 92% (NTEA chassis survey for ambulances) of the chassis used for ambulances this year does not have the ability to be reprogrammed to 72 mph.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-241 Log #743 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Christopher Bitner, North Area Volunteer Ambulance Corps

Recommendation: Revise text to read as follows:

4.13.3 The maximum top speed of the ambulance shall not exceed either 72 mph (H+6 132 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: Highway speed limits in some states are 75 mph. Ambulances must be able to travel at a speed comparable to surrounding traffic in order to not create a hazard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-242 Log #934 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: The 72 mph maximum speed restriction is not substantiated in the draft standard. While it is understood that safe operating speeds are an essential component of crash reduction, we are concerned that no explanation of the limitation is provided. The limit is also currently set at a speed below the 75 mph maximum speed limit in effect in many areas of the western United States. We would strongly encourage the Technical Committee to provide an adequate explanation and justification of this revolutionary requirement if it is to be included in the final standard. We would also suggest any maximum speed requirement be made in consideration of all vehicle systems and posted speed limits.

Substantiation: The maximum posted speed limit in Colorado is 75 mph. Many other states also have speed limits in excess of 70 mph <http://www.motorists.org/speed-limits/state-chart>. Standard service rating for heavy-duty light truck tires supplied by OEM is often R speed rating (106 mph). Tires designed specifically for use off-road or on certain heavy trucks may have a lower speed rating (although many heavy truck tires have a higher speed rating and are capable of sustained high-speed operation). The standard does not indicate any additional rationale for this restriction.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-243 Log #948 **Final Action: Accept in Principle**
(4.13.3)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: The 72 mph maximum speed restriction is not substantiated in the draft standard. While it is understood that safe operating speeds are an essential component of crash reduction, we are concerned that no explanation of the limitation is provided. The limit is also currently set at a speed below the 75 mph maximum speed limit in effect in many areas of the western United States. We would strongly encourage the Technical Committee to provide an adequate explanation and justification of this revolutionary requirement if it is to be included in the final standard. We would also suggest any maximum speed requirement be made in consideration of all vehicle systems and posted speed limits.

Substantiation: The maximum posted speed limit in Colorado is 75 mph. Many other states also have speed limits in excess of 70 mph <http://www.motorists.org/speed-limits/state-chart>. Standard service rating for heavy-duty light truck tires supplied by OEM is often R speed rating (106mph). Tires designed specifically for use off-road or on certain heavy trucks may have a lower speed rating (although many heavy truck tires have a higher speed rating and are capable of sustained high-speed operation). The standard does not indicate any additional rationale for this restriction.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-244 Log #951 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Kevin Sullivan, Town of Enfield - EMS Division

Recommendation: I recommend that the top speed specification be removed entirely from this standard.

Substantiation: The requirement for a maximum speed for the ambulance places unnecessary constrictions on service and vehicle manufacturers. Various circumstances dictate the appropriate operating speed for an ambulance. Some technical considerations are involved in this speed consideration. These technical considerations should be a matter of manufacturer recommendation, not a matter of universal standard. For instance, on recently purchased Dodge Type-1 ambulances, the manufacturer set a max speed of 78 mph. This restriction was based on their tires. Changes in tire manufacturing could negate the need to govern the speed at this level.

Moreover, if the manufacturer believes that the vehicle can be safely operated at 78 miles and hour, on what basis does this standard restrict the speed below that?

Lastly, the 72 mph restriction is inconsistent with the 70 mph passing speed in the next standard. It is also inconsistent with speed limited and safe traffic flows in a significant number of places across the country.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-245 Log #1011 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Thomas Lenart, CT Dept of Public Health Office of Emergency Medical Services

Recommendation: New text to read as follows:

4.13.3 The maximum top speed of the ambulance shall not exceed **either 72 mph –replace with (maximum federal speed limit on Interstate highways when fully loaded)** (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

4.13.4* The ambulance shall be capable of a sustained speed of not less than 65 mph (105 km/hr) over dry, hard

Substantiation: Ambulances frequently travel on interstates, and do some distance traveling as opposed to fire apparatus which frequently does very short local runs, setting top speed for these vehicles below the speed limit is a bit concerning.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-246 Log #1016 **Final Action: Accept in Principle**
(4.13.3)

Submitter: David Schimmel, Wayne Memorial First Aid Squad

Recommendation: Revise text to read as follows:

4.13.3 The maximum top speed of the ambulance shall not exceed either 72-mph (H+6 km/hr) **75 mph (120 km/hr)** or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: This conflicts with 5.10.2 in addition the maximum speed should be the legal speed on highways across the United States. There are many areas where the maximum speed is 75 mph this is especially important in rural areas where there can be extended transport times to get to a hospital.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-247 Log #1023 Final Action: Accept in Principle (4.13.3)**Submitter:** Jim Fingerhut, St. Charles County Ambulance District**Recommendation:** Delete text to read as follows:

The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: This section conflicts with section 4.13.4 if the ambulance must meet or exceed the passing standard. In addition many highways are posted at speeds of 70 mph. The standard should only reference the speed of the tire manufacture and the chassis builder which ever is less.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-258 (Log #CP6).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-248 Log #1029 Final Action: Accept in Principle (4.13.3)**Submitter:** Guy Balok, Plymouth, MI**Recommendation:** Delete text as follows:

The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: The maximum top speed of the ambulance shall not exceed the manufacturer's maximum service speed rating for the tires installed on the ambulance.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-258 (Log #CP6).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-249 Log #1049 Final Action: Accept in Principle (4.13.3)**Submitter:** Randy A. Hanson, American Emergency Vehicles**Recommendation:** Delete text to read as follows:

4.13.3 The maximum top speed of the ambulance shall not exceed either 72 mph (115 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: 4.13.3

A. Operating speed of ambulances is regulated by state statutes and by the operational protocol of the service provider. Regulating the top speed of a vehicle to an arbitrary rate that is even slower than the maximum speed limit in some states is inappropriate.

B. Most chassis' used for ambulances do not have provisions for governing top speed. It could be unsafe and inappropriate to require an ambulance manufacturer to devise an aftermarket device for regulating speed of vehicles.

C. It is highly likely that vehicle owners would make every effort to disable such devices if added.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-258 (Log #CP6).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-250 Log #1220 Final Action: Accept in Principle (4.13.3)**Submitter:** Jacob Spiegel, Jessup, IA**Recommendation:** Delete the following text:

4.13.3 The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: This is in direct conflict with the Maximum speed in approximately half the United States, which is 75-80 Mph, it also creates a safety issue, in that drivers of POV's will pass on the right if the ambulance is maintaining the left lane, which many do since it tends to be smoother. This also has a huge impact on the Golden Hour, the vast majority of Ambulance services in the US are not within 10 minutes of the hospital.

The Limitation of Speed falls within the realm of the State by virtue of 10th Amendment to the US Constitution.

To quote section 1.2 Purpose. "The purpose of this document is to specify minimum requirements, performance parameters, and essential criteria for the design of ground ambulances".

The purpose of this Standard is to ensure that the Ambulance is Constructed using safe measurable standardized practices. The operation of an ambulance and the limitations placed on it are outside the jurisdiction of this organization. The Tenth Amendment provides that "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people".

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-258 (Log #CP6).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-251 Log #1250 Final Action: Accept in Principle (4.13.3)**Submitter:** Rob Wilkey, Medtec Ambulance Corporation**Recommendation:** Revise text to read as follows:

The maximum top speed of the ambulance shall not exceed 72 mph (116 km/hr) or the manufacturer's maximum service speed...

Substantiation: Several customers/users require greater speeds due to long distance emergency transport.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-258 (Log #CP6).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-252 Log #1429 Final Action: Accept in Principle (4.13.3)**Submitter:** Chad Dotzler, Hennepin EMS**Recommendation:** Delete text to read as follows:

The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

Substantiation: The proposal of regulating speed to 72 mph should be deleted for a number of reasons. Some of which are safety concerns.

1.) There are speed limits that are greater than that of the NFPA proposal.

2.) A speed limited to 72 mph does not give a driver the ability to pass on the freeway, and in many instances, would not allow one to keep pace with traffic.

Ambulances are not fire apparatus and require the driver to manage vehicle operations in multiple traffic conditions, while traveling short and long distances. Our EMS program is a public hospital-based program using a dynamic deployment model. Maneuverability is essential and important for crash avoidance.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-258 (Log #CP6).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-253 Log #1477 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Revise text to read as follows:

4.13.3 The maximum top speed of the ambulance shall not exceed either ~~72 mph (116 km/hr)~~ or the manufacturer's maximum service speed rating for the tires installed on the ambulance, ~~whichever is lower.~~

Substantiation: In areas where the posted speed limit is 70 MPH or higher, limiting the speed on the ambulance may actually endanger other traffic.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-254 Log #1505 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Delete text to read as follows:

~~The maximum top speed of the ambulance shall not exceed either 72 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.~~

Substantiation: Recommend moving this to the annex as an optional item for end users to consider, based on their own driver behavioral necessity.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-255 Log #1680 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Randy M. Freiburger, Ford Motor Company

Recommendation: Delete text as follows:

~~Maximum top speed of ambulance is 72 mph.~~

Substantiation: Multiple speeds for the chassis not containable due to complexity and equipment constraints in assembly plants. Recommend using driver training.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-256 Log #1691 **Final Action: Accept in Principle**
(4.13.3)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Revise text to read as follows:

~~The maximum top speed of the ambulance shall not exceed either 80 mph or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.~~

Substantiation: Problem: Limiting speed to 72 mph will create more of a hazard on the interstate than improve. We control vehicle speed through

operator education and alerting operators with our existing VDR. Speed limitation should be a purchaser set parameter based on local needs, conditions, vehicle type, training and tire ratings.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-257 Log #1836 **Final Action: Accept in Principle**
(4.13.3)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

4.13.3 The maximum top speed of the ambulance shall not exceed either ~~72 mph (116 km/hr)~~ 85 mph (137 km/hr) or the manufacturer's ~~Maximum service speed rating for the tires installed on the ambulance~~ average maximum speed of the model chassis when it leaves the vehicle manufacturers point of assembly, whichever is lower.

Substantiation: Well over 1/2 of the states maximum speed limits are 70 mph or greater, over 1/3 of the states are 75 mph or greater. When responding emergent ambulances should not be a hindrance to traffic. Vehicle manufacturers know the abilities of their vehicle components and design to safely travel at these speeds.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-258 Log #CP6 **Final Action: Accept**
(4.13.3)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

4.13.3 The maximum top speed of the ambulance shall not exceed either ~~72 mph (124 km/hr)~~ 124 mph (116 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

4.13.4* The ambulance shall be capable of a sustained speed of not less than 65 mph (105 km/hr) over dry, hard surfaced, level roads, at sea level, and passing speeds of 70 mph (112 km/hr) when tested under normal ambient conditions.

Substantiation: Many public comments were received on the need for ambulances to be able to keep up with traffic. The national top speed appears to be 75 mph. The extra 2 mph provides some tolerance. All chassis manufacturers have the ability to limit the top speed through programming and this should not be an expensive feature.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-259 Log #741 **Final Action: Accept in Principle**
(4.13.4)

Submitter: Christopher Bitner, North Area Volunteer Ambulance Corps

Recommendation: Revise text to read as follows:

4.13.4* The ambulance shall be capable of a sustained speed of not less than ~~65 mph (105 km/hr)~~ 75 mph (121 km/hr) over dry, hard surfaced, level roads, at sea level, and passing speeds of ~~70 mph (112 km/hr)~~ 80 mph (129 km/hr) when tested under normal ambient conditions.

Substantiation: Highway speed limits in some states are 75 mph. Ambulances must be able to travel at a speed comparable to surrounding traffic in order to not create a hazard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-260 Log #1197 **Final Action: Accept in Principle**
(4.13.4)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

~~The ambulance shall be capable of a sustained speed of not less than 65 mph (105 km/hr) over dry, hard surfaced, level roads, at sea level, and passing speeds of 70 mph (112 km/hr) when tested under normal ambient conditions.~~

Substantiation: The proposed standard is irrelevant. The proposed standard does not apply automotive ambulances.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-261 Log #1771 **Final Action: Accept in Principle**
(4.13.4)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Revise text to read as follows:

4.13.4* The ambulance shall be capable of a sustained speed of not less than 65 mph (105 km/hr) sustaining the maximum vehicle speed over dry, hard surfaced, level roads, at sea level, and passing speeds of 70 mph (112 km/hr) when tested under normal ambient conditions.

Substantiation: Section 4.13.3 states the vehicle shall not exceed a maximum top speed of 72 mph (116 km/hr) or maximum service speed rating for the tires. The current version of 4.13.4 could allow for speeds greater than the tire manufacturers recommendation. By modifying to the proposed verbiage, this risk is mitigated.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-258 (Log #CP6).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-262 Log #337 **Final Action: Reject**
(4.14)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Serviceability:~~

Substantiation: The proposed standard is redundant; chassis and ambulance manufacturers have established standard that meet requirements.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no meaningful substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-263 Log #1018 **Final Action: Accept in Principle**
(4.14.2)

Submitter: David Schimmel, Wayne Memorial First Aid Squad

Recommendation: Revise text to read as follows:

4.14.2 Where special tools are required for routine service on any component of the ambulance, such tools shall be provided with the ambulance. Where the purchaser is purchasing multiple ambulances under the same contract the

purchaser may waive this requirement.

Substantiation: If purchasing multiple ambulances at a time why is it necessary to purchase multiple tools.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

4.14.2 Where special tools are required for routine service on any component of the ambulance, such tools shall be provided with the ambulance. Where the purchaser is purchasing multiple ambulances under the same contract the purchaser may specify the number of tools required.

Committee Statement: The committee wants at least one set of the required tools to service the ambulance to be supplied, however if multiple ambulances are being purchased, the purchaser can specify how many sets of tools be provided with the order.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-264 Log #1251 **Final Action: Reject**
(4.14.2)

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: None given.

Substantiation: Need to add a definition in Chapter 3 for "Routine Service".

Committee Meeting Action: Reject

Committee Statement: The term is defined in the paragraph above.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-265 Log #1198 **Final Action: Reject**
(4.14.3)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

~~Ambulance components that interfere with repair or removal of other major components shall be attached with fasteners, such as cap screws and nuts, so that the components can be removed and installed with ordinary hand tools.~~

Substantiation: The proposed standard is redundant. Chassis and Ambulance Manufacturers have established standard that meet requirements.

Committee Meeting Action: Reject

Committee Statement: Substantiation is not accurate.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-266 Log #1585 **Final Action: Accept**
(4.15.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4.15.1 to read as follows:

4.15.1 If acceptance tests are conducted ~~required~~ at the point of delivery, the purchaser shall specify the details of the tests to be performed, and they shall not be performed in a manner that requires the ambulance or a component to operate outside its designed operating range.

Substantiation: Purchasers specifying details of testing is a procurement issue and not within the scope of the document.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-267 Log #646 **Final Action: Reject**
(4.15.4)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Revise text to read as follows:

4.15.4 Certification from OEM and individual equipment manufacturers are acceptable providing they are not part of a altered system(s).

Substantiation: If the system is not altered is should be a pass thru by OEM.

Committee Meeting Action: Reject

Committee Statement: The recommended wording is unclear.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-268 Log #1273 **Final Action: Accept in Principle**
(4.15.4)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

4.15.4 Certification from OEM and individual equipment manufacturers are acceptable providing they are not part of a system(s) or altered.

Substantiation: The meaning of this section is unclear.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-269 (Log #1506).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-269 Log #1506 **Final Action: Accept**
(4.15.4)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

Certification from OEM and Individual equipment manufacturers are acceptable providing they are not part of a System(s) or altered.

Substantiation: Potential conflicts with 4.6 as sirens and siren speakers are a system and warning lights are a system and certified by the OE manufacturer to ambulance mfr. This also affects the cold start certification we have from chassis manufacturer as a system.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-270 Log #1586 **Final Action: Accept in Principle**
(4.15.4)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 4.15.4.

Substantiation: As written, the sentence does not make sense and does not seem to be related to 4.15.1. It has no "shall" requirement. It is also not numbered appropriately as there is no 4.15.2 and 4.15.3.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-269 (Log #1506).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-271 Log #294 **Final Action: Accept**
(4.16.2)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Revise text to read as follows:

4.16.2

a) Pictorial representations of circuit logic for all electrical components and wiring..."

Substantiation: Some electrical systems provide narrative on the circuit logic and not pictorial representation.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-272 Log #338 **Final Action: Reject**
(4.16.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~The ambulance manufacturer shall calculate the load distribution plan for the ambulance, and that load distribution plan be delivered with the ambulance.~~

Substantiation: The proposed standard lacks data to support standard. In order to include the proposed standard it must be supported by peer reviewed scientific data that supports its utilization and establishes benefits related to cost, efficiency and safety.

Committee Meeting Action: Reject

Committee Statement: Ambulances are often very close to being over-loaded. The weight distribution plan will help to avoid this by giving the purchaser a tool to evaluate the load capacity before loading the vehicle.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-273 Log #449 **Final Action: Accept**
(4.16.2)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

4.16.2* The ambulance manufacturer shall calculate the load distribution plan for the ambulance, and that load distribution plan be delivered with the ambulance.

Definition: Load Distribution Plan - A drawing or spreadsheet of shelves, cabinets, drawers, compartment, or otherwise storage with a maximum weight attached to each location.

Substantiation: Load Distribution is not defined in chapter 3.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-274 Log #1507 **Final Action: Reject**
(4.16.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Delete text to read as follows:

~~4.16.2 The ambulance manufacturer shall calculate the load distribution plan for the ambulance, and that load distribution plan be delivered with the ambulance.~~

Substantiation: As-built distribution is fine, but can not accommodate all potential end user items added after the fact. Even with the supplied information from the buyer this will become a major under taking as ambulance mfrs. will need weight and size of all components the end user plans to carry.

Committee Meeting Action: Reject

Committee Statement: Ambulances are often very close to being over-loaded. The weight distribution plan will help to avoid this by giving the purchaser a tool to evaluate the load capacity before loading the vehicle.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-275 Log #339 **Final Action: Reject**
(4.17)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Data Required of the Contractor:~~

Substantiation: The proposed standard is a good business policy or practice; not a standard. Purchasers or Providers should have the liberty to develop and adopt operating procedures based upon peer reviewed scientific literature or data, proven safe operating procedures or innovation, rather than having them prescribed by the NFPA.

Committee Meeting Action: Reject

Committee Statement: A minimum level of documentation is specified to ensure that the end user is provided with the data needed to operate, service, and maintain and repair the ambulance.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-276 Log #1050 **Final Action: Accept**
(4.17.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text to read as follows:

~~4.17.1 Ambulance Documentation. The contractor shall deliver with the ambulance at least one copy of the following documents:~~

~~(1) the manufacturer's record of ambulance construction details, including the following information:~~

- ~~(a) Owner's name and address~~
- ~~(b) Ambulance manufacturer, model, and serial number~~
- ~~(c) Chassis make, model, and VIN~~
- ~~(d) GAWR of front and rear axles and GVWR~~
- ~~(e) Front tire size and total rated capacity in pounds (kilograms)~~
- ~~(f) Rear tire size and total rated capacity in pounds~~
- ~~(g) Engine make, model, serial number, rated horsepower.~~
- ~~(h) Type of fuel and fuel tank capacity~~
- ~~(i) Electrical system voltage and alternator output in amps~~
- ~~(j) Battery make, model and capacity in cold cranking amps (CCA)~~
- ~~(k) Chassis transmission make, model, and serial number~~
- ~~(l) Ratios of all driving axles~~
- ~~(m) Maximum governed road speed~~
 - ~~(n) Paint manufacturer and paint number(s)~~
 - ~~(o) Company name and signature of responsible company representative~~
 - ~~(p) Documents from a certified scale showing curb weight on the front axle and rear axle(s) (without personnel and equipment).~~
 - ~~(2) Certification of compliance of the optical warning system (see 7.9.16)~~
 - ~~(3) Siren manufacturer's certification of the siren (see 7.10.1.1)~~
 - ~~(4) Written load analysis and results of the electrical system performance tests (see 9.1 and Section 9.2)~~
 - ~~(5) Certification of slip resistance of all exterior stepping, standing, and~~

walking surfaces (see 6.12)

Substantiation: Several chassis manufacturers do not offer maximum governed road speed options.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-277 Log #1508 **Final Action: Accept**
(4.17.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Delete text to read as follows:

- ~~(g) Engine make, model, serial number, rated horsepower.~~
- ~~(j) Battery make, model, and capacity in cold cranking amps (CCA)~~
- ~~(k) Chassis transmission make, model, and serial number~~
- ~~(l) Ratios of all driving axles (m) Maximum governed road speed~~

Substantiation: These items would not have much benefit to merit their inclusion in the info provided to the end-user.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-278 Log #1692 **Final Action: Reject**
(4.17.2)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Add new text to read as follows:

Manufacturer shall provide one full set of shop service manuals for the chassis

Substantiation: Problem: Chassis service manuals are essential to efficient and safe maintenance practices.

Committee Meeting Action: Reject

Committee Statement: Chassis shop manuals are not required if a purchaser contracts the service work. This is a minimum standard and the purchaser can specify shop manuals in the contract if desired.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-279 Log #200 **Final Action: Reject**
(4.17.2.3)

Submitter: David B. Cole, Life Line Emergency Vehicles

Recommendation: Add new text to read as follows:

4.17.2.3 The contractor shall deliver with the ambulance at least one set of complete operation and service documentation covering the completed ambulance and each major operating system or major component of the ambulance.

Substantiation: Given commercial chassis are used in the ambulance industry, Only the standard commercial information will be available - a note must be included to reflect this.

Committee Meeting Action: Reject

Committee Statement: A minimum level of documentation is specified to ensure that the end user is provided with the data needed to operate, service, and maintain and repair the ambulance. Documentation may be provided in an electronic format.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: This log does suggest a minimum level of documentation, without being excessive.

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-280 Log #700 **Final Action: Reject**
(4.17.2.3)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Delete the following text:

Ambulance industry uses chassis built by chassis specialists with their own manuals and technical reference libraries.

Substantiation: This would cause a high degree of redundant documentation of literature between the varied manufacturers. Also requiring As Built literature for every unit adds to overhead expense of the unit build. Quite often, the literature is lost as soon as customer takes possession of the product.

Committee Meeting Action: Reject

Committee Statement: A minimum level of documentation is specified to ensure that the end user is provided with the data needed to operate, service, and maintain and repair the ambulance. Documentation may be provided in an electronic format.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: This log does suggest a minimum level of documentation, without being excessive.

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-281 Log #1274 **Final Action: Accept in Principle**
(4.17.2.3(18))

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

4.17.2.3 (18) A material safety data sheet (MSDS) for any fluid that is specified for use on the ambulance module.

Substantiation: The intent should be clarified to include fluids specified by the ambulance manufacturer that are not provided on the chassis by the chassis manufacturer.

Committee Meeting Action: Accept in Principle

Delete 4.17.2.3(18).

Committee Statement: MSDS are readily available and covered under OSHA requirements.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-282 Log #1365 **Final Action: Reject**
(4.17.2.3.6(C))

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

The contractor shall also deliver with the ambulance the following documentation for the entire ambulance and each major operating system or major component of the ambulance: Wiring diagrams for low voltage and line voltage ambulance-specific systems to include the following information: (c) Connector pin identification.

Substantiation: This should be clarified. Is the connector required to have each position labeled or is a pictorial diagram with a reference position acceptable? Having every connector position labeled will add to the cost of each connector.

Committee Meeting Action: Reject

Committee Statement: This text refers to documentation, not labeling. Text is clear as written.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-283 Log #1591 **Final Action: Accept in Principle**
(4.17.3.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise Figure 4.17.3.1 as follows:

CERTIFIED NFPA 1917 AMBULANCE DATA

Date of Manufacture _____

Mfg By _____

Address _____

City _____

State _____ Zip _____

This ambulance conforms to NFPA 1917 in effect on the date the ambulance was contracted for:

Final Stage Ambulance Manufacturers ID

Number _____

VIN _____

OEM Chassis Model, Year of Manufacture _____

Vehicle Type _____

NOTICE: THIS VEHICLE, AS MANUFACTURED, CONFORMS TO THE PAYLOAD REQUIREMENTS OF THE FEDERAL AMBULANCE SPECIFICATION NFPA 1917, Standard for Automotive Ambulances, 2013 Edition. USERS SHALL NOT LOAD THIS VEHICLE \$ ABOVE THE GVWR, GAWRs OR EXCEED THE TOTAL USABLE PAYLOAD LISTED BELOW.

TOTAL USABLE PAYLOAD _____ lbs.

(TOTAL REMAINING WEIGHT CAPACITY OF OCCUPANTS AND CARGO USER MAY ADD)

FIGURE 4.17.3.1 Certification and Payload Label.

Substantiation: There is a conflict between figure 4.17.3.1 and 4.18 as 4.73.3 requires all the text on Figure 4.17.3.1 but Section 4.18 requires either a certification of compliance or a statement of exception. The line required by this figure that states “ This ambulance conforms to NFPA 1917 in effect on the date the ambulance was contracted for” is in conflict with 4.18 if there are exceptions.

This standard is not a federal ambulance specification but an NFPA standard and there is no such thing as a “CERTIFIED NFPA 1917 AMBULANCE”. An ambulance can be certified as meeting the requirements of NFPA 1917 but should not be referred to as an NFPA 1917 ambulance.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log #CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-284 Log #479 **Final Action: Accept in Principle**
(Figure 4.17.3.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add Figure 4.17.3.1 as follows:

Ambulance Data	
Manufactured By _____	Mo./Yr. _____
Address _____	
City _____	State _____ Zip _____
VIN _____	Job No. _____
Chassis Model _____	Statement of Exception Applies _____
Vehicle Type _____	Usable Payload (lbs)* _____
<p>This ambulance is certified by the manufacturer to conform to the edition of NFPA 1917 Standard for Automotive Ambulance in effect on the date the ambulance as contracted for subject to any applicable statement of exception as mandated by this standard.</p> <p>*Usable payload is the weight of the loose equipment, occupants, and cot as defined by NFPA 1917 Standard for Automotive Ambulances that can be carried in this ambulance without exceeding the GVWR.</p>	

Figure 4.17.3.1 Certification and Payload Label

Substantiation: The current label doesn't have any information regarding the model or build number for the FSAM. Also, it would be wise to have the certification number on each ambulance for accountability.

Committee Meeting Action: **Accept in Principle**

Committee Statement: See committee action on Proposal 1917-81 (Log #CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-285 Log #920 **Final Action: Reject**
(4.17.3.2)

Submitter: Christopher Ryan, New Jersey Department of Health and Senior Services / Rep. Office of Emergency Medical Services

Recommendation: Revise text to read as follows:

4.17.3.2 The label shall be mounted on the body (module) interior ~~in a conspicuous location~~ directly to the side or below the action panel (i.e. rear control panel).

Substantiation: The wording conspicuous is not specific enough to readily and consistently locate such document. The label needs to be in a universal area that inspectors, owners, and other staff members can locate to confirm compliance with the NFPA standards. The action panel or rear controls are conspicuous and standard in every ambulance module.

Committee Meeting Action: **Reject**

Committee Statement: Ambulance modules come in many shapes and sizes and we do not know what they may look like in the future.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-286 Log #1804 **Final Action: Accept in Principle**
(4.17.3.3)

Submitter: Suzanne Gaines, Hennepin County Public Health
Recommendation: Revise text to read as follows:

4.17.3.3 All text in Figure 4.17.3.1 shall be included on the certification and payload label.

Ambulance Data	
Manufactured By _____	Mo./Yr. _____
Address _____	
City _____	State _____ Zip _____
VIN _____	Job No. _____
Chassis Model _____	Statement of Exception Applies _____
Vehicle Type _____	Usable Payload (lbs)* _____
<p>This ambulance is certified by the manufacturer to conform to the edition of NFPA 1917 Standard for Automotive Ambulance in effect on the date the ambulance as contracted for subject to any applicable statement of exception as mandated by this standard.</p> <p>*Usable payload is the weight of the loose equipment, occupants, and cot as defined by NFPA 1917 Standard for Automotive Ambulances that can be carried in this ambulance without exceeding the GVWR.</p>	

Figure 4.17.3.1 Certification and Payload Label.

Substantiation: The wording on this Certification Label refers to a “federal ambulance specification.”

Since there is no federal agency to create such a specification, there of course is no “federal ambulance specification.”

Suggest you delete the word “federal” from your proposed certification labels, to lower your risk of legal issues (for instance, allegations of fraud).

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log #CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-287 Log #1592 **Final Action: Accept in Principle**
(4.17.4.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 4.17.4.1 to read as follows;

4.17.4.1* The completed payload calculation form in Figure 4.17.4.1 shall be provided with the ambulance, in accordance with 4.17.3.

Substantiation: There is nothing in 4.17.3 that mentions the calculations in 4.17.4.1.

Committee Meeting Action: Accept in Principle

Committee Statement: The committee renumbered 4.17.4.1 to 4.17.3.3, see committee action on 1917-81 Log #CP7

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-288 Log #481 **Final Action: Accept in Principle**
(Figure 4.17.4.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.
Recommendation: Add Figure 4.17.4.1 as follows:

CUSTOMER USABLE PAYLOAD INFORMATION	
Final Stage Ambulance Manufacturer's	
Name: _____	
OEM Chassis Year, Make, Model: _____	
1) Ambulance Model, Type, Prod. #: _____	
2) OEM GAWR – Front:	_____ lb (kg)
3) OEM GAWR – Rear:	_____ lb (kg)
4) OEM GVWR:	_____ lb (kg)
5) Minimum Payload:	_____ lb (kg)
6) Curb Weight – AS BUILT – Front Axle:	_____ lb (kg)
7) Curb Weight – AS BUILT – Rear Axle:	_____ lb (kg)
8) Total Curb Weight – AS BUILT:	_____ lb (kg)
9) CUSTOMER USABLE Total Payload AS BUILT (item 4 minus item 8):	_____ lb (kg)
10) CUSTOMER USABLE Front Axle Payload AS BUILT (item 2 minus item 6):	_____ lb (kg)
11) Total Weight of Permanently mounted Options Specified (only required if item 9 does not meet or exceed item 5): _____ lb (kg)	
12) Payload of Basic Vehicle (item 9 plus item 11) (only required if item 9 does not meet or exceed item 5): _____ lb (kg)	

Figure 4.17.4.1 Customer Usable Payload Information

Substantiation: Minimum payload is not defined.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log #CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-289 Log #1051 **Final Action: Accept in Principle**
(4.17.4.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

4.17.4.2 All text shown in Figure 4.17.4.1 shall be included. [Have drawn as art]

CUSTOMER USABLE PAYLOAD INFORMATION	
Final Stage Ambulance Manufacturer's	
Name: _____	
OEM Chassis Year, Make, Model: _____	
1) Ambulance Model, Type, Prod. #: _____	
2) OEM GAWR—Front:	_____ lb (kg)
3) OEM GAWR—Rear:	_____ lb (kg)
4) OEM GVWR:	_____ lb (kg)
5) Minimum Payload:	_____ lb (kg)
6) Curb Weight – AS BUILT – Front Axle:	_____ lb (kg)
7) Curb Weight – AS BUILT – Rear Axle:	_____ lb (kg)
8) Total Curb Weight – AS BUILT:	_____ lb (kg)
<u>accomplish</u> full compliance with this standard.	
9) CUSTOMER USABLE Total Payload AS BUILT (item 4 minus item B):	_____ lb (kg)
10) CUSTOMER USABLE Front Axle Payload AS BUILD (Item 2 minus item 6):	_____ lb (kg)
11) Total Weight of Permanently mounted Options Specified (only required if item 9 does not meet or exceed item 5): _____ lb (kg)	
12) Payload of Basic Vehicle (item 9 plus item 11) (only required if item 9 does not meet or exceed item 5): _____ lb (kg)	

FIGURE 4.17.4.1 Payload Calculation Form.

Substantiation: Minimum Payload has not been determined for each vehicle type.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log #CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-290 Log #1509 **Final Action: Accept in Principle**
(4.17.4.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

- 5) Minimum Payload: _____ lb (kg)
 11) Total Weight of Permanently Mounted Options Specified (only required if item 9 does not meet or exceed item 5): _____ lb (kg)
 12) Payload of Basic Vehicle (item 9 plus item 11) (only required if item 9 does not meet or exceed item 5): _____ lb (kg)

Substantiation: These specific items should be removed from this section as they cause a lot of confusion. Also, in general AMD found that this body of information caused more confusion than help for the end-user community. Simple is best, and the K³ spec was changed to only communicate how much payload is left on the specific vehicle through the Federal Star of Life certification label. The other info is generated too, but it is provided as part of the handbook of instruction. That way, if someone wants to get into the details, they can, but it's not part of the K³ cert label where all the numbers have caused misunderstanding. The single, remaining payload value for the specific vehicle has worked well.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log #CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-291 Log #340 **Final Action: Reject**
(4.18)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Statement of Exceptions. The entity responsible for final assembly of the ambulance shall deliver with the ambulance either a certification that the ambulance fully complies with all requirements of this standard or, alternatively, a Statement of Exceptions specifically describing each aspect of the completed ambulance that is not fully compliant with the requirements of this standard at the time of delivery.

Substantiation: The proposed standard is a good business policy or practice; not a standard. Purchasers or Providers should have the liberty to develop and adopt operating procedures based upon peer reviewed scientific literature or data, proven safe operating procedures or innovation, rather than having them prescribed by the NFPA.

Committee Meeting Action: Reject

Committee Statement: No meaningful substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-292 Log #1199 **Final Action: Reject**
(4.18)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

Statement of Exceptions:
 The entity responsible for final assembly of the ambulance shall deliver with the ambulance either a certification that the ambulance fully complies with all requirements of this standard or, alternatively, a Statement of Exceptions specifically describing each aspect of the completed ambulance that is not fully compliant with the requirements of this standard at the time of delivery.

Substantiation: The proposed standard is a good business policy or practice; not a standard. Purchasers or Providers should have the liberty to develop and adopt operating procedures based upon peer reviewed scientific literature or data, proven safe operating procedures or innovation, rather than having them prescribed by the NFPA.

Committee Meeting Action: Reject

Committee Statement: No meaningful substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-293 Log #1510 **Final Action: Reject**
(4.18.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

- 4.18.1 The Statement of Exceptions shall contain, for each noncompliant aspect of the ambulance or missing required item, the following information:
 (1) A separate listing of the section(s) of the applicable standard for which compliance is lacking
 (2) A description of the particular aspect of the ambulance that is not in compliance therewith or required equipment that is missing
 (3) A description of the further changes or modifications to the delivered ambulance that must be completed to achieve full compliance
 (4) Identification of the entity that will be responsible for making the necessary post delivery changes or modifications or for supplying and installing any missing required equipment to the ambulance to achieve full compliance with this standard

4.18.2 Prior to, or at the time of, delivery of the ambulance, the Statement of Exceptions shall be signed by an authorized agent of the entity responsible for final assembly of the ambulance and by an authorized agent of the purchasing entity, indicating mutual understanding and agreement between the parties regarding the substance thereof.

Substantiation: This section is clumsy. Listing deviations that the end user has requested as not necessary is covered under 4.18. We Recommend that exceptions be required to be noted on the NFPA cert label.

Committee Meeting Action: Reject

Committee Statement: This wording is common with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*. The committee feels that the processes and requirements for ensuring that all NFPA requirements are met should be the same between all emergency vehicles.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-294 Log #201 **Final Action: Reject**
(4.18.3)

Submitter: David B. Cole, Life Line Emergency Vehicles

Recommendation: Revise text to read as follows:

4.18.3 An ambulance that is delivered subject to a Statement of Exception other than a certification of full compliance shall not be placed in emergency service until the ambulance has been modified as necessary to accomplish full compliance with this standard or the customer agrees to non-compliance and the vehicles has full insurance and meets state compliance.

Substantiation: Given the desire to have as many people as possible follow as much of this standard as possible, not all states will comply. Many ambulance departments will comply, however if we only allow full compliance not many will comply - we need compromise.

Committee Meeting Action: Reject

Committee Statement: This wording is common with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*. The committee feels that the processes and requirements for ensuring that all NFPA requirements are met should be the same between all emergency vehicles.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: I assume NFPA wants compliance. Because it is common with 1901 is not a reason to reject.
 You cannot prevent partial compliant vehicles from being placed in service

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-295 Log #578 **Final Action: Reject**
(4.18.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~An ambulance that is delivered subject to a Statement of Exceptions other than a certification of full compliance shall not be placed in emergency service until the ambulance has been modified as necessary to accomplish full compliance with this standard.~~

Substantiation: The proposed standard is a good business policy or practice not a standard. This provision fails to account for those instances where state requirements or buyers specs aren't intended to mirror the NFPA – many vehicles are bought and are never intended to meet the proposed NFPA standards.

Committee Meeting Action: Reject

Committee Statement: This wording is common with NFPA 1901, *Standard for Automotive Fire Apparatus* and 1906, *Standard for Wildland Fire Apparatus*. The committee feels that the processes and requirements for ensuring that all NFPA requirements are met should be the same between all emergency vehicles.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: See My Explanation of Negative on 1917-294 (Log #201).

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-296 Log #581 **Final Action: Reject**
(4.18.3)

Submitter: David B. Cole, Life Line Emergency Vehicles

Recommendation: Revise text to read as follows:

4.18.3 An ambulance that is delivered subject to a Statement of Exception other than a certification of full compliance shall not be placed in emergency service until the ambulance has been modified as necessary to accomplish full compliance with this standard and the customer agrees to non-compliance and the vehicles has full insurance and meets state compliance.

Substantiation: Given the desire to have as many people as possible follow as much of this standard as possible, not all states will comply. Many ambulance departments will comply, however if we only allow full compliance not many will comply - we need compromise.

Committee Meeting Action: Reject

Committee Statement: This wording is common with NFPA 1901, *Standard for Automotive Fire Apparatus* and 1906, *Standard for Wildland Fire Apparatus*. The committee feels that the processes and requirements for ensuring that all NFPA requirements are met should be the same between all emergency vehicles.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: See My Explanation of Negative on 1917-294 (Log #201).

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-297 Log #647 **Final Action: Reject**
(4.18.3)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Delete the following text:

~~4.18.3 An ambulance that is delivered subject to a Statement of Exceptions other than a certification of full compliance shall not be placed in emergency service until the ambulance has been modified as necessary to accomplish full compliance with this standard.~~

Substantiation: NFPA does not have a policing agency so who would enforce this and who is to say what exceeds this standard. This will become a problem with some state agencies when it comes to inspections. Ask John McDonald about the calls from state inspectors.

Committee Meeting Action: Reject

Committee Statement: This wording is common with NFPA 1901, *Standard for Automotive Fire Apparatus* and 1906, *Standard for Wildland Fire Apparatus*. The committee feels that the processes and requirements for ensuring that all NFPA requirements are met should be the same between all emergency vehicles.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: See My Explanation of Negative on 1917-294 (Log #201).

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-298 Log #1511 **Final Action: Reject**
(4.18.3)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Delete text to read as follows:

~~An ambulance that is delivered subject to a Statement of Exceptions other than a certification of full compliance shall not be placed in emergency service until the ambulance has been modified as necessary to accomplish full compliance with this standard.~~

Substantiation: This would seem to preclude the ability for end users to take the exceptions allotted in 4.18, and it is unclear how authority over this would be part of the scope of this Standard.

Committee Meeting Action: Reject

Committee Statement: This wording is common with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*. The committee feels that the processes and requirements for ensuring that all NFPA requirements are met should be the same between all emergency vehicles.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: See My Explanation of Negative on 1917-294 (Log #201).

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-299 Log #341 **Final Action: Reject**
(5.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~5.1 Carrying Capacity:~~

Substantiation: The proposed standard is redundant; current standards already exist for determining type of chassis for automotive ambulance.

Committee Meeting Action: Reject

Committee Statement: No meaningful substantiation. Substantiation does not support the recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-300 Log #1512 **Final Action: Accept in Principle**
(5.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

5.1.1 The manufacturer shall establish the ~~estimated in-service weight~~ necessary chassis GVWR during the design of the ambulance.

5.1.2 The GVWR ~~estimated in-service weight~~ shall include the following:

(3) Equipment load prescribed by the purchaser. If not specified then use 500lbs. for Type II, 750lbs for Type I/III and 1250 for AD.

(6) Patient cot

Substantiation: A weight distribution needs to work backwards from the application to arrive at the proper GVWR/GAWR and wheelbase needed for the chassis, which is then compared to what is offered by the chassis mfrs to select the appropriate one. This section and the related ones should really be overhauled to reflect this, but the minimum changes are noted. Also, the cot should be listed as part of customer equipment as in item 3. A Power Load cot can be an extra 90 to 100 pounds more.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log #CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-301 Log #1811 **Final Action: Reject**
(5.1)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

- 5.1 Carrying Capacity.
 - 5.1.1 The manufacturer shall establish the estimated in-service weight during the design of the ambulance.
 - 5.1.2 The estimated in-service weight shall include the following:
 - (1) The chassis and body
 - (2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs
 - (3) Equipment load prescribed by the purchaser
 - (4) 171 lb (78 kg) in each designated seating position (only 2 seats in patient compartment need to be figured)
 - (5) 171 lb (78 kg) to account for patient
 - (6) Patient cot
- 2. 200 lb (91 kg) spare capacity

Substantiation: In most states only two (2) EMT's are required to be in the vehicle which means only one (1) is required in patient compartment, but many units respond with three (3) personnel one(1) driver and two(2) attendants. In the few cases where there might be a third attendant in the patient compartment the 200 pound spare capacity would cover the additional weight.

Committee Meeting Action: Reject

Committee Statement: The vehicle needs to be capable of carrying as many people as there are seat belts since that is the number than can be carried. The fact that there are usually fewer people is not relevant.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-302 Log #1837 **Final Action: Reject**
(5.1)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

- 5.1 Carrying Capacity.
 - 5.1.1 The manufacturer shall establish the estimated in-service weight during the design of the ambulance.
 - 5.1.2 The estimated in-service weight shall include the following:
 - (1) The chassis and body
 - (2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs
 - (3) Equipment load prescribed by the purchaser
 - (4) 171 lb (78 kg) in each designated seating position (only 2 seats in patient compartment need to be figured)
 - (5) 171 lb (78 kg) to account for patient
 - (6) Patient cot
- 2. 200 lb (91 kg) spare capacity

Substantiation: In most states only two (2) EMT's are required to be in the vehicle which means only one (1) is required in patient compartment, but many units respond with three (3) personnel one(1) driver and two(2) attendants. In the few cases where there might be a third attendant in the patient compartment the 200 pound spare capacity would cover the additional weight.

Committee Meeting Action: Reject

Committee Statement: The vehicle needs to be capable of carrying as many people as there are seat belts since that is the number than can be carried. The fact that there are usually fewer people is not relevant.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-303 Log #1010 **Final Action: Reject**
(5.1(4), (5), (6), and (7))

Submitter: Thomas Lenart, CT Dept of Public Health Office of Emergency Medical Services

Recommendation: New text to read as follows:

- 5.1.2 The estimated in-service weight shall include the following (1) the chassis and body (2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoir (3) Equipment load prescribed by the purchaser (4) **171 lb Change 200 lbs** (78 kg) in each designated in each designated seating position (5) **171 lb Change 200 lbs** (78 kg) to account for patient (6) Patient cot **Add 150 Lbs** (7) 200 lb (91 kg) spare capacity

Substantiation: 5.1 (4), (5), (6), (7) specifies estimated crew weight of 171lbs in each seating capacity, it also specifies 171lbs, for patient, comment was most of our patients far exceed 171 lbs, on average, should be increased. Patient cot weight not specified, currently there are a number of cots available that can affect the total cot weight, electric models with batteries which add significant weight to the cot, air assisted units which vary from the normal manually operated cots and then bariatric cots which many services are now using. There should be a total max weight identified.

Committee Meeting Action: Reject

Committee Statement: The committee believes that 171 lb is a reasonable weight given the fact that the ambulance will normally not have all the designated seating positions occupied.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-304 Log #1052 **Final Action: Accept in Principle**
(5.1.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

5.1.1 The manufacturer shall establish the estimated in-service weight **MAXIMUM OEM WEIGHT** during the design of the ambulance.

Substantiation: Some ambulance chassis platforms have a specific UVW rating that must be complied with for FMVSS certification obligations. Determining an estimated in-service weight is unnecessary.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log # CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-305 Log #83 **Final Action: Reject**
(5.1.2)

Submitter: Christel Kalweit, West Barnstable Fire Department

Recommendation: Revise text to read as follows:

The estimated in-service weight shall include the following:

- (1) The chassis and body
- (2) Full Fuel, lubricant, and other chassis or component fluid tanks or reservoirs
- (3) Equipment load prescribed by the purchaser
- (4) 171 lb (78 kg) in each designated seating position
- (5) ~~171 lb (78 kg) to account for the patient~~ (245 lb (111 kg) to account for the patient)
- (6) Patient cot
- (7) 200 lb (91kg) spare capacity

Substantiation: Currently the weight accounted for the patient is 171 lb when establishing the ambulance load. The patient weight used for calculating the ambulance load should be 245 lb. This represents the 90th percentile weight of American males 20 years of age and older for all races and ethnicity groups according to the Center for Disease Control's National Statistic Reports, Number 10, October 22, 2008, Page 8. (The 90th percentile weight for American women 20 years of age and older for all races and ethnicity groups is 224 lb).

Committee Meeting Action: Reject

Committee Statement: The committee believes that 171 lb is a reasonable weight given the fact that the ambulance will normally not have all the designated seating positions occupied.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-306 Log #86 **Final Action: Reject**
(5.1.2)

Submitter: Michael Gardner, WARsaw - Lincoln Ambulance District

Dan Albrecht, Tri-Township EMS (Log #896)
Charles W. Anderson, Callaway County Ambulance District (Log #1738)
Charles Ansley, MedFlight of Ohio (Log #808)
Tony Anteau, Medcare Ambulance (Log #783)
Charles Ashworth, Alert Ambulance Service Inc. (Log #673)
Scott Ballard, Ballard Ambulance (Log #997)
William Barratt, Wolcott Volunteer Ambulance (Log #1353)
Michael A. Barrow, Mobile Medical Response, Inc. (Log #798)
Bob Barry, California Ambulance Association (Log #880)
David Batson, MedRide Oklahoma Critical Care Transport (Log #865)
Shawn Baumgartner, Valley Ambulance Services, Inc. (Log #1002)
Jeffrey D. Benson, Millcreek Paramedic Service (Log #1730)
Homer Berlew, Trans-Med Ambulance, Inc. (Log #1318)
Lori Blackburn, Fayette County Memorial Hospital EMS (Log #1158)
Jim Borkowski, Medstar Ambulance (Log #677)
Richard Bowers, Exetor Ambulance (Log #127)
Dymond Bradley, Atchison-Holt Ambulance District (Log #1709)
Gene Bradley, Professional Medical Transportation Inc. (Log #1715)
Ramona M. Bright, Tri-Community Ambulance (Log #818)
Charles P. Bryan, Jr., Tri-Community South EMS (Log #147)
Larry Burton, Adair County Ambulance District (Log #596)
Donald DeReamus, Suburban Emergency Medical Services (Log #860)
Jerry Domidion, Jessamine County EMS (Log #1433)
Jerry Donahue, Greater Columbia Medical Transport Service LP (Log #1133)
Diane Eberdt, Lodi Area EMS (Log #1466)
Pat Edwards, White River Valley Ambulance (Log #267)
Patrick Egan, Allina Medical Transportation (Log #1733)
Alexander Fairfield, Northglenn Ambulance (Log #176)
Jack Fisher, Medic 1 Ambulance (Log #1138)
Charmian Foster, Medical Transportation Association of New Jersey (Log #1168)
Russell R. Fowler, Dekalb Ambulance Service (Log #1173)
Linda Frederiksen, Medic EMS (Log #768)
JD Fuiten, Metro West Ambulance (Log #486)
JD Fuiten, Pacific West Ambulance (Log #489)
JD Fuiten, Medix Ambulance (Log #494)
JD Fuiten, Bay Cities Ambulance (Log #499)
Mary Ann Gingrich, Medstar Ambulance (Log #300)
Ben Gresham, Pafford Medical Center (Log #1148)
Lois Griggs, Courtesy Ambulance Inc. (Log #1750)
William P. Grubb, Star EMS (Log #826)
Douglas Gruenwald, Beaumont Medical Transportation (Log #803)
Nicole Gullickson, Ameny Area EMS (Log #890)
Michael Hall, Nature Coast EMS (Log #626)
Curtis Halmrast, North Dakota EMS Association (Log #1343)
Steven Hare, Levittown-Fairless Hills Rescue Squad (Log #142)
Michael Hartman, Superior Air Grand Ambulance Service (Log #139)
William E. Hathaway, Town of Bennington Rescue Squad, Inc. (Log #758)
Nora Helfrich, Tri-Community South EMS (Log #972)
Ralph Hellebusch, Warren County Ambulance District (Log #1787)
Zack Helton, Pafford Medical Service (Log #830)
Tony Hickerson, Central EMS (Log #773)
Scott Hicks, Medstar Ambulance (Log #692)
Jean M. Holesko, Gillespie - Benld Area Ambulance Service (Log #166)
Mike Howard, Galesburg Hospitals' Ambulance Service (Log #778)
Jon Howell, Huntsville Emergency Medical Service, Inc. (Log #1451)
Steven Hubbard, Scott & White EMS (Log #875)
Victor Incorvaia, Pulse Medical Transportation (Log #977)
Michael Jambrosic, Champion EMS (Log #313)
Chad Jay, Kimball Health Services EMS (Log #1456)
Howard Kaplan, Exceptional Medical Transportation (Log #906)
Glenn Kasprzyk, Life Line Ambulance Service (Log #1446)
Conrad Kearns, Community EMS (Log #870)
Earl Kossuth, TransCare Corp. (Log #763)
Philip Koster, Community Ambulance Service (Log #992)
Joe Kovacs, Medstar Ambulance (Log #682)
Steve Long, Pleasant Hill Fire Protection District (Log #136)
Brian Lovellette, Michigan Association of Ambulance Services (Log #1720)
Mark Mallory, Titus Regional Medical Center EMS (Log #257)
Michael J. Markilinski, Guardian Angel Ambulance Services, Inc. (Log #112)
William McCarthy, Coastal Health Systems of Brevard (Log #901)
James P. McPartlon, III, Mohawk Ambulance Service (Log #254)
Mark D. Meijer, Life EMS Ambulance (Log #850)
Randy Meininger, Regional West Medical Center (Log #1153)
Michael Mellon, Emergency Medical Foundation, Inc. (Log #915)
Lyle L. Meyers, Trinity Ambulance Service (Log #987)
Kolby Miller, Medstar Ambulance (Log #697)
Eric Mills, University Hospital Ambulance Service (Log #1725)

Terry Nicholls, DMCare Express (Log #813)
Jay O'Keefe, PRN Medical Transport (Log #1440)
Joseph C. Olla, Meda-Care Ambulance Corp. (Log #1323)
Bonnie Page, Western Berks Ambulance Assoc. (Log #116)
Michael Paradis, Newport Ambulance Service, Inc. (Log #1801)
Paul R. Patrick, State of Utah, Bureau of EMS and Preparedness (Log #631)
Mark Pedgwaite, Lyndon Rescue, Inc. (Log #153)
Josef H. Penner, Mecklenburg EMS Agency (Log #322)
William H. Pennington, Cameron County Ambulance Service, Inc. (Log #171)
Anne Red, Sinor Emergency Medical Service, Inc. (Log #591)
Johnny L. Red, Sinor Emergency Medical Service (Log #601)
Gregory A. Reid, React EMS (Log #1357)
Aaron Reinert, Lakes Region EMS (Log #788)
Jennifer Revels, Pafford Medical Service (Log #835)
Dennis Reynolds, VBEMS, Inc. (Log #1328)
S. Scott Rhoat, Bellefonte Emergency Medical Services, Inc. (Log #1461)
Eugene Richardson, Sullivan County Ambulance District (Log #1792)
Damian Rickard, American Ambulance Services, Inc. (Log #911)
Michael Ross, Freeman Ambulance Service (Log #131)
John J. Russell, Cape County Private Ambulance Service, Inc. (Log #823)
Tom Schmiedeknecht, Professional Med Team, Inc. (Log #793)
Eddie Sims, NRHS-EMSSat EMS (Log #855)
Ron Slagell, LifeCare Ambulance Service (Log #621)
Brent Smith, Hopkins County EMS (Log #221)
Julie Smith, Rural Nebraska Regional Ambulance Network (RNRAN) (Log #1143)
Debra Sokota, New Paltz Rescue Squad (Log #276)
Christopher H. Stawasz, Rockingham Regional Ambulance, Inc. (Log #1338)
Terry Stecker, Siouxland Paramedics Inc. (Log #840)
Anthony Stevens, Professional Sales & Service (Log #885)
Ronald W. Thackery, American Medical Response, Inc. (Log #577)
Ronald W. Thackery, American Medical Response, Inc. (Log #606)
Tom Tornstrom, Tri-State Ambulance (Log #157)
Patrick Trinko, Shawano Ambulance Service (Log #245)
Scott Tucker, Canyon County Paramedics (Log #636)
Randy VanderHeiden, Bellingham Fire Dept. (Log #616)
Gabe VanVactor, ITS Emergency Medical Services (Log #611)
Michael Vatch, SeniorCare EMS (Log #1333)
Marianne Venditti, Medstar Ambulance (Log #687)
Charles Wadsworth, Pafford Medical Service (Log #1163)
Jo Walter, Waverly Health Center (Log #1474)
Faril A. Ward, Trans-Care, Inc. (Log #1348)
Jau Washburn, Metro Paramedic Services, Inc. (Log #1797)
Gary Watters, AMED (Log #272)
Scott Welker, Uwchlan Ambulance Corps. (Log #123)
Jerry Whetstone, Altoona Fire Department (Log #845)
Kelly Whitehead, North Flight EMS (Log #967)
Gary Wingrove, Gold Cross/Mayo Clinic Medical Transport (Log #1755)
Diane Witkowski, HealthLink Medical Transportation (Log #982)
Michael Woronka, Action Ambulance Service, Inc. (Log #262)
Richard Young, Washington County Ambulance (Log #669)
Jerry Zapolnik, Monroe Community Ambulance (Log #217)
Jerry Zapolnik, Huron Valley Ambulance (Log #1763)
Jerry Zapolnik, Jackson Community Ambulance (Log #1768)

Recommendation: Delete the following text:

- The estimated in-service weight shall include the following:
 - (1) The chassis and body
 - (2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs
 - (3) Equipment load prescribed by the purchaser 171 lb (78 kg) in each designated seating position
 - (5) 171 lb (78 kg) to account for patient
 - (6) Patient cot
 - (7) 200 lb (91 kg) spare capacity

Substantiation: The proposed standard is redundant. Current standards already exist for determining type of chassis for automotive ambulance. There is a scientific evidence form anthropometric tables for humans indicating that the range of weight for workers (171 pounds) is appropriate.

Committee Meeting Action: Reject

Committee Statement: No meaningful substantiation. Substantiation does not support the recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-307 Log #90 **Final Action: Reject**
(5.1.2)

Submitter: Patrick Ryan, Madison, WI

Recommendation: Delete the following text:

The estimated in-service weight shall include the following:

- (1) The chassis and body
- (2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs
- (3) Equipment load prescribed by the purchaser 171 lb (78 kg) in each designated seating position
- (5) 171 lb (78 kg) to account for patient
- (6) Patient cot
- (7) 200 lb (91 kg) spare capacity

Substantiation: The proposed standard is redundant. Current standards already exist for determining type of chassis for automotive ambulance. There is a scientific evidence form anthropometric tables for humans indicating that the range of weight for workers (171 pounds) is appropriate.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-306 (Log #86).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-308 Log #95 **Final Action: Reject**
(5.1.2)

Submitter: Ryan Hellebusch, Warren County Ambulance District

Recommendation: Delete the following text:

- The estimated in-service weight shall include the following:
- (1) The chassis and body
 - (2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs
 - (3) Equipment load prescribed by the purchaser 171 lb (78 kg) in each designated seating position
 - (5) 171 lb (78 kg) to account for patient
 - (6) Patient cot
 - (7) 200 lb (91 kg) spare capacity

Substantiation: The proposed standard is redundant. Current standards already exist for determining type of chassis for automotive ambulance. There is a scientific evidence form anthropometric tables for humans indicating that the range of weight for workers (171 pounds) is appropriate. In addition, an analysis of more than 30,000 patient care records by AMR indicates an average patient weight of 169 pounds.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-306 (Log #86).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-309 Log #101 **Final Action: Reject**
(5.1.2)

Submitter: Al Maletto, Johnsonburg Fire Dept. Ambulance

Recommendation: Delete the following text:

- The estimated in-service weight shall include the following:
- (1) The chassis and body
 - (2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs
 - (3) Equipment load prescribed by the purchaser 171 lb (78 kg) in each designated seating position
 - (5) 171 lb (78 kg) to account for patient
 - (6) Patient cot
 - (7) 200 lb (91 kg) spare capacity

Substantiation: The proposed standard is redundant. Current standards already exist for determining type of chassis for automotive ambulance. There is a scientific evidence form anthropometric tables for humans indicating that the range of weight for workers (171 pounds) is appropriate.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-306 (Log #86).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-310 Log #106 **Final Action: Reject**
(5.1.2)

Submitter: Timothy Hoffman, Good Samaritan Hospital

Recommendation: Delete the following text:

- The estimated in-service weight shall include the following:
- (1) The chassis and body
 - (2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs
 - (3) Equipment load prescribed by the purchaser 171 lb (78 kg) in each designated seating position
 - (5) 171 lb (78 kg) to account for patient
 - (6) Patient cot
 - (7) 200 lb (91 kg) spare capacity

Substantiation: The proposed standard is redundant. Current standards already exist for determining type of chassis for automotive ambulance. There is a scientific evidence form anthropometric tables for humans indicating that the range of weight for workers (171 pounds) is appropriate.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-306 (Log #86).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-311 Log #180 **Final Action: Reject**
(5.1.2)

Submitter: Andrew Moffitt, Gold Cross Ambulance

Recommendation: Delete the following text:

- The estimated in-service weight shall include the following:
- (1) The chassis and body
 - (g) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs
 - (3) Equipment load prescribed by the purchaser 171 lb (78 kg) in each designated seating position
 - (5) 171 lb (78 kg) to account for patient
 - (13) Patient cot
 - (7) 200 lb (91 kg) spare capacity

Substantiation: The proposed standard is redundant. Current standards already exist for determining type of chassis for automotive ambulance. There is scientific evidence from anthropometric tables for humans indicating that the range of weight for workers (171 pounds) is appropriate.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-306 (Log #86).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-312 Log #189 **Final Action: Reject**
(5.1.2)

Submitter: James Finger, Regional Ambulance Service, Inc.

Recommendation: Delete the following text:

- The estimated in-service weight shall include the following:
- (1) The chassis and body
 - (g) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs
 - (3) Equipment load prescribed by the purchaser 171 lb (78 kg) in each designated seating position
 - (5) 171 lb (78 kg) to account for patient
 - (13) Patient cot
 - (7) 200 lb (91 kg) spare capacity

Substantiation: The proposed standard is redundant. Current standards already exist for determining type of chassis for automotive ambulance. There is scientific evidence from anthropometric tables for humans indicating that the range of weight for workers (171 pounds) is appropriate.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-306 (Log #86).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-313 Log #192 **Final Action: Reject**
(5.1.2)

Submitter: Stephen Williamson, EMSA

Recommendation: Delete the following text:

The estimated in-service weight shall include the following:

(1) The chassis and body

(g) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs

(3) Equipment load prescribed by the purchaser 171 lb (78 kg) in each designated seating position

(5) 171 lb (78 kg) to account for patient

(13) Patient cot

(7) 200 lb (91 kg) spare capacity

Substantiation: The proposed standard is redundant. Current standards already exist for determining type of chassis for automotive ambulance. There is scientific evidence from anthropometric tables for humans indicating that the range of weight for workers (171 pounds) is appropriate.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-306 (Log #86).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-314 Log #197 **Final Action: Reject**
(5.1.2)

Submitter: Leonard Marquez, SeniorCare EMS

Recommendation: Delete the following text:

The estimated in-service weight shall include the following:

(1) The chassis and body

(g) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs

(3) Equipment load prescribed by the purchaser 171 lb (78 kg) in each designated seating position

(5) 171 lb (78 kg) to account for patient

(13) Patient cot

(7) 200 lb (91 kg) spare capacity

Substantiation: The proposed standard is redundant. Current standards already exist for determining type of chassis for automotive ambulance. There is scientific evidence from anthropometric tables for humans indicating that the range of weight for workers (171 pounds) is appropriate.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-306 (Log #86).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-315 Log #212 **Final Action: Reject**
(5.1.2)

Submitter: Matthew Zavatsky, MedStar EMS

Recommendation: Revise text to read as follows:

(4) 171 lb 230 lb (78 105 kg) in each designated seating position

(5) 171 lb 230 lb (78 105 kg) to account for patient

Substantiation: Most providers and patients are NOT 171 lbs - needs to accommodate larger patients and crew.

Committee Meeting Action: Reject

Committee Statement: The committee believes that 171 lb is a reasonable weight given the fact that the ambulance will normally not have all the designated seating positions occupied.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-316 Log #452 **Final Action: Reject**
(5.1.2)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

5.1.2 The estimated in-service weight shall include the following:

(1) The chassis and body

(2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs

(3) Equipment load prescribed by the purchaser

(4) 200lb 171 lb (78 kg) in each designated seating position

(5) 171 lb (78 kg) to account for patient

(6) Patient cot

(7) 200 lb (91 kg) spare capacity

Substantiation: Ford body builder handbook (2007, 2008, 2009, etc...) calls for a 400 lb passenger load on a stripped/cutaway chassis. Until you can convince Ford to change the weight for designated seating position to 171 we should keep it at 200 lbs for each designated seating position.

Committee Meeting Action: Reject

Committee Statement: The committee believes that 171 lb is a reasonable weight given the fact that the ambulance will normally not have all the designated seating positions occupied.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-317 Log #648 **Final Action: Accept in Principle**
(5.1.2)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Delete the following text:

(6) Patient cot.

Substantiation: Item (6) cot should be included as part of the buyer's stated equipment weight due to the fact power cots can be add extra 90 lbs to 100 lbs more than the manual cots.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log #CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-318 Log #1053 **Final Action: Accept in Principle**
(5.1.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

5.1.2 The GVWR estimated in-service weight shall include the following:

(1) The chassis and body

(2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs

(3) Equipment load prescribed by the purchaser

(4) 171 lb (78 kg) in each designated seating position

(5) 171 lb (78 kg) to account for patient

(6) Patient cot

(7) 200 lb (91 kg) spare capacity

Substantiation: Each ambulance chassis platform has a specific GVWR ratings and some have specific UVW ratings that must be complied with for FMVSS certification obligations. Determining and estimated in-service weight is unnecessary.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log # CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-319 Log #1594 **Final Action: Reject**
(5.1.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Combine 5.1.2 (3) and 5.1.2(7) into a single minimum weight for design purposes.

Raise the personnel weight to at least 200 lb (90 kg) in 5.1.2 (4) and 5.1.2(5) **Substantiation:** The manufacturer needs minimums to design to and cannot base the equipment load on what a purchaser may or may not prescribe. This is a minimum standard for an ambulance, not a purchase specification. An ambulance built as a demonstrator or stock unit does not have a purchaser when it is designed. A purchaser can specify an equipment load weight in excess of the minimum but there has to be a starting point which this standard should specify.

People are getting heavier and 171 lb is too light for an average. NFPA 1901 is using 250 lb for each seating position but that includes an allowance for the weight of personal protective equipment as well. Many ambulances are staffed by these same fire fighters.

Committee Meeting Action: Reject

Committee Statement: The committee believes that 171 lb is a reasonable weight given the fact that the ambulance will normally not have all the designated seating positions occupied.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-320 Log #1420 **Final Action: Reject**
(5.1.2(4))

Submitter: David Paananen, West Barnstable Fire Department

Recommendation: Revise text to read as follows:

(4) ~~171 lb (78 kg)~~ **260 lb (118 kg)** in each designated seating position.

Substantiation: The crew member weight used for calculating the ambulance load should be 260 lb per crew member. This represents the 90th percentile weight of firefighters in street clothing according to the Fire Apparatus Manufacturer's Association, Firefighter Anthropometric Data White Paper; FAMA Technical Committee Chassis Subcommittee dated October 20, 2007.

Committee Meeting Action: Reject

Committee Statement: The committee believes that 171 lb is a reasonable weight given the fact that the ambulance will normally not have all the designated seating positions occupied.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-321 Log #25 **Final Action: Reject**
(5.1.2(4) and (5))

Submitter: Steve Benotti, Hampton Fire/Rescue

Recommendation: Revise text to read as follows:

(4) ~~171 (78 kg)~~ in each designated seating position. **(250 (114 kg))**

(5) ~~171 (78 kg)~~ in each designated seating position. **(250 (114 kg))**

Substantiation: 250 lb. per position is more standard w/ other NFPA apparatus documents 1901 for example. It also is more realistic in the weight of both rescue personnel as well as patients 171 lb. does not even meet the average American weight of 191 for a male.

Committee Meeting Action: Reject

Committee Statement: The committee believes that 171 lbs is a reasonable weight given the fact that the ambulance will normally not have all the designated seating positions occupied.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-322 Log #1054 **Final Action: Accept in Principle**
(5.1.3)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

5.1.3 The manufacturer shall design the ambulance such that the completed ambulance, when loaded PROPERLY if its estimated in-service weight, with all movable weights distributed as close as is practical to their intended in-service configuration, does not exceed the GVWR or GAWRs.

Substantiation: Each ambulance chassis platform has specific GVW rates some have specific UVW ratings that must comply with FMVSS certification obligations determining that an estimated in-service weight is unnecessary.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log # CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-323 Log #1513 **Final Action: Accept in Principle**
(5.1.3)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

5.1.3 The manufacturer shall design the ambulance such that the completed ambulance, when loaded PROPERLY to its estimated in-service weight, with all movable weights distributed as close as is practical to their intended in-service configuration, does not exceed the GVWR or GAWRs.

Substantiation: Getting the level of detail necessary from the end-user to do this is highly unlikely. Water level loading the remaining cargo to the vehicle GVWR with whatever additional info information can be gathered is completely reasonable method to provide safe loading and ensuring a proper chassis/specification selection.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log #CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-324 Log #921 **Final Action: Reject**
(5.1.4.2)

Submitter: Kenneth Beym, New Jersey Department of Health and Senior Services / Rep. Office of Emergency Medical Services

Recommendation: Revise text to read as follows:

5.1.4.2* The label shall show the height of the completed ambulance in feet and inches or in meters, and the GVWR in tons or metric tons. All United States delivered vehicles shall include standard units.

Substantiation: Requiring ambulances that are delivered or manufactured in the US to use standard units will prevent errors when converting from the metric system. Standard units should be used on all US ambulances.

Committee Meeting Action: Reject

Committee Statement: Committee is developing a standard for global use. There is no disadvantage to providing both US and SI units.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-325 Log #956 **Final Action: Reject**
(5.1.4.2)

Submitter: Christopher Ryan, New Jersey Department of Health and Senior Services / Rep. Office of Emergency Medical Services

Recommendation: Revise text to read as follows:

5.1.4.2* The label shall show the height of the completed ambulance in feet and inches or in meters, and the GVWR in tons or metric tons. All United States delivered or manufactured ambulances shall include U.S. customary units of measure.

Substantiation: U.S. Customary Units of measure are the standard throughout the industry and is referenced in your definitions. By requiring this unit the standard is preventing errors in converting from the metric system.

Committee Meeting Action: Reject

Committee Statement: Committee is developing a standard for global use. There is no disadvantage to providing both US and SI units.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-326 Log #342 **Final Action: Reject**
(5.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

Weight Distribution:

Substantiation: Manufacturers provide by design.

Committee Meeting Action: Reject

Committee Statement: No meaningful substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-327 Log #1055 **Final Action: Accept in Principle**
(5.2.1.1)

Submitter: Randy A. Hanson, American Emergency Vehicles
Recommendation: Revise text to read as follows:

5.2.1.1 When the ambulance is loaded to its MAX GVWR estimated in-service weight, the front-to-rear weight distribution and vertical center of gravity shall be within the limits set by the chassis manufacturer.

Substantiation: GVWR is more appropriate for center of gravity calculations.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log # CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-328 Log #1514 **Final Action: Accept in Principle**
(5.2.1.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

5.2.1.1 When the ambulance is loaded to its GVWR estimated in-service weight, the front-to-rear weight distribution and vertical center of gravity shall be within the limits set by the chassis manufacturer.

Substantiation: Weight distribution and assessment of remaining axle capacity up to GAWR needs to be calculated with the vehicle loaded to the GVWR.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log #CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-329 Log #451 **Final Action: Reject**
(5.2.1.1 and 5.2.2)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

5.2.1.1 When the ambulance is loaded to its estimated in-service weight, the front-to-rear weight distribution and vertical center of gravity shall be within the limits set by the chassis manufacturer.

5.2.1.1.1 The formula “GVWR - Curb weight = Payload” shall be used for loading the compartments, shelves, and drawers.

5.2.1.1.1.1 Each compartment, shelf, or drawer shall have a 10 lb minimum rating and shall be loaded using steel “disc” style weights or sand bags for the weight distribution measurement.

5.2.1.1.1.2 A 200lb load shall be located in every area where seatbelts are located.

5.2.1.1.1.2 The balance of the payload shall be evenly distributed on the patient compartment floor.

5.2.1.1.1.3 Pictures and documentation must be included in the report showing the load on the shelf, in the drawer, or in the compartment.

5.2.2* Lateral Weight Distribution.

The vehicle, when loaded to its estimated in-service weight, shall have a side-to-side tire load variation of no more than 5 percent of the total tire load for that axle.

5.2.2.1 See section 5.2.1.1.1 thru 5.2.1.1.3.

Substantiation: If you are going to require the weight distribution to be weighed fully loaded, we must standardize how each test lab will test.

Committee Meeting Action: Reject

Committee Statement: The GVWR specification is not intended to be confirmed by lab test.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-330 Log #5 **Final Action: Accept in Principle**
(5.2.1.2)

Submitter: Dan O'Brien, Malley Industries, Inc.

Recommendation: Revise text to read as follows:

The front GAWR gross axle weight (GVW) shall be...”.

Substantiation: The GAWR is set by the OEM, but it is the vehicles gross axle weight that is influenced by the ambulance manufacturer.

Committee Meeting Action: Accept in Principle

Add definition as follows:

3.3.63.4* Gross Axle Weight (GAW). Weight of the vehicle at an axle measured at the tire-ground interfaces.

Committee Statement: Remove “R” from GAWR.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-331 Log #6 **Final Action: Accept in Principle**
(5.2.1.3)

Submitter: Dan O'Brien, Malley Industries, Inc.

Recommendation: Revise text to read as follows:

The rear GAWR gross axle weight (GVW) shall...”.

Substantiation: The GAWR is set by the OEM, but it is the vehicles gross axle weight that is influenced by the ambulance manufacturer.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-330 (Log #5).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-332 Log #1056 **Final Action: Accept in Principle**
(5.2.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

5.2.2* Lateral Weight Distribution.

The Vehicle, when loaded to its estimated in-ACTUAL CURBWEIGHT PLUS TYPE SPECIFY ALLOWANCE FOR EQUIPMENT AND OCCUPANTS service weight, shall have a side-to-side tire load variation of no more than 5 percent of the total tire load for that axle.

Substantiation: Actual curbweight plus specified allowances is a more accurate statement.

I suggest 500lb equipment allowance for type II 750lb equipment allowance for type III, 1250lb equipment allowance for AD vehicles.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log # CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-333 Log #1515 **Final Action: Accept in Principle**
(5.2.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

5.2.2* Lateral Weight Distribution. The vehicle, when loaded to its GVWR-estimated-in-service weight, shall have a side-to-side tire load variation of no more than 5 percent of the total tire load for that axle, or less if specified by the chassis manufacturer.

Substantiation: This too should be calculated at GVWR, and there may be a lower tolerance than 5% from the chassis mfr.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-81 (Log #CP7).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-334 Log #343 **Final Action: Reject**
(5.3.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Cold Start Performance Requirements:

Substantiation: Comply with current Engine/Chassis Manufacturer Standards

Committee Meeting Action: Reject

Committee Statement: The submitter provided no meaningful substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-335 Log #448 **Final Action: Reject**
(5.3.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

5.3.1 Cold Start Performance Requirements.

5.3.1.1 The chassis engine shall start and run for 5 minutes without stalling at -20°F (-29°C) 0°F (-18°C) without the use of external power or starting fluids and without the aid of engine block preheating devices (except glow plugs or combustion air pre-heater).

5.3.1.2 Compliance shall be validated by testing a substantially similar ambulance in accordance with AMD 022, Cold Engine Start Test.

5.3.1.3 The OEM may offer a letter of compliance for cold engine start if the FSAM has an electrical disconnect inhibiting battery drain from the ambulance module, communication/computer equipment, or aftermarket accessories.

Substantiation: Should the starting temperature be -20°F to match section 4.12.3?

Adding a letter of compliance will mean less testing as long as the FSAM complies with OEM Specs.

Committee Meeting Action: Reject

Committee Statement: Operating at -20 does not necessarily mean the engine must start unaided at -20. Most operations in cold climates will keep the unit in a garage or plug in a block heater at those temperatures. As a minimum standard the committee feels that cold starting at 0 degrees F is sufficient. Purchaser may specify a colder temperature if their operation requires it.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-336 Log #59 **Final Action: Reject**
(5.3.1.1)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Revise text to read as follows:

5.3.1.1 The chassis engine shall start and run for at least 5 minutes without stalling at 0°F (-18°C) without the use of external power or starting fluids and without the aid of engine block preheating devices (except glow plugs or combustion air pre-heater).

Substantiation: It does no good if the engine dies at minute six.

Committee Meeting Action: Reject

Committee Statement: Added text does not change the meaning of the standard. Committee feels that if the vehicle runs for the first 5 minutes there is no reason to expect that it will not continue to run as the engine continues to warm.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-337 Log #649 **Final Action: Accept in Principle**
(5.3.1.2)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Revise text to read as follows:

5.3.1.2 Compliance shall be validated by testing a substantially similar ambulance in accordance with AMD 022, Cold Engine Start Test or by chassis certification.

Substantiation: Should allow chassis manufacturers certification.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-338 Log #1516 **Final Action: Accept in Principle**
(5.3.1.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

5.3.1.2 Compliance shall be validated by testing a substantially similar ambulance in accordance with AMD 022, Cold Engine Start Test or by chassis manufacturer's certification.

Substantiation: If this isn't already covered elsewhere, there should be a statement allowing chassis manufacturer's pass thru compliance. It's unnecessary to have the industry testing the same engine when the chassis manufacturers already test beyond these levels.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-339 Log #344 **Final Action: Reject**
(5.3.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Indicators shall be provided to alert the driver to high engine temperature or low oil pressure conditions.

Substantiation: Comply with current Engine/Chassis Manufacturer Standards

Committee Meeting Action: Reject

Committee Statement: The submitter provided no meaningful substantiation.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-340 Log #1478 Final Action: Reject (5.3.3)**Submitter:** Ken Beers, Canandaigua Emergency Squad, Inc.**Recommendation:** Delete text to read as follows:~~5.3.3 An engine hourmeter shall be provided.~~

Substantiation: Maintenance on our fleet is based on mileage in accordance to the chassis manufacturer. If the chassis manufacturer does not provide maintenance recommendations based on hours, the requirement for an hour meter adds cost to the vehicle but provides no use.

Committee Meeting Action: Reject

Committee Statement: Engine hours are critical to understand due to the amount of idle time an ambulance may endure. An engine hour meter provides accurate representation of such increment.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-341 Log #345 Final Action: Reject (5.3.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

~~Idle reduction engine shut-down device shall be disabled if provided in accordance with federal and state exemptions.~~**Substantiation:** Comply with current Engine/Chassis Manufacturer Standards**Committee Meeting Action: Reject****Committee Statement:** The submitter provided no meaningful substantiation.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-342 Log #346 Final Action: Reject (5.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

~~5.4 Engine Speed Auxiliary Control Device:~~**Substantiation:** The proposed standard lacks data to support standard.**Committee Meeting Action: Reject****Committee Statement:** The submitter provided no meaningful substantiation.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-343 Log #1812 Final Action: Reject (5.4)**Submitter:** Glen Oliphant, La Farge, WI**Recommendation:** Revise text to read as follows:

5.4 Engine Speed Auxiliary Control Device.

5.4.1* An engine speed auxiliary control device (high idle switch or throttle) shall be installed to allow an increase in the engine speed when the ambulance is parked.

5.4.2 An interlock shall prevent the operation of the engine speed auxiliary control device unless the ~~parking brake is engaged and~~ the transmission is in ~~neutral or park if vehicle is equipped with an automatic transmission, or if~~

~~equipped with a manual transmission the vehicle is in neutral and~~ the parking brake is engaged and the engine is disengaged from the drive wheels.

Substantiation: In cold climates in particular when slush is on the roads**Committee Meeting Action: Reject**

Committee Statement: The committee feels that the original wording is clear and does not understand how the revised wording ties in with the substantiation. Also, the revised text does not account for the way an AD on an air-braked chassis will operate.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-344 Log #1838 Final Action: Reject (5.4)**Submitter:** John Matthes, Kickapoo Valley Rescue Squad**Recommendation:** Revise text to read as follows:

5.4 Engine Speed Auxiliary Control Device.

5.4.1* An engine speed auxiliary control device (high idle switch or throttle) shall be installed to allow an increase in the engine speed when the ambulance is parked.

5.4.2 An interlock shall prevent the operation of the engine speed auxiliary control device unless the ~~parking brake is engaged and~~ the transmission is in ~~neutral or park if vehicle is equipped with an automatic transmission, or if~~ equipped with a manual transmission the vehicle is in neutral and the parking brake is engaged and the engine is disengaged from the drive wheels.

Substantiation: In cold climates in particular when slush is on the roads parking brakes can freeze.

Committee Meeting Action: Reject

Committee Statement: The committee feels that the original wording is clear and does not understand how the revised wording ties in with the substantiation. Also, the revised text does not account for the way an AD on an air-braked chassis will operate.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-345 Log #650 Final Action: Accept (5.4.1)**Submitter:** Fred Schimmel, SJC Industries Corporation**Recommendation:** Revise text to read as follows:

5.4.1* An engine speed auxiliary control device (high idle switch, throttle or automatic voltage monitor) shall be installed to allow an increase in the engine speed when the ambulance is parked.

Substantiation: Add automatic voltage monitor to verbiage.**Committee Meeting Action: Accept****Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-346 Log #745 Final Action: Reject (5.4.1)**Submitter:** John J. Russell, Cape County Private Ambulance Service, Inc.**Recommendation:** Delete the following text:

~~An engine speed auxiliary control device (high idle switch or throttle) shall be installed to allow an increase in the engine speed when the ambulance is parked.~~

Substantiation: This should be an OEM item if needed at all. High idle contributes to wasted fuel, increased pollution, and noncompliance with diesel engine exhaust environmental standards in some states. High output alternators built by Bosch and Valeo that generate maximum amperage output at idle RPM speeds (600 rpm) are available for most ambulance chassis currently being

built. High idle interferes with DPF/EGR performance and regeneration with negative effects on length of life of those parts of the exhaust system and after market add-ons frequently nullify OEM power train and exhaust component warranties.

Committee Meeting Action: Reject

Committee Statement: The submitters substantiation assumes that the only reason for high idle is to generate sufficient electrical power. Committee feels every ambulance should have a high idle setting to provide sufficient heating or cooling when parked.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-347 Log #1200 **Final Action: Reject**
(5.4.1)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

~~An engine speed auxiliary control device (high idle switch or throttle) shall be installed to allow an increase in the engine speed when the ambulance is parked.~~

Substantiation: The proposed standard lacks data to support standard.

Committee Meeting Action: Reject

Committee Statement: The submitters substantiation assumes that the only reason for high idle is to generate sufficient electrical power. Committee feels every ambulance should have a high idle setting to provide sufficient heating or cooling when parked.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-348 Log #1517 **Final Action: Accept in Principle**
(5.4.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

5.4.1* An engine speed auxiliary control device (high idle switch or ~~throttle~~ automatic voltage monitor) shall be installed to allow an increase in the engine speed when the ambulance is parked.

Substantiation: Revise to reflect charge protection feature/function.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-345 (Log #650).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-349 Log #347 **Final Action: Reject**
(5.5)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Cooling System:~~

Substantiation: Follow manufacturer recommendation.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no meaningful substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-350 Log #453 **Final Action: Reject**
(5.5)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

5.5 Cooling System.

5.5.1* The engine's cooling system shall maintain a temperature at or below the engine manufacturer's maximum coolant temperature.

5.5.2 Compliance of the engine's cooling system shall be validated by testing a substantially similar ambulance in a 110°F (44°C) environment, at high idle, with the minimum electrical load operating for one hour at which point the engine temperature indicator on the vehicle's dashboard must not be in the "red zone". ~~accordance with AMD 014, Engine Cooling System Test-~~

Substantiation: Making the temperature 110°F to reflect section 4.12.3. Also worst case scenario (Arizona in July with the ambulance on scene over hot pavement).

Committee Meeting Action: Reject

Committee Statement: Submitter appeared to pull text from incorrect document.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-351 Log #61 **Final Action: Reject**
(5.5.1)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Revise text to read as follows:

5.5.1* The engine's cooling system shall maintain a temperature at or below the engine manufacturer's maximum coolant temperature.

Substantiation: Consider a performance specification. This should include a discussion of what load ranges within what ambient temperature ranges.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-352 Log #1479 **Final Action: Reject**
(5.5.1)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Revise text to read as follows:

5.5.1* The engine's cooling system shall maintain a temperature at or below the manufacturer's maximum coolant temperature while parked with all emergency lighting on for a period of at least 30 minutes.

Substantiation: Without a testing standard for a load and time, the statement is not beneficial. Adding a load requirement and minimum time is necessary to provide for a measurable standard.

Committee Meeting Action: Reject

Committee Statement: The test section provides load and time requirements.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-353 Log #348 **Final Action: Reject**
(5.6.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Revise text to read as follows:

The tailpipe outlet shall not terminate within 12 in. (300 mm) of the vertical axis of the fuel fill opening, oxygen storage, or patient entry doors ~~when these features are located on the same side of the vehicle~~.

Substantiation: The proposed standard poses a safety issue. The features on the same side of vehicle are irrelevant; tailpipe must not be within 12 in of any identified feature regardless of side.

Committee Meeting Action: Reject

Committee Statement: If the feature is on one side of the vehicle and the exhaust exits on the opposite side, then there is no safety issue.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-354 Log #652 **Final Action: Reject**
(5.6.3)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Revise text to read as follows:

5.6.3 The tailpipe outlet shall not terminate within 12 in. (300 mm) of the vertical axis of the fuel fill opening, or oxygen storage, or patient entry doors when these features are located on the same side of the vehicle.

Substantiation: On Navistar chassis if the department has a PlymoVent system that is on the right side it will only come out in front of the right rear tires by the side entry door. Navistar does not have an exhaust that will go over the rear axle with their air ride suspension.

Committee Meeting Action: Reject

Committee Statement: Navistar can change their design so it is safe.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-355 Log #1518 **Final Action: Reject**
(5.6.3)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Add new text to read as follows:

5.6.3 The tailpipe outlet shall not terminate within 12 in. (300 mm) of the vertical axis of the fuel fill opening, oxygen storage, or patient entry doors when these features are located on the same side of the vehicle.

Substantiation: The 12" will be a problem when Plymo vents are on the right side as we cannot route exhaust over the rear axles on Navistar and Freightliner chassis.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-354 (Log #652).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-356 Log #349 **Final Action: Reject**
(5.6.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

If the ambulance is driven by a diesel engine equipped with a diesel particulate filter (DPF), the DPF shall not regenerate on its own unless the vehicle is in motion.

Substantiation: Follow manufacturer recommendation.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no meaningful substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-357 Log #454 **Final Action: Reject**
(5.6.4)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

5.6.4 If the ambulance is driven by a diesel engine equipped with a diesel particulate filter (DPF), the DPF shall not regenerate on its own unless the vehicle is in motion.

5.6.5 If there is a DPF installed on the vehicle there shall be an "Inhibit Regeneration" button located on the dash to allow the vehicle to reach it's destination before any engine de-rating should occur.

Substantiation: Engine de-rating should be prohibited during an emergency situations. Having a button on the dash will allow the operator to bypass for a period of time.

Committee Meeting Action: Reject

Committee Statement: De-rating rules are under the control of the EPA and cannot be influenced by this standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-358 Log #924 **Final Action: Reject**
(5.6.4)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: We recommend this section be broadened to indicate that the emissions control system of the vehicle be configured in a such a manner to accommodate routine ambulance operations that may include frequent starts, short travel distances and extended idle times. Further consideration should be given to ensuring that emission control systems do not inhibit emergency operations.

Substantiation: Recent diesel emissions control requirements have caused many ambulance chassis manufacturers to install a variety of emission control systems. Many of these systems require the vehicle be driven for a period of time to accommodate proper operation of the control system. Operational experience thus far has proven these systems to be impractical in the emergency response environment. Furthermore, failure to allow this systems to properly cycle has caused vehicle frequent service issues, increased downtime and critical vehicle failures during response that have been widely reported within our state and nationally.

Committee Meeting Action: Reject

Committee Statement: Although the committee is sympathetic to the submitters recommendations, the operation of the emissions systems is dictated by the engine manufactures responses to EPA rules and not under the control of this standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-359 Log #937 **Final Action: Reject**
(5.6.4)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: We recommend this section be broadened to indicate that the emissions control system of the vehicle be configured in a such a manner to accommodate routine ambulance operations that may include frequent starts, short travel distances and extended idle times. Further consideration should be given to ensuring that emission control systems do not inhibit emergency operations.

Substantiation: Recent diesel emissions control requirements have caused many ambulance chassis manufacturers to install a variety of emission control systems. Many of these systems require the vehicle be driven for a period of time to accommodate proper operation of the control system. Operational experience thus far has proven these systems to be impractical in the emergency response environment. Furthermore, failure to allow this systems to properly cycle has caused vehicle frequent service issues, increased downtime and critical vehicle failures during response that have been widely reported within our state and nationally.

Committee Meeting Action: Reject

Committee Statement: Although the committee is sympathetic to the submitters recommendations, the operation of the emissions systems is dictated by the engine manufactures responses to EPA rules and not under the control of

this standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-360 Log #1469 **Final Action: Accept in Part (5.6.4)**

Submitter: Dave Drehobl, Cummins Inc.

Recommendation: Add new text to read as follows:

If the ambulance is driven by a diesel engine equipped with a diesel particulate filter (DPF), the DPF shall not regenerate on its own unless the vehicle is in motion:

5.6.4 Diesel Particulate Filter. If the apparatus is driven by a diesel engine equipped with a diesel particulate filter (DPF), the requirements of 5.6.4.1 through 5.6.4.6 shall apply.

5.6.4.1 The regeneration process shall be activated by two methods:

(1) Automatically by the engine system but only when the transmission is in gear and the speedometer indicates a speed above 5 mph (8 km/hr), whether the apparatus is in motion or is operating in stationary pump mode with an engine rpm sufficient to register 5 mph (8 km/hr) on the speedometer
(2) Manually when initiated by activation of a switch located in the driver's area of the driving compartment

5.6.4.2 Instructions for initiating the manual regeneration process shall be explained in the apparatus operator's manual.

5.6.4.3 A switch shall be provided at the driver's area that will inhibit DPF regeneration until the switch is reset or the engine is shut down and restarted.

5.6.4.4 A DPF icon visible to the driver when seated in the driver's seat shall be illuminated to indicate that the DPF requires active regeneration.

5.6.4.5 A high exhaust system temperature (HEST) icon visible to the driver when seated in the driver's seat shall be illuminated to indicate that an active regeneration process has been initiated.

5.6.4.6 Engine exhaust gas temperature shall not exceed 851°F (455°C) when measured at the exit of the exhaust pipe during normal DPF regeneration.

Substantiation: Diesel engines equipped with diesel particulate filters (DPF) would not be allowed to regenerate on their own through customary 'stationary' or 'manual' regeneration commands that can only be achieved while the vehicle is in a stationary or parked position. Recommend this statement be worded to mirror that of NFPA 1901 as DPF technology is essentially the same and failure to regenerate a DPF as needed could cause damage to the engine system (engine and exhaust aftertreatment).

Committee Meeting Action: Accept in Part

Delete 5.6.4.

Committee Statement: The committee did not accept the proposed language and is deleting existing 5.6.4 from the document. Operation on the regeneration process will be at the discretion of the chassis manufacturer.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-361 Log #293 **Final Action: Accept in Principle (5.6.4(3))**

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Revise text to read as follows:

5.6.4(3) A pressure protection valve to prevent all air-operated accessories from drawing air from the air brake system when the air system's pressure drops below 80 psi (550 kPa) OEM pre-set pressure.

Substantiation: Not all air brake systems are preset at 80 psi.

Committee Meeting Action: Accept in Principle

Revise text to read:

5.7.2(3) A pressure protection valve to prevent all air-operated accessories from drawing air from the air brake system when the air system's pressure drops below a pressure setting no lower than 80 psi (550 kPa).

Committee Statement: Pressure protection should be set at no lower than 80 psi. to protect the brake system. A higher setting is fine as it will provide addition factor of safety.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-362 Log #350 **Final Action: Reject (5.7)**

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Braking System:

Substantiation: Follow manufacturer recommendation.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no meaningful substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-363 Log #1275 **Final Action: Reject (5.7.2)**

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

5.7.2 Where air-actuated braking systems are provided, they shall include the following:

(1) An automatic moisture ejector

(2) An air dryer

An air dryer and manual moisture ejector or an automatic moisture ejector

(3) (2) A pressure protection valve to prevent all air-operated accessories from drawing air from the air brake system when the air system's pressure drops below 80 psi (550 kPa)

Substantiation: With a properly operating air dryer, there will be no moisture to be removed by an automatic moisture ejector. In that case it is better to use a manual moisture ejector because it allows the operator to observe moisture discharge as evidence of air dryer malfunction. With an automatic valve, the operator would not be made aware of a dryer failure.

Committee Meeting Action: Reject

Committee Statement: All air brake systems should have an air dryer, but even with an air dryer you will still get condensation in the tank. The committee feels that automatic moisture ejectors are a safer method of ensuring that air brake tanks are kept empty of water that otherwise can accumulate in brake lines, freeze, and cause brake malfunctions.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-364 Log #351 **Final Action: Reject (5.8)**

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Suspension

Substantiation: Follow manufacturer recommendation.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no meaningful substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-365 Log #1595 **Final Action: Accept (5.8.1)**

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Reduce the approach angle from 20 degrees to 10 degrees.

Substantiation: If the approach angle needs to be 20 degrees, then the departure angle also needs to be 20 degrees. This is too stringent a requirement for a minimum standard. Fire apparatus meeting NFPA 1901 is only required to have 8 degrees. 10 degrees is reasonable as a minimum and if a purchaser has a unique operating environment, they can specify additional angles.

Committee Meeting Action: Accept

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-366 Log #1772 Final Action: Accept in Principle (5.8.1)**Submitter:** Wesley D. Chestnut, Spartan Motors, Inc.**Recommendation:** Revise text to read as follows:

~~5.8.1* With the exception of the OEM's furnished and installed components, the ambulance shall provide not less than the following clearance, measured in accordance with SAE J689:~~

(1) Approach angle 20 degrees

(2) Ramp breakover 10 degrees

(3) Departure angle 10 degrees

An angle of approach and an angle of departure of at least 8 degrees shall be maintained at the front and the rear of the vehicle when it loaded to the estimated in-service weight.

Substantiation: The current verbiage in Section 5.8.1 comes from the "K" document which is primarily a bid specification. In general, the angles given typically are associated with medium duty vehicles. In the case of heavier duty vehicles, which may allow for more customization, certain manufacturers may not be able to meet the standard. By adopting the verbiage from NFPA 1901, the minimum requirements are lower and allow for a less stringent baseline which allows for more customization in which the customer may specify higher angles.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-365 (Log #1595).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-367 Log #44 Final Action: Reject (5.8.2)**Submitter:** Fred Morrison, Eagle County Ambulance District**Recommendation:** Revised text to read as follows:

~~5.8.2* A traction control feature shall be provided.~~

Substantiation: There is no definition as to what this means.**Committee Meeting Action: Reject****Committee Statement:** There is an annex item discussing various means of providing traction control.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-368 Log #1221 Final Action: Reject (5.8.2)**Submitter:** Jacob Spiegel, Jessup, IA**Recommendation:** Revise text to read as follows:

~~5.8.2* A traction control feature shall be provided~~ Manufacturers will ensure that all chassis are ordered with some form of OEM traction control.

Substantiation: Since these features are part of the OEM chassis, Manufacturers have little or no control over if they are included. The only traction control that Manufacturers have are Automatic Chains.

Committee Meeting Action: Reject**Committee Statement:** Substantiation is not accurate. Traction control features are available.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-369 Log #1057 Final Action: Accept in Principle (5.8.3)**Submitter:** Randy A. Hanson, American Emergency Vehicles**Recommendation:** Revise text to read as follows:

~~5.8.3 Shock absorbers, SHALL BE THE OEM MANUFACTURES~~

~~RECOMMENDATIONS double-acting type, heaviest duty available from OEM for model offered, shall be furnished on the front and rear axles.~~

Substantiation: Heavy duty models recommended by the OEM manufacturer for ambulance conversions may not be the heaviest duty available for the chassis.

Ex: the sprinter Mercedes Benz does not recommend the heaviest package available.

Committee Meeting Action: Accept in Principle

5.8.3 Shock absorbers shall be furnished on the front and rear axles.

Committee Statement: This is a minimum standard, upgrades can be specified by the purchaser.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-370 Log #65 Final Action: Accept (5.8.4)**Submitter:** William von Zehle, Jr., Wilton Emergency Medical Services**Recommendation:** Revise text to read as follows:

Any ambulance with an air-ride suspension shall include an air dryer and automatic heated moisture ejection devices to ensure that the air system is provided with dry and to protect the suspension control components.

Substantiation: Paragraph as proposed needs editorial clean-up.**Committee Meeting Action: Accept****Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-371 Log #1745 Final Action: Accept in Principle (5.8.4)**Submitter:** Patrick Egan, Allina Medical Transportaiton**Recommendation:** Revise text to read as follows:

Any ambulance with an air-ride suspension shall include an air dryer and automatic heated moisture ejection devices to ensure that the air system with dry air and protect the suspension components.

Substantiation: Missing a word in the standard.**Committee Meeting Action: Accept in Principle****Committee Statement:** See committee action on Proposal 1917-370 (Log #65).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-372 Log #352 Final Action: Accept (5.9.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Wheel/tire, hubs, and brake drum assemblies of the vehicle shall be dynamically balanced to a minimum of 70 mph (113 km/hr).~~

Substantiation: Follow manufacturer recommendation.**Committee Meeting Action: Accept****Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-373 Log #1693 **Final Action: Accept in Principle**
(5.9.1)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Revise text to read as follows:

Wheel/tire, hubs and brake drum assemblies of the vehicle shall be dynamically balanced to a minimum of 70 ~~(80)~~ mph.

Substantiation: Problem: The balance speed level should exceed any max speed rating and allow some latitude for purchaser set speed limitations.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-372 (Log #352).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-374 Log #45 **Final Action: Reject**
(5.9.2)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Revised text to read as follows:

5.9.2 Hub caps or wheel covers shall not obscure the wheel nuts so that they can be readily observed for daily inspection.

Substantiation: This serves no purpose. A visual inspection only verifies the presence or absence of a lug nut. It does nothing to verify it's torque value.

Committee Meeting Action: Reject

Committee Statement: Committee believes this specification does enhance safety since part of visual inspection is to see that all the lug nuts are indeed in place.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-375 Log #1189 **Final Action: Reject**
(5.9.2)

Submitter: Michael Scantland, Phoenix USA, Inc.

Recommendation: Revise text to read as follows:

5.9.2 Hub caps or wheel covers shall be attached by mechanical means and be able to be installed and/or removed without the removal of the lug nuts in order for daily inspection of wheel nuts (lug nuts) and to inspect the condition of the wheel.

Substantiation: A wheel cover (made from stainless steel or ABS plastic) has been a commonly used and accepted form of wheel trim/covering for many years. Currently, General Motors (G-Series), Ford (E-Series), Sprinter, and Ram trucks all come standard with wheel covers and/or center hub covers on their vehicles. The NFPA 1917 standard would create a situation that would require the removal of a standard item on a vehicle from the OEM level. Also, as long as the attachment method is not "under-the-lug" (which means that some or all of the lug nuts need to be removed in order to attach the wheel liner) that the wheel covers can be removed very easily without the need of special equipment. This would allow for the lug nuts and the wheel to be inspected at the suggested interval.

Committee Meeting Action: Reject

Committee Statement: Committee believes this specification does enhance safety since part of visual inspection is to see that all the lug nuts are indeed in place.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-376 Log #1252 **Final Action: Reject**
(5.9.2)

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: Delete entire section.

Substantiation: Wheel simulators are far too common in the ambulance industry.

Committee Meeting Action: Reject

Committee Statement: Committee believes this specification does enhance safety since part of visual inspection is to see that all the lug nuts are indeed in place.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-377 Log #1276 **Final Action: Reject**
(5.9.2)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

5.9.2 Hub caps or wheel covers shall not obscure the wheel nuts so that they can be readily observed for daily inspection that obscure the wheel nuts shall be easily removable to allow periodic inspection.

Substantiation: It is not clear that daily inspection is required for properly torqued wheel nuts.

Committee Meeting Action: Reject

Committee Statement: Committee believes this specification does enhance safety since part of visual inspection is to see that all the lug nuts are indeed in place.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-378 Log #1747 **Final Action: Reject**
(5.9.2)

Submitter: Patrick Egan, Allina Medical Transportaiton

Recommendation: Delete text to read as follows:

Hub caps or wheel covers shall not obscure the wheel nuts so that they can be readily observed for daily inspection.

Substantiation: Wheel covers are acceptable and improve the look of the ambulance. Mechanics are trained in proper torque procedures eliminate the need for daily visual inspection. Without any additional product to check for tightness this is not a standard that is relevant or practical in its use. Delete the standard.

Committee Meeting Action: Reject

Committee Statement: Committee believes this specification does enhance safety since part of visual inspection is to see that all the lug nuts are indeed in place.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-379 Log #14 **Final Action: Reject**
(5.9.4)

Submitter: Patrick Freyer, Onspot of North America, Inc.

Recommendation: We request that a note for automatic tire chains be added at the end of 5.9.4 "state if an automatic tire chain system is required".

Substantiation: KKK Spec Page 23 Item 3.6.11 states clearance requirements for tire chains with SAEJ683.

KKK Spec Page 82 under "Intended use for specification" Note: Supporting material is available for review at NFPA Headquarters. Item 6.2 note ggg states: Automatic Tire Chains - specify if an automatic tire chain system is required - see 3.6.11.

Committee Meeting Action: Reject

Committee Statement: This is a minimum standard. The purchaser can specify if desired.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-380 Log #87 **Final Action: Reject**
(5.9.6)

Submitter: Michael Gardner, WARsaw - Lincoln Ambulance District

Dan Albrecht, Tri-Township EMS (Log #897)
Charles W. Anderson, Callaway County Ambulance District (Log #1739)
Charles Ansley, MedFlight of Ohio (Log #809)
Tony Anteau, Medicare Ambulance (Log #784)
Charles Ashworth, Alert Ambulance Service Inc. (Log #674)
Scott Ballard, Ballard Ambulance (Log #998)
Marcus Barnett, Logan Co. EMS (Log #752)
William Barratt, Wolcott Volunteer Ambulance (Log #1354)
Michael A. Barrow, Mobile Medical Response, Inc. (Log #799)
Bob Barry, California Ambulance Association (Log #881)
David Batson, MedRide Oklahoma Critical Care Transport (Log #866)
Shawn Baumgartner, Valley Ambulance Services, Inc. (Log #1003)
Jeffrey D. Benson, Millcreek Paramedic Service (Log #1731)
Homer Berlew, Trans-Med Ambulance, Inc. (Log #1319)
Lori Blackburn, Fayette County Memorial Hospital EMS (Log #1159)
Jim Borkowski, Medstar Ambulance (Log #678)
Richard Bowers, Exeter Ambulance (Log #128)
Charles P. Bryan, Jr., Tri-Community South EMS (Log #148)
Larry Burton, Adair County Ambulance District (Log #597)
Donald DeReamus, Suburban Emergency Medical Services (Log #861)
Jerry Domidion, Jessamine County EMS (Log #1437)
Jerry Donahue, Greater Columbia Medical Transport Service LP (Log #1134)
Jim Duke, Ohio County EMS (Log #754)
Diane Eberdt, Lodi Area EMS (Log #1467)
Pat Edwards, White River Valley Ambulance (Log #268)
Patrick Egan, Allina Medical Transportation (Log #1734)
Alexander Fairfield, Northglenn Ambulance (Log #177)
Jack Fisher, Medic 1 Ambulance (Log #1139)
Charmian Foster, Medical Transportation Association of New Jersey (Log #1169)
Russell R. Fowler, Dekalb Ambulance Service (Log #1174)
Linda Frederiksen, Medic EMS (Log #769)
JD Fuiten, Metro West Ambulance (Log #484)
JD Fuiten, Pacific West Ambulance (Log #490)
JD Fuiten, Medix Ambulance (Log #495)
JD Fuiten, Bay Cities Ambulance (Log #500)
Mary Ann Gingrich, Medstar Ambulance (Log #302)
Ben Gresham, Pafford Medical Center (Log #1149)
Lois Griggs, Courtesy Ambulance Inc. (Log #1751)
Douglas Gruenwald, Beaumont Medical Transportation (Log #804)
Nicole Gullickson, Amey Area EMS (Log #891)
Michael Hall, Nature Coast EMS (Log #627)
Curtis Halmrast, North Dakota EMS Association (Log #1344)
Steven Hare, Levittown-Fairless Hills Rescue Squad (Log #143)
William E. Hathaway, Town of Bennington Rescue Squad, Inc. (Log #759)
Nora Helfrich, Tri-Community South EMS (Log #973)
Ralph Hellebusch, Warren County Ambulance District (Log #1788)
Zack Helton, Pafford Medial Service (Log #831)
Robert Herceg, Ambulance Service, Inc. (Log #208)
Tony Hickerson, Central EMS (Log #774)
Scott Hicks, Medstar Ambulance (Log #693)
John Hill, Iowa EMS Association (Log #665)
Jean M. Holesko, Gillespie - Benld Area Ambulance Service (Log #167)
Mike Howard, Galesburg Hospitals' Ambulance Service (Log #779)
Jon Howell, Huntsville Emergency Medical Service, Inc. (Log #1452)
Steven Hubbard, Scott & White EMS (Log #876)
Victor Incorvaia, Pulse Medical Transportation (Log #978)
Michael Jambrosic, Champion EMS (Log #315)
Chad Jay, Kimball Health Services EMS (Log #1457)
Howard Kaplan, Exceptional Medical Transportation (Log #907)
Glenn Kasprzyk, Life Line Ambulance Service (Log #1445)
Conrad Kearns, Community EMS (Log #871)
Earl Kossuth, TransCare Corp. (Log #764)
Philip Koster, Community Ambulance Service (Log #993)
Joe Kovacs, Medstar Ambulance (Log #683)
Steve Long, Pleasant Hill Fire Protection District (Log #137)
Brian Lovellette, Michigan Association of Ambulance Services (Log #1721)
Mark Mallory, Titus Regional Medical Center EMS (Log #258)
Michael J. Markilinski, Guardian Angel Ambulance Services, Inc. (Log #113)
William McCarthy, Coastal Health Systems of Brevard (Log #902)
James P. McPartlon, III, Mohawk Ambulance Service (Log #255)

Mark D. Meijer, Life EMS Ambulance (Log #851)
Randy Meininger, Regional West Medical Center (Log #1154)
Michael Mellon, Emergency Medical Foundation, Inc. (Log #916)
Lyle L. Meyers, Trinity Ambulance Service (Log #988)
Jim Miara, Kings Daughters Medical Transport (Log #959)
Kolby Miller, Medstar Ambulance (Log #698)
Eric Mills, University Hospital Ambulance Service (Log #1726)
Terry Nichols, DMCare Express (Log #814)
Jay O'Keefe, PRN Medical Transport (Log #1441)
Joseph C. Olla, Meda-Care Ambulance Corp. (Log #1324)
Bonnie Page, Western Berks Ambulance Assoc. (Log #115)
Michael Paradis, Newport Ambulance Service, Inc. (Log #1802)
Paul R. Patrick, State of Utah, Bureau of EMS and Preparedness (Log #632)
Mark Pedgwaite, Lyndon Rescue, Inc. (Log #154)
Josef H. Penner, Mecklenburg EMS Agency (Log #321)
William H. Pennington, Cameron County Ambulance Service, Inc. (Log #172)
Anne Red, Sinor Emergency Medical Service, Inc. (Log #592)
Johnny L. Red, Sinor Emergency Medical Service (Log #602)
Gregory A. Reid, React EMS (Log #1358)
Aaron Reinert, Lakes Region EMS (Log #789)
Jennifer Revels, Pafford Medial Service (Log #836)
Dennis Reynolds, VBEMS, Inc. (Log #1329)
S. Scott Rhoat, Bellefonte Emergency Medical Services, Inc. (Log #1462)
Eugene Richardson, Sullivan County Ambulance District (Log #1793)
Damian Rickard, American Ambulance Services, Inc. (Log #912)
Michael Ross, Freeman Ambulance Service (Log #132)
Todd Runge, Swea City Ambulance (Log #963)
John J. Russell, Cape County Private Ambulance Service, Inc. (Log #824)
Tom Schmiedeknecht, Professional Med Team, Inc. (Log #794)
Eddie Sims, NRHS-EMSSat EMS (Log #856)
Ron Slagell, LifeCare Ambulance Service (Log #622)
Brent Smith, Hopkins County EMS (Log #220)
Julie Smith, Rural Nebraska Regional Ambulance Network (RNRAN) (Log #1144)
Debra Sokota, New Paltz Rescue Squad (Log #277)
Christopher H. Stawasz, Rockingham Regional Ambulance, Inc. (Log #1339)
Terry Stecker, Siouxland Paramedics Inc. (Log #841)
Anthony Stevens, Professional Sales & Service (Log #886)
Ronald W. Thackery, American Medical Response, Inc. (Log #576)
Ronald W. Thackery, American Medical Response, Inc. (Log #607)
Tom Tornstrom, Tri-State Ambulance (Log #156)
Patrick Trinko, Shawano Ambulance Service (Log #246)
Scott Tucker, Canyon County Paramedics (Log #637)
Randy VanderHeiden, Bellingham Fire Dept. (Log #617)
Gabe VanVactor, ITS Emergency Medical Services (Log #612)
Michael Vatch, SeniorCare EMS (Log #1334)
Marianne Venditti, Medstar Ambulance (Log #688)
Charles Wadsworth, Pafford Medical Service (Log #1164)
Jo Walter, Waverly Health Center (Log #1475)
Faril A. Ward, Trans-Care, Inc. (Log #1349)
Jau Washburn, Metro Paramedic Services, Inc. (Log #1798)
Scott Welker, Uwchlan Ambulance Corps. (Log #119)
Jerry Whetstone, Altoona Fire Department (Log #846)
Kelly Whitehead, North Flight EMS (Log #968)
Gary Wingrove, Gold Cross/Mayo Clinic Medical Transport (Log #1756)
Diane Witkowski, HealthLink Medical Transportation (Log #983)
Michael Woronka, Action Ambulance Service, Inc. (Log #263)
Richard Young, Washington County Ambulance (Log #670)
Jerry Zapolnik, Monroe Community Ambulance (Log #218)
Jerry Zapolnik, Huron Valley Ambulance (Log #1764)
Jerry Zapolnik, Jackson Community Ambulance (Log #1769)

Recommendation: Delete the following text:

~~Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.~~

Substantiation: The proposed standard is not cost effective. Monitoring system can fail and reading are unreliable. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
PRENTISS, S.: If tire pressure is critical to safe operation of a vehicle, then a standard device, like the one in the car that I drive everyday, should be included, not an option. There are times when options are appropriate, this is a simple fix that should not be one.

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-381 Log #91 **Final Action: Reject**
(5.9.6)

Submitter: Patrick Ryan, Madison, WI

Recommendation: Delete the following text:

Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.

Substantiation: The proposed standard is not cost effective. Monitoring system can fail and reading are unreliable. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-382 Log #97 **Final Action: Reject**
(5.9.6)

Submitter: Ryan Hellebusch, Warren County Ambulance District

Recommendation: Delete the following text:

Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.

Substantiation: The proposed standard is not cost effective. Monitoring system can fail and reading are unreliable. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-383 Log #102 **Final Action: Reject**
(5.9.6)

Submitter: Al Maletto, Johnsonburg Fire Dept. Ambulance

Recommendation: Delete the following text:

Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.

Substantiation: The proposed standard is not cost effective. Monitoring system can fail and reading are unreliable. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-384 Log #107 **Final Action: Reject**
(5.9.6)

Submitter: Timothy Hoffman, Good Samaritan Hospital

Recommendation: Delete the following text:

Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.

Substantiation: The proposed standard is not cost effective. Monitoring system can fail and reading are unreliable. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-385 Log #181 **Final Action: Reject**
(5.9.6)

Submitter: Andrew Moffitt, Gold Cross Ambulance

Recommendation: Delete text as follows:

Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.

Substantiation: The proposed standard is not cost effective. Monitoring system can fail and readings are unreliable. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-386 Log #188 **Final Action: Reject**
(5.9.6)

Submitter: James Finger, Regional Ambulance Service, Inc.

Recommendation: Delete text as follows:

Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.

Substantiation: The proposed standard is not cost effective. Monitoring system can fail and readings are unreliable. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-387 Log #193 **Final Action: Reject**
(5.9.6)

Submitter: Stephen Williamson, EMSA

Recommendation: Delete text as follows:

~~Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.~~

Substantiation: The proposed standard is not cost effective. Monitoring system can fail and readings are unreliable. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-388 Log #196 **Final Action: Reject**
(5.9.6)

Submitter: Leonard Marquez, SeniorCare EMS

Recommendation: Delete text as follows:

~~Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.~~

Substantiation: The proposed standard is not cost effective. Monitoring system can fail and readings are unreliable. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-389 Log #353 **Final Action: Reject**
(5.9.6)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.~~

Substantiation: The proposed standard is not cost effective. Monitoring system can fail and readings are unreliable.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-390 Log #703 **Final Action: Reject**
(5.9.6)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Adds additional expense.

Substantiation: Adds expense to small ambulance services with very low call volume.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-391 Log #954 **Final Action: Reject**
(5.9.6)

Submitter: Kevin Sullivan, Town of Enfield - EMS Division

Recommendation: Reconsider tire pressure monitor. Consider changing the standard to require that the tire pressure be measured prior to the start of each shift or daily on each unit.

Substantiation: I've never seen a tire that can visually indicate the pressure on a tire. If such a thing exists, I am concerned that this would be a point of failure. It seems fairly easy and manageable to measure tire pressure with a gauge on a daily basis.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-392 Log #1028 **Final Action: Reject**
(5.9.6)

Submitter: Guy Balok, Plymouth, MI

Recommendation: Revise text to read as follows:

Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.

Substantiation: Past studies on tire pressure monitoring have revealed that about 28 percent of light vehicles on our Nation's roadways run with at least one underinflated tire. Only a few psi difference from vehicle manufacturer's recommended tire inflation pressure can affect a vehicle's handling and stopping distance. Poor tire maintenance can increase incidents of blowouts and tread separations. Similarly, underinflation negatively affects fuel economy.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-393 Log #1482 **Final Action: Reject**
(5.9.6)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Delete text to read as follows:

~~5.9.6 Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.~~

Substantiation: The addition of a visual indicator or monitoring system for the tire inflation pressure is cost prohibitive when compared against a requirement that the driver check the pressure manually for each shift.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-394 Log #15 **Final Action: Reject**
(5.9.6 and 5.10.2)

Submitter: Rick Benson, Council Bluffs Fire

Recommendation: Revise text to read as follows:

5.9.6 - Requirement of individual tire pressure monitoring system does not tolerate cold temperatures at all and would not function.

5.10.2 - Requirement of 60mph governor will cause major confusion on interstate where the posted speed is 70-75. Cars are confused when an emergency vehicle travels at speed well below the posted speed with their lights on. I think 72mph would be much safer.

In general it looks like this document if followed could add significant costs to an already expensive ambulance.

Substantiation: 5.9.6 - Requirement of individual tire pressure monitoring system does not tolerate cold temperatures at all and would not function.

5.10.2 - Requirement of 60mph governor will cause major confusion on interstate where the posted speed is 70-75. Cars are confused when an emergency vehicle travels at speed well below the posted speed with their lights on. I think 72mph would be much safer.

Committee Meeting Action: Reject

Committee Statement: Visual indicators that screw onto the valve stem will meet this standard and can be purchased for \$5 each. Committee feels that proper tire pressure is critical to safe operation and such a device will help to reduce low tire pressure incidents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

PRENTISS, S.: See my Explanation of Negative on Proposal 1917-380 (Log #87).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-395 Log #354 **Final Action: Accept in Principle**
(5.10)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Vehicle Stability:~~

Substantiation: Stability control shall be achieved through chassis and ambulance manufacturer's engineering recommendations. To our knowledge, the technology doesn't exist in most of the chassis available. This is added cost without demonstrating benefit. Regarding 5.10.2, the proposed standard is not necessary. Inconsistent with standard 4.13.3. Lacks data to support the proposed standard. The proposed standardized feature only currently available on international chassis

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-396 Log #575 **Final Action: Accept in Principle**
(5.10)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: The ambulance shall meet the requirements of 5.10.1 or 5.10.2 This section should be deleted in its entirety.

Substantiation: The technology to govern speed or for Stability Control should be provided by the OEM. There are various attributes of any available

Stability Control systems based upon the vehicle manufacturer. The NFPA should provide scientific justification that either of these proposals provides improved safety or operational efficiency.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-397 Log #1222 **Final Action: Accept in Principle**
(5.10)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Delete text as follows:

~~5.10* Vehicle Stability:~~

~~The ambulance shall meet the requirements of either 5.10.1 or 5.10.2~~

~~5.10.1 The ambulance shall be equipped with a stability control system, the system shall have, at a minimum, a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls.~~

~~5.10.2 The ambulance engine shall be governed to limit the top speed to 60-mph (97 km/hr).~~

Substantiation: This section should be deleted entirely. As stated previously, this type of system can only be installed and integrated by the OEM, and therefore doesn't belong here. As to governing the vehicle to 60 MPH if it lacks a stability control system, the appendix section A.5.10 clearly states. The most important aspect of crash prevention is the skill and experience of the operator. The operator's attitude, training, experience, qualifications, and the application of those qualities are the most important elements in crash prevention. The operator must ensure that the physical limits of the vehicle are not exceeded. Driver skill is developed only through training and practice.

This section also violates the 10th Amendment. Since speed control and operation of vehicles is the domain of the state.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-398 Log #1519 **Final Action: Accept in Principle**
(5.10)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

~~5.10* Vehicle Stability.~~

~~The ambulance shall meet the requirements of either 5.10.1 or 5.10.2~~

~~5.10.1 The ambulance shall may be equipped with a stability control system, the system shall have, at a minimum, a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls.~~

~~5.10.2 The ambulance engine shall be governed to limit the top speed to 60-mph (97 km/hr).~~

Substantiation: This section should be made an option in the annex. Vehicles up to 10,000 lbs. GVWR are already required to have ESC, so it is unnecessary to specify it for the Type II's or light modular unite. But it will not be available as a feature on the vast majority of the class 3- 5 chassis cabs and cutaways that make up this market. Ford, GM and Dodge have each stated that they have no plans to incorporate this feature on their dual rear wheel chassis', beyond the 2013 MY where this Standard would become effective. This represents over 90% of all Type 1 and 3 units produced. Further, this is NOT a feature that can be added on in the aftermarket by any feasible method that would function like an OE system, nor should this be encouraged. Even as an option, the speed limit does nothing to substitute for ESC. Vehicles can roll at much lower speeds than 60 mph, and where rollover often takes place after getting a tire off of the pavement, tripping over curb or the vehicle being struck, ESC will not prevent these events.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-399 Log #CP8 **Final Action: Accept (5.10)**

Submitter: Technical Committee on Ambulances,
Recommendation: Revise text to read as follows:

5.10* Vehicle Stability.

The ambulance shall meet the requirements of either 5.10.1 or 5.10.2

~~The If the ambulance is shall be equipped with a stability control system, the system shall have, at a minimum, a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls.~~

~~5.10.2 The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr).~~

~~A.5.10 Electronic Stability Control (ESC) uses a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls in conjunction with the antilock brake system (ABS). The system tracks the direction that the driver intends to steer and uses brake application at individual wheels to help straighten out the vehicle. This system greatly enhances the safety of the vehicle and the purchaser should consider adding ESC to the ambulance if available as an option, or consider purchasing an ambulance configuration that offers ESC.~~

~~While the design and features of the vehicle are important to safe driving, the most important aspect of crash prevention is the skill and experience of the operator. The operator's attitude, training, experience, qualifications, and the application of those qualities are the most important elements in crash prevention. The operator must ensure that the physical limits of the vehicle are not exceeded. Driver skill is developed only through training and practice.~~

~~**Substantiation:** While the committee would like to mandate ESC on all ambulances, it recognizes that on many of the high production ambulance chassis this technology is not offered, nor will it be offered, in the near future. Those ambulances built on chassis less than 10,000 lb GVWR are mandated by FMVSS to include ESC. Most medium duty truck chassis offer ESC as an option. It is the 10,000 to 16,500 lb GVWR chassis that without the offering. By including the recommendation in the annex the committee is attempting to encourage ESC without mandating it in an industry where the technology will not be universally available.~~

~~**Committee Meeting Action: Accept**~~

~~**Number Eligible to Vote: 32**~~

~~**Ballot Results:** Affirmative: 25 Negative: 2~~

~~**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.~~

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

PRENTISS, S.: Stability control and the defined elements are worthy for inclusion, however, at this time draft standard would serve as exclusionary. An "Annex" item is a positive step.

1917-400 Log #24 **Final Action: Accept in Principle (5.10.1)**

Submitter: Gerald Layne, Citizens Emergency Crew

Recommendation: 5.10.1 Vehicle stability control system. As of this time the vast majority of ambulances are on the Ford and GM chassis, and they DO not offer this system at this time. If this rule is added you will add a medium duty truck at \$25,000 to \$35,000 to the price of the total unit just for this. This rule should read, "If the chassis builder offers a stability control system, this will be required." This will then remove 5.10.2 section. Otherwise this rule will force everyone to go to the large type 1 medium duty trucks and remove all GM G4500 and Ford F & E Super duty models. Also the frame height on the Ford & GM trucks still allow for 4X4 trucks to meet a cot loading height standard. The medium duty trucks in current production will have a much higher load height for a cot. (This is the one rule I have the most problem with.)

Substantiation: Allow the use of GM C4500 & Ford F450/E450 trucks until they have the stability control systems on the market with out the 60 mph road speed.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-401 Log #46 **Final Action: Accept in Principle (5.10.1)**

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Delete text to read as follows:

~~5.10.1 The ambulance shall be equipped with a stability control system, the system shall have, at a minimum, a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls.~~

~~**Substantiation:** Unless this is fancy jargon for current commercial anti lock brake technology, then it unnecessarily adds to the cost and complexity of the vehicle.~~

~~**Committee Meeting Action: Accept in Principle**~~

~~**Committee Statement:** See committee action on Proposal 1917-399 (Log #CP8).~~

~~**Number Eligible to Vote: 32**~~

~~**Ballot Results:** Affirmative: 25 Negative: 2~~

~~**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.~~

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-402 Log #705 **Final Action: Accept in Principle (5.10.1)**

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Delete not needed in ambulance market.

Substantiation: Chassis Used in ambulance build is a commercially engineered and built product tested to standards. Not necessary to add these products to these chassis which are already certified.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-403 Log #1058 **Final Action: Accept in Principle (5.10.1)**

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

5.10.1 The ambulance shall be equipped with a stability control system, the system shall have, at a minimum, a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls. IF AVAILABLE FROM THE OEM CHASSIS MANUFACTURER.

Substantiation: Not all chassis platforms have the systems available.

In the type I or III, only the sprinter and the Navistar chassis has this feature available.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-404 Log #1681 **Final Action: Accept in Principle (5.10.1)**

Submitter: Randy M. Freiburger, Ford Motor Company

Recommendation: Delete Roll Stability Control for ambulances over 10,000 GVW. Vehicles designed to government requirements that does not include roll stability control. Multiple design standards are not containable.

Substantiation: Engineering, technology, and resource plans developed during this time period were based on government requirements. Addition of incremental standards and the technology/resources required are not identified and not contained.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-405 Log #1694 **Final Action: Accept in Principle**
(5.10.1)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Problem: Does any manufacturer of medium duty chassis offer stability control as a feature? It's a great idea, but it does not currently exist as an option.

Substantiation: None given.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-406 Log #1182 **Final Action: Accept in Principle**
(5.10.1 and 5.10.2)

Submitter: Deborah Thomson, PL Custom Emergency Vehicles

Recommendation: None given.

Substantiation: Vehicle Stability - must comply with either 5.10.1 or 5.10.2 - both have problems

5.10.1 Vehicle Stability Control - unless provided by the OEM chassis manufacturer this will be very expensive - thousands per vehicle.

5.10.2 If cannot comply with 5.10.1 then vehicle shall be governed to not be able to exceed 60 mph. This directly contradicts with 4.13.4 which requires vehicle to be able to sustain 65 mph and be able to achieve 70 mph for passing.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-407 Log #306 **Final Action: Accept in Principle**
(5.10.1.1)

Submitter: Charles D. Drake, SJC Industries Corporation

Recommendation: Revise text to read as follows:

5.10.1 The ambulance ~~shall~~ may be equipped with a stability control system, if so equipped the system shall have, at a minimum, a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls.

Substantiation: Chassis manufacturers do not currently offer a stability control system on the most popular chassis currently converted into an ambulance. The NFPA specification should not eliminate any chassis choice, additionally it should not require a system not currently available.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-408 Log #16 **Final Action: Reject**
(5.10.2)

Submitter: J. David Connor, Stability Dynamics

Recommendation: Add text to read as follows:

60 mph (97 km), and, a lateral acceleration indicator that is adjustable for sensitivity and that provides both visual and audio signals and warnings shall be provided.

Substantiation: Governing top speed at 60 mph does not address the potential for lower speed steering input induced rollovers. Many rollovers occur at speeds below 60 mph.

Committee Meeting Action: Reject

Committee Statement: This device only warns of a rollover and may be useful as a training tool. The committee does not believe it adds enough to safety to justify the cost. Not required as a minimum standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-409 Log #22 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Brittani Massey, Lakeside Rescue Squad

Recommendation: Revise text to read as follows:

5.10.2 New requirement for engine speed governor for 60 mph.
or

5.10.2 New requirement for engine speed governor for 60 70 mph.

Substantiation: In reference to the provision that would add a 60 mph governor to ambulances (5.10.2), it is important to consider the consequences of this proposed provision. The speed limit on many Virginia interstate highways is 70 mph. Why would ambulances be required to go 10 mph below the speed limit on the interstate? This would hinder patient care and delay access to advanced care for critical patients. Furthermore, limiting ambulances to 60 mph, especially coming from outlying areas via interstate with trauma patients, may create a greater need for helicopters to be used which increases costs and dangers and decreases your chances of survival when you are in a car accident. The difference between 60 mph and 70 mph on a 30 mile transport is about 5 minutes. That's five minutes you are still in the back of a moving vehicle instead of being seen by doctors in the trauma room of the ED. That's 5 minutes the EMT on a BLS ambulance is pounding on your chest while you're in cardiac arrest instead of getting you access to drugs that could save your life. For these reasons it seems clear this provision will cost lives and resources. I recommend this provision be deleted or amended to include a 70 mph governor.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-410 Log #66 **Final Action: Accept in Principle**
(5.10.2)

Submitter: William von Zehle, Jr., Wilton Emergency Medical Services

Recommendation: Delete the following text:

The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr): (Delete entire paragraph.)

Substantiation: Paragraph 5.10.2 mandates a 60 mph (97 km/h) top speed but paragraph 4.13.3 mandates 72 mph (116 km/h).

(Also, see proposed change to 4.13.3.)

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-411 Log #77 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Christopher S. Schultz, Mountain Ambulance Service

Recommendation: Revise text to read as follows:

5.10.2 The ambulance engine shall be governed to limit the top speed to 84 60 mph (135 97 km/hr).

Substantiation: Ford E series vehicles speed is governed at 84 mph. The standard tires that Ford E Series vehicles have supplies are rated at speed rating "R" or 106 mph. It should not be the responsibility of ambulance modular box manufacturer to change OEM speed settings. Throughout much of the United States the speed for normal driving is set at 70 mph. It would not be prudent to restrict emergency vehicles speed lower than that of the everyday driver on the road. This causes a safety hazard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-412 Log #210 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Matthew Zavadsky, MedStar EMS

Recommendation: Delete entire section - inconsistent with Section 4.13.3.

Substantiation: None given.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-413 Log #307 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Charles D. Drake, SJC Industries Corporation

Recommendation: Revise text to read as follows:

5.10.2 The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr).

Substantiation: This requirement should be stricken from the standard because not all chassis manufacturers offer the capability to govern the engine speed.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-414 Log #583 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Brad Smith, Children's Transport/Children's Healthcare of Atlanta

Recommendation: Revise text to read as follows:

5.10.2 The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr). Vehicles built specifically for and designated as Critical Care Transport vehicles whose use is other than Emergency Medical Transport, in a 911 service shall be governed at 75 mph (121 km/hr).

Substantiation: Vehicles utilized in Critical Care Transport and built specifically for that purpose serve a role from Ambulances in the Pre-hospital arena. Our service area covers up to 125 miles from Atlanta Georgia. This is typical of many Neonatal, Pediatric, and Adult services across the county whose territory routinely involves traveling distances greater than 75 miles. Interstate and limited access highway speed limits are posted at 65 to 70 mph outside metropolitan areas. Many four lane highways without limited access have posted speed limits of 65 mph.

A vehicle governed to 60 mph and used on roadways with posted limits of 65 to 70 mph and having actual speeds of 80 + mph is at risk of collision.

Additionally, a vehicle traveling 125 miles at 60 mph will take 14 minutes longer than a vehicle traveling at 70 mph (the posted speed limit) for a total additional time of 28 minutes round trip. This is valuable time for a critically ill patient especially a critically ill pediatric patient. The need for limiting vehicle speed is understood and acknowledged. Medium Duty tires are generally rated at a max speed of 75 mph for regional and over the road trucks. We respectfully request governed speeds be established at 75 mph.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-415 Log #654 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Delete the following text:

~~5.10.2 The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr).~~

Substantiation: Currently over 92% of vehicles being built this year will not have the capability to be reprogrammed to a limited speed of 60 mph (97 km/hr). According to the way NFPA specs are written over 92% of today's vehicles can not be in service. Reference NTEA 2010 ambulance chassis survey.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-416 Log #701 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Delete 60 mph.

Substantiation: Many interstate systems are federally controlled at much higher speeds. Sixty MPH creates a traffic hazard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-417 Log #742 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Christopher Bitner, North Area Volunteer Ambulance Corps

Recommendation: Revise text to read as follows:

5.10.2 The ambulance engine shall be governed to limit the top speed to 60 70 mph (97 113 km/hr).

Substantiation: Highway speed limits in some states are 75 mph. Ambulances must be able to travel at a speed comparable to surrounding traffic in order to not create a hazard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-418 Log #1017 **Final Action: Accept in Principle**
(5.10.2)

Submitter: David Schimmel, Wayne Memorial First Aid Squad

Recommendation: Revise text to read as follows:

5.10.2 The ambulance engine shall be governed to limit the top speed to ~~60 mph (97 km/hr)~~ 75 mph (120 km/hr).

Substantiation: This is a ridiculous number there are many highways that have a posted speed that is higher than this amount and many agencies have long distances to travel to bring a patient to the hospital. This also conflicts with 4.13.3

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-419 Log #1059 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text to read as follows:

5.10.2 ~~The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr).~~

Substantiation: 5.10.2

A. Establishing a speed penalty for all ambulances that are not equipped by the chassis manufacturer with a stability control system creates a huge operating inequity for the majority of ambulances, we see a substantial legal liability for claims made that patients suffered or died while being transported in vehicles that were possible governed to a speed that could be as much as 15 MPH lower than the maximum speed limit in some states.

B. The operating speed of ambulances is regulated by state statutes and by the operational protocol of the service provider, regulating the top speed of a vehicle to an arbitrary rate that is even slower than the maximum speed limit in some states is inappropriate.

C. Most chassis' used for ambulances do not have provisions for governing top speed. It would be unsafe and inappropriate to require an ambulance manufacture to devise an aftermarket device for regulating speed of vehicles.

D. It is highly likely that vehicle owners would make every effort to disable such devices if added.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-420 Log #1201 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

~~The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr).~~

Substantiation: The proposed standard is not necessary. Inconsistent with standard 4.13.3. Lacks data to support the proposed standard. The proposed standardized feature only currently available on international chassis

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-421 Log #1253 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: Revise text to read as follows:

...to limit the top speed to 60 mph (97 km/hr.)

Substantiation: These numbers do not coincide with those in Section 4.13.3.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-422 Log #1277 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

5.10.2 The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr) ~~70 mph (113 km/hr).~~

Substantiation: A governed speed of 60 mph will create a traffic hazard where the posted speed limit is above 60 mph.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-423 Log #1425 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Michael S. Wolfe, Plainfield Fire Territory

Recommendation: None given.

Substantiation: Confusion/contradiction between this section/paragraph and Section 4.13.3. Section 4.13.3 allows for 70 mph, Section 5.10.2 allows for 60 mph governed.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-424 Log #1428 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Chad Dotzler, Hennepin EMS

Recommendation: Delete text to read as follows:

The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr.)

Substantiation: The proposal of regulating speed to 60 contradicts what was stated previously in Section 4.13.3. This limit further restricts driver's ability to maintain speeds with traffic on the freeways and in most instances, does not allow the vehicle to even reach the posted speed limit. This limits the driver's ability to merge, pass, or could even potentially hinder a driver's ability to avoid a collision and pose a traffic hazard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-425 Log #1480 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Delete text to read as follows:

5.10.2 The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr).

Substantiation: This conflicts directly with 4.13.3 of the document.

Additionally, limiting the vehicle to 60 MPH will cause a safety issue for ambulances having to drive on interstate highways with speed limits of 65 or more MPH.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-426 Log #1596 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 5.10.2 and require a stability control system on all ambulances.

Substantiation: The ambulance should be equipped with a stability control system regardless of its governed speed. An ambulance traveling at 60 MPH that has to suddenly swerve will lose control just as fast as one traveling at 65 MPH. Also, governing the speed to 60 mph is in conflict with 4.13.3, and 4.13.4.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-427 Log #1695 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Revise text to read as follows:

The ambulance engine shall be governed to limit the top speed to 60 **(80)** mph.

Substantiation: Problem: This document inconsistently calls for governed speeds of 60 and 72 mph. If governed, it should be user or purchaser defined.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-428 Log #1743 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Christopher Anderson, Bell Ambulance, Inc.

Recommendation: Delete text to read as follows:

5.10.2 The ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr).

Substantiation: Full time, professional EMTs and paramedics are not prone to using imprudent speed, even though permitted to exceed posted speed limit by State law.

This is not practical for ambulances used in urban and rural settings, where freeway and highway speed limits are higher than the arbitrarily proposed limit. It can be dangerous to drive slower than the posted speed limit.

Such chassis features are not offered by the major ambulance conversion chassis manufacturers.

Such a limitation could prove dangerous in attempting to accelerate to avoid a collision.

Present dual-rear-wheel ambulance chassis are extremely stable and not prone to tipping.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-429 Log #1773 **Final Action: Accept in Principle**
(5.10.2)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Revise text to read as follows:

5.10.2 If the ambulance is not equipped with a stability control system, the ambulance engine shall be governed to limit the top speed to 60 mph (97 km/hr).

Substantiation: The current verbiage in Section 5.10.2 creates a conflict with Section 4.13.3 where the vehicle top speed is limited to 72 mph (116 km/hr) or the tire speed rating, whichever is lower. In Section 5.10.2, the top speed was intended to be restricted when there was no stability control system. By adding the proposed verbiage, the intent of the statement is clarified.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-430 Log #279 **Final Action: Reject**
(5.10.3)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Add new text to read as follows:

5.10.3 If the ambulance model is not equipped with a stability control system it shall be tilt table tested per SAE J2180, NFPA 1901, section 4.13.1.1 to a minimum 35 degrees on driver and passenger side.

Substantiation: This test is in NFPA 1901 and helps validate tip over angles on ambulance upfitted units that are not equipped with a stability control system.

Committee Meeting Action: Reject

Committee Statement: Need more substantiation for the 35° recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-431 Log #1610 **Final Action: Accept in Principle**
(5.11 and 6.11)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Combine the requirements for steps into a single section.

Substantiation: Both 5.11 and 6.11 have requirements for steps. 5.11 is titled bumpers. All requirements for steps should together and 6.11 is probably not the appropriate place as chapter 6 is patient compartment and steps are also part of the cab.

Committee Meeting Action: Accept in Principle

Revise text as follows:

~~5.11.2.9 5.11.2.8.3~~ The height of the bottom step distance from the road surface to the top surface of the first step shall not exceed 22 in. (559 mm) with the vehicle loaded to its GVWR and/or the suspension in the kneeling condition

~~6.11 Steps:~~

~~6.11.1 5.11.2.8.4~~ Steps shall be provided in the door openings.

~~6.11.2~~ Height of the bottom step shall not exceed 22 in. (559 mm):

~~6.11.3 5.11.2.8.5~~ Step wells shall be illuminated.

~~6.11.4 5.11.2.8.6~~ Step surfaces shall be constructed with anti-slip material.

~~6.11.5*~~ 5.11.2.8.7 All steps shall have a minimum area of 35 in.2 (22,580 mm2), shall be of such a shape that a 5 in. (125 mm) diameter disk does not overlap any side when placed on the step, and shall be arranged to provide at least 8 in. (200 mm) of clearance between the leading edge of the step and any obstruction.

Committee Statement: The committee accepted combining section 6.11 with 5.11 and deleted any duplicate text.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-432 Log #355 **Final Action: Reject**
(5.11.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

OEM's standard front bumper shall be furnished in the front of the chassis.

Substantiation: Standard design for fire truck; not applicable for an automotive ambulance.

Committee Meeting Action: Reject

Committee Statement: Submitter appears to be confused. Every vehicle has a front bumper and this is what the standard is specifying.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-433 Log #1060 **Final Action: Accept in Principle**
(5.11.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: New text to read as follows:

5.11.1* OEM's standard CHROME FINISHED front bumper shall be furnished in the front of the chassis.

Substantiation: Current KKK-A-1822 Revision "F" requires chrome finish on OEM bumpers for rust protection.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-436 (Log #1597).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-434 Log #1278 **Final Action: Accept in Principle**
(5.11.1)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

5.11.1 OEM's standard front bumper or customer-specified after-market bumper shall be furnished in the front of the chassis.

Substantiation: This specification should not prevent the customer from electing to install a more robust bumper. (Customers in rural areas often find it necessary to upgrade the front bumper to provide better protection against animal impact.)

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-436 (Log #1597).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-435 Log #1520 **Final Action: Accept in Principle**
(5.11.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

5.11.1* OEM's standard CHROME FINISHED front bumper shall be furnished in the front of the chassis.

Substantiation: Chrome should be minimum requirement for the Standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-436 (Log #1597).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-436 Log #1597 **Final Action:** Accept
(5.11.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 5.11.1 to read:

5.11.1* OEM's standard A front bumper shall be furnished in the front of the chassis which is at least the equivalent of the chassis manufacturer's EOM bumper.

Substantiation: As written, the requirement prevents the manufacturer from providing a heavier bumper.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-437 Log #1279 **Final Action:** Accept
(5.11.2)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

5.11.2 The rear of the ambulance shall be furnished with a full-width bumper that extends to within 6" of each side of the ambulance.

Substantiation: Holding the rear bumper inboard of the sides of the module reduces the potential for snagging posts, branches, trees, etc. This, along with angling the aft outboard edges of the bumper, improves departure angle clearance when the ambulance is driven through depressions (such as freeway medians) with an angled approach.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-438 Log #1061 **Final Action:** Accept in Principle
(5.11.2.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: New text to read as follows:

5.11.2.2 Each TYPE I AND III VEHICLE rear bumper shall be provided with an integrated step.

Substantiation: Type II ambulances require an additional rear step bumper added below the OEM rear bumper. Integrated steps are not available on all OEM chassis. If a final stage manufacturer removes the OEM bumper and replaces it then the OEM FMVSS testing for several items no longer applies, and the FMVSS pass through certification is voided.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-439 (Log #1521).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-439 Log #1521 **Final Action:** Accept
(5.11.2.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

5.11.2.2 Each TYPE I AND III VEHICLES rear bumper shall be provided with an integrated step.

Substantiation: This needs to be limited to the modular ambulances. The OEM bumper on the Type II's don't have this feature, and mfrs. can't replace it without severe compliance implications. The ambulance manufacturer would need to run a rear barrier test for fuel system integrity compliance under FMVSS 301 as the OEMs specifically preclude bumper modifications from their pass through compliance.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-440 Log #1280 **Final Action:** Accept
(5.11.2.3)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

5.11.2.3 The step shall be designed to prevent the accumulation of mud, ice, or snow and shall be made of anti-skid open grating material.

Substantiation: Language clarification.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-441 Log #67 **Final Action:** Reject
(5.11.2.6)

Submitter: William von Zehle, Jr., Wilton Emergency Medical Services

Recommendation: Revise text to read as follows:

The stepping surface shall have a minimum depth of 5 in. (127 mm) ~~and a maximum depth of 10 in. (254 mm).~~

Substantiation: As long as the vehicle's minimum departure angle is maintained, there is no reason to limit the maximum step depth.

Committee Meeting Action: Reject

Committee Statement: The step should be limited in depth to avoid interference with the cot during loading.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-442 Log #584 **Final Action:** Reject
(5.11.2.7)

Submitter: Brad Smith, Children's Transport/Children's Healthcare of Atlanta

Recommendation: Revise text to read as follows:

5.11.2.7 If the step protrudes more than 7 in. (178 mm) from the rear of the vehicle a fold up step shall be furnished. Vehicles equipped with an electrical or hydraulic lift for the purpose of loading and unloading patients in an isolette (incubator) or on a bariatric stretcher shall not protrude more than 10 in. from the rear of the vehicle.

Substantiation: Many Neonatal and Pediatric Transport services employ the use an Isolette for the purpose of transporting neonatal and pediatric patients under 11 lbs (5 kg). The lift is the safest and easiest means by which to load the Isolette. When using a lift there is not lifting an attendant and the Isolette can be loaded by two (2) people. It eliminates the need to lift because ramps are eliminated the need to push or pull up or down an incline are also no longer necessary. Patient safety is enhanced because the likelihood of an Isolette falling or being dropped is also reduced significantly.

Committee Meeting Action: Reject

Committee Statement: This standard is a minimum standard. The purchaser may specify further requirements in addition to this standard.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-443 Log #1281 Final Action: Reject (5.11.2.7)

Submitter: Jerry Allen, Braun Northwest, Inc.**Recommendation:** Revise text to read as follows:

5.11.2.7 If the step protrudes more than ~~7 in. (178 mm)~~ 8-1/2 in. (216 mm) from the rear of the vehicle, a fold-up step shall be furnished.

Substantiation: The bumper depth at which a fold-up step becomes necessary should be driven by actual cot performance. Recent experience indicates that currently available cots can get front wheels and safety hook fully engaged across an 8-1/2 in. bumper. Our safety interest should be to allow the widest step surface possible before triggering the fold-up step requirement. The fold-up step creates its own set of safety concerns; we should take steps to minimize the situations in which its use is required.

Committee Meeting Action: Reject**Committee Statement:** No data to substantiate the recommendation.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-444 Log #1481 Final Action: Reject (5.11.2.8.1)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.**Recommendation:** Revise text to read as follows:

5.11.2.8.1 The rear stepping surface shall withstand a load of 500 lb (227 kg) with no more than 0.25 ±0 in. (25.4 mm) of Deflection and no more than 0.25 in. (6.4 mm) of permanent deformation. In addition, the rear step will not permanently deform with a horizontal impact up to 15 degrees from a right angle to the rear of the step with an impact up to 5 miles per hour.

Substantiation: Allowing for the permanent deformation of a bumper by stepping on it is unacceptable. This is a key component in decreasing impact to occupants of the vehicle. The bumper should be designed to withstand both stepping on, as well as a 5 mile per hour collision removing the force of impact from the remainder of the vehicle.

Committee Meeting Action: Reject**Committee Statement:** The committee is not establishing bumper crash standards. The criteria is to ensure the step will support the weight of people.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-445 Log #1062 Final Action: Accept in Principle (5.11.2.9)

Submitter: Randy A. Hanson, American Emergency Vehicles**Recommendation:** Revise text to read as follows:

5.11.2.9 The height of the rear step shall not exceed 22 in. (559 mm) with the vehicle loaded to its ACTUAL CURBWEIGHT PLUS ALLOWANCES FOR EQUIPMENT AND OCCUPANTS estimated in-service weight and/or the suspension in the kneeling condition.

Substantiation: Estimated in service weight should be replaced with actual curbweight plus allowance. This will be far more accurate than any estimate.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-81 (Log #CP7).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-446 Log #1522 Final Action: Accept in Principle (5.11.2.9)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association**Recommendation:** Revise text to read as follows:

5.11.2.9 The height of the rear step shall not exceed 22 in. (559 mm) with the vehicle loaded to its ACTUAL CURBWEIGHT PLUS ALLOWANCES FOR EQUIPMENT AND OCCUPANTS estimated in-service weight and/or the suspension in the kneeling condition.

Substantiation: This should apply to each unique vehicle.**Committee Meeting Action: Accept in Principle****Committee Statement:** See committee action on Proposal 1917-81 (Log #CP7).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-447 Log #457 Final Action: Reject (5.12)

Submitter: Andrew J. Alger, Progressive Engineering Inc.**Recommendation:** Add text to read as follows:**5.12 Cab Seal.**

5.12.1 If the cab and patient compartment are separate enclosures, the cab shall be provided with a sealing device.

5.12.2 The seal shall be fabricated from a material resistant to ozone, sunlight, oil, and fungus.

5.12.3 The seal shall remain flexible in temperatures between -20°F (-29°C) and 110°F (43°C).

5.12.4 The seal shall be designed for proper fit and finish and be able to absorb lateral, vertical, and torsional displacement due to body/cab movement.

5.12.5 Verification of section 5.12.2 and 5.12.3 shall be tested by the seal manufacturer and documented in the certification manual.

Substantiation: If there is a requirement there needs to be documentation backing up the product.

Committee Meeting Action: Reject**Committee Statement:** Not everything in a specification requires a physical test or documented proof. Committee has required testing for those critical items that they feel are safety related. This is not one of them.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-448 Log #737 Final Action: Reject (5.12)

Submitter: Aaron Reinert, Lakes Region EMS**Recommendation:** Delete text as follows:**5.12 Cab Seal:**

~~**5.12.1** If the cab and patient compartment are separate enclosures, the cab shall be provided with a sealing device.~~

~~**5.12.2** The seal shall be fabricated from a material resistant to ozone, sunlight, oil, and fungus.~~

~~**5.12.3** The seal shall remain flexible in temperatures between -20°F (-29°C) and 110°F (43°C).~~

~~**5.12.4** The seal shall be designed for proper fit and finish and be able to absorb lateral, vertical, and torsional displacement due to body/cab movement.~~

Substantiation: This section needs to be modified to account for van and Sprinter style ambulances. Van and Sprinter style ambulances do not have a cab seal. Complying with this section would eliminate the ability to use van and sprinter style ambulances

Committee Meeting Action: Reject**Committee Statement:** As written this section only applies if the cab and module are separate enclosures. Sprinter and van ambulances are not separate, so the section does not apply to them.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-449 Log #356 **Final Action: Reject**
(5.13.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Revise text to read as follows:

Driver and front passenger seating shall consist of OEM seating two individual bucket-type seats.

Substantiation: Automotive ambulance can carry family members and patients in passenger seat.

Committee Meeting Action: Reject

Committee Statement: Substantiation has no relevance to the recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-450 Log #653 **Final Action: Accept in Principle**
(5.13.1)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Revise text to read as follows:

5.13.1 Driver and front passenger seating shall consist of two individual bucket-type seats or bench seat.

Substantiation: We currently get request for bench seat's in the drivers or rear crew cab position by the end user. some of the user's are hospitals and fire departments.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-451 (Log #CP9).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-451 Log #CP9 **Final Action: Accept**
(5.13.1)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

5.13.1 Front cab seating for the driver and at least one passenger shall be provided. Driver and front passenger seating shall consist of two individual bucket-type seats.

Substantiation: Bench seats are acceptable as a minimum standard and the original wording would have precluded this option.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-452 Log #357 **Final Action: Reject**
(5.13.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Revise text to read as follows:

The driver's and passenger's seat shall have the OEM's full, unobstructed seat track travel range of longitudinal adjustment and a minimum of 30 percent of the range of inclination, but not less than the angle furnished on the OEM's standard non-reclining high back seat.

Substantiation: Automotive ambulance can carry family members and patients in passenger seat. The functionality of the driver and passenger seats in the cab are the result of design and testing by the OEM. Purchasers can often select chassis based upon certain features, but to restrict the innovation of chassis manufacturers is untenable.

Committee Meeting Action: Reject

Committee Statement: This standard provides minimum requirements. It does not restrict the purchaser or the manufacturer from providing products or features that exceed the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-453 Log #587 **Final Action: Accept in Principle**
(5.14)

Submitter: Paul Hughes, Velvac Inc.

Recommendation: Revise text to read as follows:

5.14.2 Mirrors should be specified and mounted so that the inside edge of the mirrors extends at least one inch outside of the widest part of the ambulance body. The FOV of the primary mirrors should in no way be obstructed by any part of the ambulance body.
(per NHTSA DOT HS 810 960 July 2008 page 9)

Substantiation: Recommendation would eliminate the blind spots on the sides of the vehicle that currently exists when using standard trailer-tow mirrors, which were designed for 92 inch wide vehicle bodies, and therefore improve vehicle safety for lane change maneuvers. Most ambulances today have 95, 96, or 102 inch wide bodies. As a result, existing trailer tow mirrors must be either 1) adjusted straight back to view along the side of the vehicle body and the adjacent lane, which will fill much of the reflected view with the vehicle's body and therefore the "effective" viewing area is less than required per FMVSS 111, or 2) the trailer-tow mirrors must be angled away from the vehicle body to maximize the effective viewing area of the glass, which creates a blind spot along the side of the vehicle because it does not fully capture the lane adjacent to the vehicle. Ambulances should use mirrors that are designed to clear specific body widths, in the same way that shuttle buses, Class C RVs, rental trucks, etc. already do today. Cars in the adjacent lane can be completely out of sight for drivers in the ambulance attempting to make a lane change. The NHTSA report suggesting this change (mirrors be one inch outside of the body) and the report further explaining these blind spots are included in the paper attached.

Note: Supporting material is available for review at NFPA Headquarters.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-459 (Log #CP10).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-454 Log #1813 **Final Action: Reject**
(5.14)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

5.14* Mirrors.

5.14.1 Dual side-view mirrors having a combination flat and convex mirror system shall be furnished.

5.14.2 The mirrors shall be the largest available from the chassis OEM.

5.14.3 All primary side view mirrors used by the driver shall be adjustable from the driver's position.

1. Hardware and mirror heads shall have a corrosion resistant exterior finish.

2. All primary side view mirrors shall be capable of being heated.

Substantiation: To dissipate condensation if/when it forms on the mirror.

Committee Meeting Action: Reject

Committee Statement: Minimum standard. Not needed in hot and dry climates. Purchaser can specify if desired.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-455 Log #1839 **Final Action: Reject**
(5.14)

Submitter: John Matthes, Kickapoo Valley Rescue Squad
Recommendation: Revise text to read as follows:

- 5.14* Mirrors.
- 5.14.1 Dual side-view mirrors having a combination flat and convex mirror system shall be furnished.
- 5.14.2 The mirrors shall be the largest available from the chassis OEM.
- 5.14.3 All primary side view mirrors used by the driver shall be adjustable from the driver's position.
- 1. Hardware and mirror heads shall have a corrosion resistant exterior finish.
- 2. All primary side view mirrors shall be capable of being heated.

Substantiation: To dissipate condensation if/when it forms on the mirror.

Committee Meeting Action: Reject

Committee Statement: Minimum standard. Not needed in hot and dry climates. Purchaser can specify if desired.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

- MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
- THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-456 Log #1063 **Final Action: Accept in Principle**
(5.14.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: New text to read as follows:

5.14.2 The mirrors shall be THE MIRRORS SHALL BE APPROPRIATELY SIZED FOR THE FINAL DESIGN. The largest available from the chassis-OEM.

Substantiation: Largest available from the OEM excludes the addition of after market mirrors. Is this the intention? Federal rules have already been put into place regarding the field of vision requirements in any mirror.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-459 (Log #CP10).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

- MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
- THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-457 Log #1523 **Final Action: Accept in Principle**
(5.14.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

5.14.2 The mirrors shall be APPROPRIATELY SIZED FOR THE FINAL-CONVERSION DESIGN-completed vehicle, the largest available from the chassis-OEM.

Substantiation: The largest OEM mirrors aren't necessarily the proper ones for the width of the body, nor the best for the customer's particular application. Leave the mirror selection to the ambulance manufacturers as they are responsible for the FMVSS compliance, and they often have to replace the OEM mirrors.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-459 (Log #CP10).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

- MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
- THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-458 Log #1774 **Final Action: Accept in Principle**
(5.14.2)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Revise text to read as follows:

5.14.2 The mirrors shall be the largest available from the chassis-OEM. Mirrors shall meet the requirements of FMVSS 111.

Substantiation: The current, draft verbiage suggests the largest mirrors available shall be supplied. There is no regard to meeting the Federal requirements even though it may be assumed or implied. By modifying to the proposed verbiage, it simply states the mirrors shall meet the requirements of the Federal standard while lending the option to the consumer to procure the various types of mirrors that may be available to him or her.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-459 (Log #CP10).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

- MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
- THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-459 Log #CP10 **Final Action: Accept**
(5.14.2)

Submitter: Technical Committee on Ambulances,

Recommendation: Delete 5.14.2:

5.14.2 The mirrors shall be the largest available from the chassis-OEM.

Substantiation: FMVSS already specifies mirror size.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

- MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
- THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-460 Log #358 **Final Action: Reject**
(5.14.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Revise text to read as follows:

All primary side view mirrors used by the driver shall be adjustable from the driver's position, including power mirrors.

Substantiation: Majority of automotive ambulance's specified design include power mirrors.

Committee Meeting Action: Reject

Committee Statement: Submitters recommendation does nothing to change the meaning of the specification.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

- MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
- THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-461 Log #359 **Final Action: Reject**
(5.15)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Cab Integrity. Cabs on ambulances with a GVWR greater than 26,000 lb (11,800 kg) shall meet the requirements of one of the following sets of standards: (1) SAE J2420, COE Frontal Strength Evaluation — Dynamic Loading Heavy Trucks, and SAE J2422, Cab Roof Strength Evaluation — Quasi-Static Loading Heavy Trucks (2) ECE Regulation number 29, Uniform Provisions Concerning the Approval of Vehicles with Regard to the Protection of the Occupants of the Cab of a Commercial Vehicle

Substantiation: Follow OEM standard.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no meaningful substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

- MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
- THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-462 Log #1696 **Final Action: Reject**
(5.15)

Submitter: Richard L. Dean, Mecklenburg EMS Agency
Recommendation: Problem: Cab integrity. Is there no standard for cab integrity for vehicles under 26,000 GVW? If so, it should be added.
Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-463 Log #1524 **Final Action: Reject**
(5.15.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Add new text to read as follows:

Compliance to 5.15 may consist of actual testing or other representation from the chassis manufacturer.

Substantiation: This requirement needs to be able to be represented by the chassis OE, and a mechanism for pass-thru compliance must be allotted to the ambulance mfr.

Committee Meeting Action: Reject

Committee Statement: Nothing in the wording would restrict a “pass-thru” compliance.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-464 Log #23 **Final Action: Reject**
(5.16)

Submitter: Charles Marshall, West Barnstable Fire Department

Recommendation: Add text as follows:

5.16 Odometer

5.16.1 The ambulance shall be equipped with an odometer that records mileage in tenths of a mile.

Substantiation: Medicare/Medicaid now requires that ambulance services billing for mileage must report their mileage in tenths of a mile. Some odometers do not record tenths, especially after passing 9,999.9 or 99,999.9 miles.

Committee Meeting Action: Reject

Committee Statement: Odometers are high production features on most chassis and will not be influenced by this standard. Purchaser can specify if desired.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-465 Log #31 **Final Action: Reject**
(Chapter 6)

Submitter: Philip Bonaiuto, Mass Dept. of Public Health

Recommendation: Add new text to read as follows:

Workmanship 6.0

1. Vehicles shall be free from defects that may impair their serviceability or detract from appearance.

2. All bodies, systems, equipment, and interfaces with the chassis shall be done in accordance with the OEM Body Builders Book.

3. Defective components shall not be furnished. Parts, equipment, and assemblies that have been repaired or modified to overcome deficiencies shall not be furnished without the approval of the purchaser. Component parts and units shall be manufactured to definite standard dimensions with proper fits, clearances, and uniformity. General appearance of the vehicle shall not show any evidence of poor workmanship.

4. The following shall be reason for rejection:

- a) Rough, sharp, or unfinished edges, burrs, seams, corners, and joins.
- b) Grit, seeds, orange peel, fish eyes, streaks, running, sagging, wrinkles, pinholes, craters in paint, failure to meet minimum thickness requirements and non uniformity of specified color.
- c) Body panels or components that are uneven, unsealed, or contain cracks and dents.
- d) Misalignment of body fasteners, glass, viewing panels, light housings, other items with large or uneven gaps, spacing, etc., such as door, body panels, and hinged panels.
- e) Improperly fabricated and routed wiring or harness.
- f) Improperly supported or secured hoses, wires, wiring harnesses, mechanical controls, etc.
- g) Interference of chassis components, body parts, doors, etc.
- h) Leaks of any gas, vacuum, or fluid lines (air conditioning, coolant, oil, etc.).
- i) Noise, panel vibrations, etc.
- j) Inappropriate or incorrect use of hardware, fasteners, components, or methods of construction.
- k) Incomplete or improper welding, riveting, or bolting.
- l) Lack of uniformity and symmetry where applicable.

Substantiation: The Ambulance Regulation Program Staff felt that a workmanship section should be added as a catchall for any other deficiencies discovered that the draft proposal could not flush out or be documented in this draft.

Committee Meeting Action: Reject

Committee Statement: No measurable performance requirements and more appropriate for user specification.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-466 Log #927 **Final Action: Reject**
(Chapter 6)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: The proposed standard is currently silent on a number of patient compartment configuration issues that have been shown to be problematic in recent research and crash analysis. We recommend the Technical Committee consider addition of standards in the following areas:

- Emphasis on the use of forward and rear-facing seats whenever possible
- De-emphasis on the use of side-facing seats whenever possible
- Reduction of hazards in head-strike zones
- Access to patient compartment controls from all seated positions
- Access to essential medical equipment from all seated positions
- Use of multi-point harness inertial restraint systems as appropriate in front or rear facing seats

Furthermore, we are concerned that the emphasis on seat belt indication in section 6.26 is not appropriately balanced with an emphasis that equipment, controls and medical supplies be within easy reach of a belted provider.

Substantiation: Ambulance crash testing performed to date and ambulance crash analysis has indicated a variety of hazards associated with unrestrained providers:

<http://www.objectivesafety.net/LevickESVComparisons07-0249-W.pdf>

Additional issues have been identified with cabinetry within head strike zones <http://www.objectivesafety.net/LevickIEA2006.pdf> and side-facing seating positions. Any new standard should take steps to mitigate these issues.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation was provided.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

COLE, D.: The reason for reject is wrong. As in other accepted logs the recommendation was given and if the committee decided they didn't want to include recent research in this std. then they should say so and not give a reason of “No specific recommendation was provided”.

1917-467 Log #928 **Final Action: Reject**
(Chapter 6)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: The standard does not currently address that the ambulance be capable of accepting devices intended to assist with the lifting and/or loading of the patient cot into and out of the vehicle. We recommend language be added to encourage construction of the vehicle allow for the acceptance of commonly available lift assist devices. Lifting equipment for large oxygen tanks is also commonly available and should be able to be accommodated.

Substantiation: Lifting injuries account for a significant percentage of occupational injury for EMS providers. Some European ambulance manufacturers, including those in the United Kingdom, are currently designing lifting equipment into many ambulances <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2660029/>. While such a requirement to include this equipment would likely be cost prohibitive in the short-term, care should be taken ensure vehicle design will not prohibit the installation of this type of equipment.

Committee Meeting Action: Reject

Committee Statement: This should be a user defined feature, and the submitter hasn't provided text or substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-468 Log #941 **Final Action: Reject**
(Chapter 6)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: The proposed standard is currently silent on a number of patient compartment configuration issues that have been shown to be problematic in recent research and crash analysis. We recommend the Technical Committee consider addition of standards in the following areas:

- Emphasis on the use of forward and rear-facing seats whenever possible
- De-emphasis on the use of side-facing seats whenever possible
- Reduction of hazards in head-strike zones
- Access to patient compartment controls from all seated positions
- Access to essential medical equipment from all seated positions
- Use of multi-point harness inertial restraint systems as appropriate in front or rear facing seats

Furthermore, we are concerned that the emphasis on seat belt indication in section 6.26 is not appropriately balanced with an emphasis that equipment, controls and medical supplies be within easy reach of a belted provider.

Substantiation: Ambulance crash testing performed to date and ambulance crash analysis has indicated a variety of hazards associated with unrestrained providers: <http://www.objectivesafety.net/LevickESVComparisons07-0249-W.pdf>

Additional issues have been identified with cabinetry within head strike zones <http://www.objectivesafety.net/LevickIEA2006.pdf> and side-facing seating positions. Any new standard should take steps to mitigate these issues.

Committee Meeting Action: Reject

Committee Statement: Issues have been considered. No specific recommendation has been made by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

Comment on Affirmative:

COLE, D.: The reason for reject is wrong. As in other accepted logs the recommendation was given and if the committee decided they didn't want to include recent research in this std. then they should say so and not give a reason of "No specific recommendation was provided".

1917-469 Log #942 **Final Action: Reject**
(Chapter 6)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: The standard does not currently address that the ambulance be capable of accepting devices intended to assist with the lifting and/or loading of the patient cot into and out of the vehicle. We recommend language be added to encourage construction of the vehicle allow for the acceptance of

commonly available lift assist devices. Lifting equipment for large oxygen tanks is also commonly available and should be able to be accommodated.

Substantiation: Lifting injuries account for a significant percentage of occupational injury for EMS providers. Some European ambulance manufacturers, including those in the United Kingdom, are currently designing lifting equipment into many ambulances <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2660029/>. While such a requirement to include this equipment would likely be cost prohibitive in the short-term, care should be taken ensure vehicle design will not prohibit the installation of this type of equipment.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-447 (Log #457).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-470 Log #456 **Final Action: Reject**
(6.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.1 Patient Compartment Configuration.

The patient compartment shall provide a minimum of 325 ft³ (9.2 m³) of space or 275 ft³ (7.7 m³) of space for a Type II, less volume for cabinets, while complying with 6.1.1 through 6.1.3.

6.1.1 A minimum of 10 in. (254 mm) shall be provided, from the rear edge of the cot mattress to the rear loading doors, to permit clearance for traction or long board splints.

6.1.2 The compartment shall provide a minimum of 12 in. (300 mm) of clear aisle walkway on at least one side of the patient cot.

6.1.3 The patient compartment shall provide at least 60 in. (1.5 m) height, over the primary patient area, measured from floor to ceiling panels.

6.1.4 Validation of the minimum cubic foot requirement is required from the FSAM (with a 3 dimension drawing showing calculations) for the certification document.

Substantiation: For a type II ambulance the amount of cargo space on an E-350 extended van is 278 ft³ (http://www.comtruck.ford.com/vehicles/cargo_vans/capability.html). Raising the roof 14" (with a width of 50" and a length of 118") adds another 48 ft³ (278 ft³ + 48 ft³ = 326 ft³). 326 ft³ - 30 ft³ (for interior cabinet space)=296 ft³

This leaves 21 cubic foot of measuring nightmare for a type II ambulance. Having a drawing where the inspection body can quickly verify dimensions is greatly appreciated.

Committee Meeting Action: Reject

Committee Statement: 6.1.4 would require the FSAM to repeat work performed by the test lab.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-471 Log #1483 **Final Action: Accept**
(6.1)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Revise text to read as follows:

6.1 Patient Compartment Configuration. The patient compartment shall provide a minimum of 325 ft³ (9.2 m³) of space or 275 ft³ (7.7 m³) of space for a Type II, less volume for cabinets, while complying with 6.1.1 through 6.1.3.

Substantiation: A minimum requirement should not set two standards. If the minimum space requirement for the patient compartment is 275 ft³, it should be the minimum regardless of the chassis the vehicle is constructed from. Requiring a Type III ambulance to have a larger minimum space than a Type II limits the potential for thinking out-side-the-box in new chassis for Modular construction.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-472 Log #1598 **Final Action: Reject**
(6.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.1 to read as follows:

6.1 Patient Compartment Configuration. The patient compartment shall provide a minimum of 325 ft³ (9.2 m³) of space in a Type I patient compartment or 275 ft³ (7.7 m³) of space for a Type II patient compartment, less the volume for cabinets, while complying with 6.1.1 through 6.1.3.

Substantiation: This is editorial for clarification. Note that a type I and type III patient compartment are defined exactly the same so there is no need to mention a type III patient compartment.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-471 (Log #1483).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-473 Log #227 **Final Action: Reject**
(6.1.1)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Delete the following text:

~~6.1.1 A minimum of 10 in. (254 mm) shall be provided from the rear edge of the cot mattress to the rear loading doors, to permit clearance for traction or long board splints.~~

Substantiation: Section 6.1.1 is not needed. There are many different type of cots on the market that vary in sizes. This would depend upon which one you get with your ambulance purchase. But, later after the unit has been in service for several years, you want to upgrade the cot the upgrade may put the end of the cot up to 4 in. from the rear loading doors. Patients that are on backboards are better to have their feet at the end of the cot and the supporting head board sticking out from the top of the cot.

Committee Meeting Action: Reject

Committee Statement: Feel that clearance requirement is an important component to the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-474 Log #308 **Final Action: Accept in Principle**
(6.1.1)

Submitter: Charles D. Drake, SJC Industries Corporation

Recommendation: Revise text to read as follows:

6.1.1 A minimum of 10 in. (254 mm) shall be provided, from the rear edge of the cot mattress to the rear loading door(s), to permit clearance for traction or long board splints.

Substantiation: By referencing "rear" loading doors assumes that the only allowable configuration is to load the cot from the rear of the vehicle.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

6.1.1 A minimum of 10 in. (254 mm) shall be provided, from the rear nearest edge of the cot mattress to the rear loading door(s), to permit clearance for traction or long board splints.

Committee Statement: The committee clarified the intent.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-475 Log #1282 **Final Action: Reject**
(6.1.1)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

~~6.1.1 A minimum of 10 in. (254 mm) shall be provided, from the rear edge of the cot mattress to the rear loading doors, to permit clearance for traction or long board splints.~~

Substantiation: It is fine to express this as a preference, but it is completely unrealistic for type II and short modular ambulances.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-474 (Log #308).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-476 Log #360 **Final Action: Reject**
(6.1.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Revise text to read as follows:

The compartment shall provide an adequate a minimum of 12 in. (300 mm)

clear aisle walkway on at least one side of the patient cot.

Substantiation: The proposed standard lacks data to support minimum requirement; 12 in minimum not required.

Committee Meeting Action: Reject

Committee Statement: "Adequate" is not a measurable standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-477 Log #202 **Final Action: Accept**
(6.1.3)

Submitter: David B. Cole, Life Line Emergency Vehicles

Recommendation: Delete text to read as follows:

~~6.1.3 The patient compartment shall provide at least 60 in. (1.5 m) height, over the primary patient area, measured~~

Substantiation: Delete the entire section. Why is this section deleting the opportunity to use low height vehicles. The goal is a safer ambulance - so why not go full circle and back to the old style ambulances. they were probably the safest.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-478 Log #1601 **Final Action: Reject**
(6.1.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Define what the primary patient area is that needs to have at least 60 in. (1.5 m) height over it. For example, is the 10 inches required in 6.1.1 part of the primary patient area?

Substantiation: Without definition, there will be misinterpretations of the requirement.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-477 (Log #202).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-479 Log #26 **Final Action: Accept**
(6.2)

Submitter: John T. Griffin, Frazer, Ltd.

Recommendation: Revise text to read as follows:

“...modular construction it shall be (~~supported by full floating, automotive style rubber body mounts~~) mounted per the allowed and/or recommended methods of the chassis manufacturer.”

Substantiation: The Body Builder Books for Ford and Chevrolet have always suggested the use of shear plates for a SUB (second unit body) weighing over 1,800 pounds. Do not restrict manufacturers to only one method.

Note: Supporting material is available for review at NFPA Headquarters.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-480 Log #361 **Final Action: Reject**
(6.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Revise text to read as follows:

Mounting. If the body is of a modular construction with seal it shall be supported by full floating, automotive style, rubber body mounts.

Substantiation: The proposed standard shall comply with “Sprinter Type” design or needs to be re-written to include all types of automotive ambulances.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-479 (Log #26).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-481 Log #1064 **Final Action: Reject**
(6.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.2 Mounting.

If the body is of a modular construction it shall be supported PER OEM Chassis MANUFACTURERS'S BODY BUILDER GUIDELINES ~~by full floating, automotive style, rubber body mounts.~~

Substantiation: All bodies, systems, equipment, and interfaces with the chassis shall be done in accordance with the OEM Body Builders Book. This already exists in section 4.4.5. Not all OEM chassis manufacturers allow the use of rubber body mounts, EXAMPLE—“Sprinter Products”

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-479 (Log #26).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-482 Log #1283 **Final Action: Reject**
(6.2)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.2 Mounting

If the body is of a modular construction it shall be ~~supported by full floating, automotive style, rubber body mounts~~ securely attached to the chassis with high-strength fasteners in no fewer than 10 locations.

Substantiation: The spec should address performance rather than style

attributes. We are interested first in a strong chassis-to-module connection and second in vibration isolation. Both of those interests can be satisfied—and in some ways better satisfied—with other types of mounts.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-479 (Log #26).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-483 Log #1484 **Final Action: Reject**
(6.2)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Revise text to read as follows:

6.2 Mounting. If the body is of a modular construction it shall be supported by a method specified by the original chassis manufacturer. ~~full floating, automotive style, rubber body mounts.~~

Substantiation: Limiting the supports to a specific mounting type limits the chassis choice and negates the use of newly designed mounting systems.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-479 (Log #26).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-484 Log #1525 **Final Action: Reject**
(6.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.2 Mounting. If the body is of a modular construction it shall be supported PER OEM Chassis MANUFACTURERS'S BODY BUILDER GUIDELINES ~~by full floating, automotive style, rubber body mounts.~~

Substantiation: Body mounting must first default to any chassis mfr. requirements.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-479 (Log #26).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-485 Log #296 **Final Action: Reject**
(6.2.1)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Add new text to read as follows:

6.2.1 Modular Body Frontal and Rear Test

The modular body shall be tested in accordance with SAE J2420, COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks, 2003 as well as the side and rear of the modular body.

Substantiation: In the current draft of 1917 there are no requirements for the dynamic testing of the modular body. We feel that there should be. The SAE J2420 is used as a cab integrity test in NFPA 1901. Subjecting the modular body to this test helps to insure modular body integrity and the body to frame mount integrity in the event of an accident.

Committee Meeting Action: Reject

Committee Statement: OEM chassis mounting procedures are sufficient assurance of mount strength.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-486 Log #455 **Final Action: Accept in Principle**
(6.3)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.3 Structural Integrity - Roof Loading.

6.3.1 The ambulance body shall be tested to meet the requirements of FMVSS 220.

6.3.2 Where the wording “school bus” is used in the standard (FMVSS 220) it shall be replaced with the word “Ambulance”.

6.3.1 Any Type I ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to the roof of the vehicle’s body structure validated by testing a substantially similar ambulance in accordance with AMD 001, Ambulance Body Structure Static Load Test.

6.3.2 Any Type II ambulance body shall withstand a force equal to 1.5 times the curb weight of the vehicle applied to the roof of the vehicle’s body structure validated by testing a substantially similar ambulance in accordance with AMD 001, Ambulance Body Structure Static Load Test.

6.3.3 Any Type III ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to the roof of the vehicle’s body structure validated by testing a substantially similar ambulance in accordance with AMD 001, Ambulance Body Structure Static Load Test.

6.3.4 The downward vertical movement at any point on the roof application plate shall not exceed 5.12 in. (130 mm).

6.3.5 Each exterior exit door of the vehicle shall be capable of opening and closing during the full application of the force and after release of the force.

6.3.6 No structural damage to any load bearing or supporting members (i.e., torn or broken material, broken welds, popped or sheared body rivets, bolts and/or fasteners) shall be evident during the application of the force and after the release of the force.

Substantiation: The AMD test currently validates the ability of a square tube to be compressed. The FMVSS 220 school bus test better validates the proper amount of structure is used to protect the occupants.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on 1917-490 (Log #297) which takes care of this issue for Type I & III vehicles. Type II vehicles would not be tested to J2422, so this would apply to those vehicles.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-487 Log #1697 **Final Action: Reject**
(6.3)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Problem: Structural Integrity. Roof and Side loading are age old standards and should not be ignored. However, these do not address corner impact. Modular ambulances appear vulnerable to corner or shearing type impacts which result in the peeling or shearing away of module side walls. Design and testing should address this serious vulnerability.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-488 Log #1485 **Final Action: Reject**
(6.3 and 6.4)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Delete entire sections and replace with dynamic testing standards.

Substantiation: Requiring only static testing for automotive ambulances is substandard.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation or substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-489 Log #1599 **Final Action: Reject**
(6.3.1, 6.3.2 and 6.3.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Replace 6.3.1 through 6.3.3 with a single paragraph that reads:

6.3.1 The ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to the roof of the vehicle’s body structure validated by testing a substantially similar ambulance in accordance with AMD 001, Ambulance Body Structure Static Load Test.

Substantiation: A standard cannot define 2 different levels of safety for the same situation. See MOS 2.2.3.3. If the ambulance body has to withstand a force equal to 2.5 times the curb weight of the vehicle for 2 types of ambulances, then the third type must also meet the same requirement.

Committee Meeting Action: Reject

Committee Statement: Type II units should not be subject to a different standard from Types I & III.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-490 Log #297 **Final Action: Accept**
(6.3.1.1)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Add new text to read as follows:

6.3.1.1 Modular Body Roof Strength Evaluation

The modular body shall be tested in accordance with SAE J2422 and ECE R29.

Substantiation: In the current draft of 1917 there are no requirements for the dynamic testing of the modular body. We feel that there should be. The SAE J2422 and ECE R29 are currently used as in NFPA 1901 to test the cab roof integrity. Subjecting the modular body to these tests helps to insure modular body integrity and the body to frame mount integrity in the event of an accident.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-491 Log #739 **Final Action: Accept in Principle**
(6.3.2)

Submitter: Aaron Reinert, Lakes Region EMS

Recommendation: 6.3.2 Oxygen, Main Supply and Installation.

Substantiation: This section doesn’t allow for users who have liquid oxygen systems. Section should be revised to include liquid oxygen

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-820 (Log #CP11).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-492 Log #1065 **Final Action: Accept**
(6.3.5)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.3.5 Each exterior exit door of the vehicle shall be capable of opening and closing during the full application of the force and after release of the force.

Substantiation: All exterior doors should be capable of meeting this standard.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-493 Log #458 **Final Action: Accept in Principle**
(6.3.6 and 6.4.5)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

~~6.3.6 No structural damage to any load-bearing or supporting members (i.e., torn or broken material, broken welds, popped or sheared body rivets, bolts and/or fasteners) shall be evident during the application of the force and after the release of the force.~~

6.3.6 If the structural members have been compromised during the loading (i.e., torn or broken material, broken welds, popped or sheared body rivets, bolts and/or fasteners), validation of the support structure should be performed by testing 6.3.6.1.

6.3.6.1 If the required load has been established and the deflection at any point has not exceeded 5.12", increase the load by 15% and hold for a period of 60 seconds.

~~6.4.5 No structural damage to any load-bearing or supporting members (i.e., torn or broken material, broken welds, popped or sheared body rivets, bolts and/or fasteners) shall be evident during the application of the force and after the release of the force.~~

6.3.5 If the structural members have been compromised during the loading (i.e., torn or broken material, broken welds, popped or sheared body rivets, bolts and/or fasteners), validation of the support structure should be performed by testing 6.3.5.1.

6.3.5.1 If the required load has been established and the deflection at any point has not exceeded 5.12", increase the load by 15% and hold for a period of 60 seconds.

Substantiation: It is likely with over 5" of deflection allowed something will tear, shear, or pop. The above proposed wording will allow the failure (in the structure) and provide validation there is enough structure for roof/side crush

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-490 (Log #297) which takes care of this issue for Type I & III vehicles. Type II vehicles would not be tested to J2422, so this would apply to those vehicles.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-494 Log #459 **Final Action: Reject**
(6.4)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.4 Body Structural Integrity - Side Loading.

6.4.1 All ambulances manufactured shall meet the side intrusion requirements set forth by the National School Transportation Specifications and Procedures, 2005 Revised Edition.

6.4.2 verification shall be validated by testing a substantially similar ambulance.

~~6.4.1 Any Type I ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to either the driver or passenger side of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with AMD 001, Ambulance Body Structure Static Load Test.~~

~~6.4.2 Any Type III ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to either the driver or passenger side of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with AMD 001, Ambulance Body Structure Static Load Test.~~

~~6.4.3 The downward vertical movement at any point on the side application plate shall not exceed 5.12 in. (130 mm).~~

~~6.4.4 The rear doors of the vehicle shall be capable of opening and closing~~

~~during the full application of the force and after release of the force.~~

~~6.4.5 No structural damage to any load-bearing or supporting members (i.e., torn or broken material, broken welds, popped or sheared body rivets, bolts and/or fasteners) shall be evident during the application of the force and after the release of the force.~~

Substantiation: The AMD test currently validates the ability of a square tube to be compressed. The school bus test (see attached) better simulates a side impact or roll over onto a concrete abutment.

Note: Supporting material is available for review at NFPA Headquarters.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-495 Log #1600 **Final Action: Reject**
(6.4.1 and 6.4.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Replace 6.4.1 and 6.4.2 with the following:

6.4.1 The ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to either the driver or passenger side of the vehicle's body structure validated by testing a substantially similar ambulance in accordance with AMD 001, Ambulance Body Structure Static Load Test.

Substantiation: A standard cannot define 2 different levels of safety for the same situation. If the ambulance body has to withstand a force equal to 2.5 times the curb weight of the vehicle for 2 types of ambulances, then the third type must also meet the same requirement.

Committee Meeting Action: Reject

Committee Statement: Type II units should not be subject to a different standard from Types I & III.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-496 Log #1223 **Final Action: Reject**
(6.4.3)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: 6.4.3 Should read "The sideways horizontal".

Substantiation: Since this section applies to side loading the text needs to be changed to reflect this, this is probably a copy paste error from the roof loading section.

Committee Meeting Action: Reject

Committee Statement: The committee deleted section 6.4.3 in Proposal 1917-3 (Log #12). See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-497 Log #295 **Final Action: Reject**
(6.4.6)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Add new text to read as follows:

6.4.6 Modular Body Side Impact Test - Dynamic

The modular body shall be tested in accordance with IIHS Crashworthiness Evaluation Side Impact Crash Test Protocol IV.

Substantiation: In the current draft of 1917 there are no requirements for the dynamic testing of the modular body. We feel that there should be. The IIHS Crashworthiness Evaluation Side Impact Crash Test is currently performed on automobiles to test side impact integrity. Subjecting the modular body to this test helps to insure modular body integrity in the event of a side impact accident.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-498 Log #1602 **Final Action: Accept in Principle**
(6.5)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.5.1.2 to read as follows:

6.5.1.2 Compliance with 6.5.1.1 of the body sealing out water shall be validated by testing each finished a substantially similar ambulance in accordance with AMD 010, Water Spray Test.

Also move 6.5 to chapter 4 or 5 as it deals with more than the patient compartment.

Substantiation: AMD 010, Water Spray Test, states each finished ambulance is to be tested. Reference is being made to 6.5.1.1 rather than just stating “the body” as more than the body is required to be tested.

Chapter 6 is requirements for the patient compartment. Requirements for more than just the patient compartment should be in a chapter that applies to the whole ambulance.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action in 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-499 Log #467 **Final Action: Accept in Principle**
(6.5.1.2)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.5.1.2 Compliance of the body sealing out water shall be validated by testing a substantially similar ambulance in accordance with section 9.x AMD 010, Water Spray Test.

9.x Water Leak Test.

9.x.1 This test shall be performed during the following environmental conditions:

(1) Temperature above 40° F (4 C).

(2) Wind velocity not to exceed 10 mph (16 km/hr).

9.x.3 Close all windows and doors

9.x.4 Turn off heating, ventilating and air conditioning (HVAC) systems.

9.x.5 Drench the entire roof, sides, front and back of the vehicle evenly with water spray from a nozzle or combination of nozzles.

9.x.6 Continue spraying until a minimum of 40 gal. (151 L) of water has been used.

9.x.7 Start engine and operate the cab and patient compartment ventilation systems at maximum ventilation rates.

9.x.8 Continue spraying until a minimum of 40 gal. (151 L) of water has been used.

9.x.9 Inspect the interior of the cab and patient compartment for water leaks during the duration of the test.

9.x.10 At the conclusion of the test examine all exterior lights and exterior compartments for leakage

Substantiation: AMD 10 is not worded well. Propose new test section in chapter 9 to replace AMD 10

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-500 Log #30 **Final Action: Reject**
(6.5.2)

Submitter: John F. Bender, Underwriters Laboratories Inc.

Recommendation: Revise text to read as follows:

6.5.2 Sealing Out Exhaust Gas.

6.5.2.1 The body shall be sealed and vented so that the interior carbon monoxide level does not exceed 130 ppm of CO above ambient conditions.

6.5.2.2 The patient compartment shall include a listed carbon monoxide detector in accordance with ANSI/UL 2075, Standard for Gas and Vapor Detectors and Sensors.

Substantiation: Specify that a “listed” carbon monoxide detector is required

and add reference to ANSI/UL 2075 to ensure the carbon monoxide detector meets the appropriate safety test standard for this application. Change the existing proposed value of 10 ppm of CO to 13 ppm to account for the 3 ppm ambient background of CO the UL typically allows when testing. This provides an absolute overall value in the standard and removes any ambiguity that may be created about what value to account for “ambient conditions” in the current proposed text.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-501 Log #466 **Final Action: Reject**
(6.5.2)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

6.5.2.1 The Ambulance body shall be sealed and vented so that the interior carbon monoxide level does not exceed 40 50 ppm of CO above ambient conditions:

6.5.2.2 The patient compartment shall include a carbon monoxide detector.

6.5.2.3 The carbon monoxide meter should be installed 6” from the head liner in an out of the way area for normal activity.

Substantiation: The OSHA Permissible Exposure Limit (PEL) is 50 parts per million (ppm). OSHA standards prohibit worker exposure to more than 50 parts of the gas per million parts of air averaged during an 8-hour time period. (http://www.osha.gov/OshDoc/data_General_Facts/carbonmonoxide-factsheet.pdf)

When considering where to place a carbon monoxide detector, keep in mind that although carbon monoxide is roughly the same weight as air (carbon monoxide’s specific gravity is 0.9657, as stated by the EPA; the National Resource Council lists the specific gravity of air as one), it may be contained in warm air coming from combustion appliances such as home heating equipment. If this is the case, carbon monoxide will rise with the warmer air. (<http://www.carbonmonoxidekills.com>)

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-502 Log #1254 **Final Action: Reject**
(6.5.2)

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: Add new text to read as follows:

6.5.2.3 The carbon monoxide detector shall be located a minimum of 36 inches from the ambulance floor.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-503 Log #655 **Final Action: Reject**
(6.5.2.1)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Delete the following text:

6.5.2.1 The body shall be sealed and vented so that the interior carbon monoxide level does not exceed 10 ppm of CO above ambient conditions.

Substantiation: If you call for a level than there should be a test to verify that level if not delete level and just ask for carbon monoxide detector.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-504 Log #1366 **Final Action: Reject**
(6.5.2.1)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

The body shall be sealed and vented so that the interior carbon monoxide level does not exceed 10 ppm of CO above ambient conditions.

Substantiation: The test criteria for this needs to be defined. 10 ppm is a very tight measurement and will require expensive measurement equipment and an isolated testing area. The UL 2034 detection level requirement for testing is 70 ppm/10% COHB. OSHA's requirement is 50 ppm, 55 mg/m3 TWA exposure. Why is this so low and how can it be measured or maintained? A detector this sensitive could cost several thousand dollars.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-505 Log #203 **Final Action: Accept in Principle**
(6.5.2.2)

Submitter: David B. Cole, Life Line Emergency Vehicles

Recommendation: Delete text to read as follows:

~~6.5.2.2 The patient compartment shall include a carbon monoxide detector.~~

Substantiation: Delete the entire section. We have used a CO2 detector in the back of an ambulance and it doesn't work.

It is not a benefit to the provider or the patient. The doors are open to often.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-506 Log #362 **Final Action: Reject**
(6.5.2.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Revise text to read as follows:

The patient compartment shall include a carbon monoxide detector for gasoline powered automotive ambulances.

Substantiation: The proposed standard is not relevant for diesel fueled automotive ambulances.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-507 Log #702 **Final Action: Accept in Principle**
(6.5.2.2)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Delete Carbon Monoxide tester.

Substantiation: Ambulances spend a lot of time running with the walk-in doors open-consequently the alarm will be set off quite often.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-508 Log #952 **Final Action: Accept in Principle**
(6.5.2.2)

Submitter: Kevin Sullivan, Town of Enfield - EMS Division

Recommendation: The requirement that the patient compartment have a carbon monoxide detector is unnecessary and expensive. It should be removed.

Substantiation: Over the course of years in management, I cannot tell you how many times people have complained about the most minor vehicle smells in the back of the ambulance. Out of consideration for safety, we once bought a meter to test the air in the environment of the back of the ambulance. Not once did that meter measure an unsafe amount of exhaust in the rear. I have, however, paid thousands of dollars to have meters calibrated and tested. These meters are unnecessary; they will add significant expense without adding any value.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-509 Log #1202 **Final Action: Reject**
(6.5.2.2)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Revise text to read as follows:

The patient compartment shall include a carbon monoxide detector for gasoline powered automotive ambulances.

Substantiation: The proposed standard is not relevant for diesel fueled automotive ambulances.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-510 Log #1284 **Final Action: Reject**
(6.5.2.2)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

~~6.5.2.2 The patient compartment shall include a carbon monoxide detector.~~

Substantiation: The value of a carbon monoxide detector is questioned. Cleaner engines, sealed modules, and properly placed makeup air inlets should render the detector unnecessary. If a detector is required, that requirement should be based upon statistically valid tests that demonstrate the need for a detector in a properly constructed ambulance.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-511 Log #1367 **Final Action: Reject**
(6.5.2.2)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

The patient compartment shall include a carbon monoxide detector.
Substantiation: What is the level of carbon monoxide the detector is required to detect? Should the detector have a normal warning and alarm indication? Should the detector have an output to be used for supplemental ventilation since evacuation may not be possible? The UL 2034 spec for RV's should be used.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-512 Log #1698 **Final Action: Accept in Principle**
(6.5.2.2)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Problem: Carbon Monoxide Detectors are a great idea in theory. How do you propose to keep it from going off every time the ambulance parks next to a running engine or ladder company at a scene or sits idling with its doors open for a few moments? Ambulance crews will either put the ambulance down for maintenance to check the monitor or they will quickly develop a means of defeating the monitor's audible alarm. In the latter case, the presence of a monitor may create a false sense of security to other crews who are not aware it has been tampered with.

Substantiation: None given.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-513 Log #1840 **Final Action: Accept in Principle**
(6.5.2.2)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Delete the following text:

6.5.2.2 1. ~~The patient compartment shall include a carbon monoxide detector.~~

Substantiation: Not really needed and one more thing to have a problem with.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-514 Log #CP12 **Final Action: Accept**
(6.5.2.2)

Submitter: Technical Committee on Ambulances,

Recommendation: Delete the following:

~~6.5.2.2 The patient compartment shall include a carbon monoxide detector.~~

Substantiation: Many public comments on the fact that CO monitors are unreliable or too sensitive.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-515 Log #1814 **Final Action: Accept in Part**
(6.5.2.2 and 6.13.7)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Delete the following text:

6.5.2.2 1. ~~The patient compartment shall include a carbon monoxide detector.~~
6.13.7 3. If key locks are provided they shall be keyed alike and shall be keyed identical to the patient compartment door locks.

Substantiation: Not really needed and one more thing to have a problem with. Less confusion.

Committee Meeting Action: Accept in Part

Committee Statement: See committee action on Proposal 1917-514 (Log #CP12). Door keying is up to the purchaser.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-516 Log #929 **Final Action: Reject**
(6.6)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: The standard currently requires that tire chains be accommodated and sufficient clearance be provided to easily apply and remove chains. We recommend an upgrade of this section to further clarify that is should be easy to apply and remove tire chains from all drive wheels. The technical committee may also wish to consider ensuring that the standard mentions that it should also be possible to install automatic tire chain systems on appropriate drive wheels.

Substantiation: Tire chains are commonly used and legally required in a number of situations in the Rocky Mountain West <http://www.coloradodot.info/library/Brochures/ChainTips.pdf>. The standard is somewhat supportive of ensuring that tire chains be possible, but could be strengthened to address installation on inside wheels and to accommodate automatic chain systems.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation. Accommodation for automatic tire chains are up to the customer.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-517 Log #943 **Final Action: Reject**
(6.6)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: The standard currently requires that tire chains be accommodated and sufficient clearance be provided to easily apply and remove chains. We recommend an upgrade of this section to further clarify that is should be easy to apply and remove tire chains from all drive wheels. The technical committee may also wish to consider ensuring that the standard mentions that it should also be possible to install automatic tire chain systems on appropriate drive wheels.

Substantiation: Tire chains are commonly used and legally required in a number of situations in the Rocky Mountain West <http://www.coloradodot.info/library/Brochures/ChainTips.pdf>. The standard is somewhat supportive of ensuring that tire chains be possible, but could be strengthened to address installation on inside wheels and to accommodate automatic chain systems.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation. Accommodation for automatic tire chains are up to the customer.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-518 Log #1603 **Final Action: Accept**
(6.6.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.6.3 to read:

6.6.3 Type II OEM's standard wheel housings on Type II ambulances shall be acceptable.

Substantiation: There is no such thing as a "Type II OEM's standard wheel housing". I assume the committee is referring to a type II ambulance. Rewording states the allowance correctly.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-519 Log #1604 **Final Action: Reject**
(6.7)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: **Recommendation:**

Review 6.7 and clarify what the requirements are.

Substantiation: 6.7.2, 6.7.3 and 6.7.4 seem to be subsets or related to 6.7.1 and apply to Type II ambulances.

6.7.5, 6.7.6 and 6.7.7 seem to be a separate requirement applicable to Type I ambulances.

6.7.6 is confusing as it sounds like the modular body must have a window but how does it align with a body window?

I recommend the committee consider the following wording to clarify the intent.

6.7 Patient Compartment to Cab Partition.

6.7.1 Where a bulkhead partition is provided it shall be placed between the driver and patient's compartment.

6.7.1.1 ~~6.7.2~~ The partition(s) shall be located directly behind the driver and cab passenger seats when both seats are in their rearmost position.

6.7.1.2 ~~6.7.3~~ The partition shall extend from the floor to the ceiling.

6.7.1.3 ~~6.7.4~~ The partition shall be wide enough to cover the width of each cab seat excluding arm rests.

6.7.2 ~~6.7.5~~ If the ambulance has a modular body and the cab has a rear window, ~~body bulkheads shall have~~ an aligned window opening of at least 150 in.2 (139 mm2) or other means of visual and hands free audio communication shall be provided.

6.7.2.1 ~~6.7.6~~ If the opening is equipped with a window in either the cab or body it shall be of the sliding type, ~~shall be aligned, and connect with the modular body window opening~~.

6.7.2.2 ~~6.7.7~~ The window shall be latchable from the cab side and shall be a transparent, shatterproof panel.

Committee Meeting Action: Reject

Committee Statement: Current draft language is adequate for a minimum standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-520 Log #1066 **Final Action: Reject**
(6.7.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.7.1 Where a bulkhead partition ~~is~~ shall be provided it shall be placed between the driver and patient's compartment.

Substantiation: KKK1822 Requires a bulkhead—It allows a solid bulkhead with a window or a split bulkhead with a partition door. Specific size of the door opening should be provided.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-521 (Log #1526).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-521 Log #1526 **Final Action: Accept in Principle**
(6.7.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.7.1 Where a bulkhead partition ~~is~~ shall be provided it shall be placed between the driver and patient's compartment.

Substantiation: Bulkhead/partition needs to be included, not optional.

Committee Meeting Action: **Accept in Principle**

Revise text to read as follows:

6.7.1 Where a bulkhead partition is shall be provided it shall be placed between the driver and patient's compartment.

Committee Statement: The existing text already had "shall" stated.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-522 Log #309 **Final Action: Reject**
(6.7.2)

Submitter: Charles D. Drake, SJC Industries Corporation

Recommendation: Revise text to read as follows:

6.7.2 The partition(s) shall be located directly behind the driver and cab passenger seats when in the rearmost position.

Substantiation: When written that the partition shall be "directly" behind the seats it infers that extended cab compartments would not be allowed, when we believe the intent was to insure full seat travel not limit cab space.

Committee Meeting Action: **Reject**

Committee Statement: See committee action on Proposal 1917-521 (Log #1526).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-523 Log #1024 **Final Action: Reject**
(6.7.2)

Submitter: Jim Fingerhut, St. Charles County Ambulance District

Recommendation: Revise text to read as follows:

The partition(s) shall be located directly behind the driver and cab passenger seats when in the rearmost Position: (the wall shall not interfere with the passengers normal sitting position.).

Substantiation: This allows the manufacture to only have room for the seat to be straight up. Most drivers have the seat slightly reclined to facilitate arm extension. Straight up right position places some drivers too close to the steering wheel/airbag.

Committee Meeting Action: **Reject**

Committee Statement: See committee action on Proposal 1917-521 (Log #1526).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-524 Log #1605 **Final Action: Accept in Part**
(6.7.5)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Change the metric equivalent of 150 in2 to 96,780 mm2 Also consider adding a minimum height and width so the window does not wind up being out of proportion such as 40 inches wide and 4 inches tall.

Substantiation: The metric conversion shown is incorrect. Also without minimum dimensions, a very narrow but tall window or a wide but short window could be provided.

Committee Meeting Action: **Accept in Part**

Committee Statement: The committee is accepting the correction on the metric conversion and rejects the proposed proportional dimensions, this is a customer option.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-525 Log #656 **Final Action: Accept in Principle**
(6.7.5 (New))

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Add new text to read as follows:

DOOR / WALKTHRU FOR TYPE II AND TYPE III. Unless otherwise specified by the purchaser to delete walkthru or to specify or approve alternate door opening dimensions the door opening shall be at least 43 cm (17 in.) wide and 117 cm (46 in.) high and shall provide an aisle between the compartments. The door shall have at least a 968 sq. cm (150 square in.), transparent, shatterproof viewing panel in the center section at the driver's eye level. The door shall be secured with a driver's side self-latching device in the open and closed positions.

Substantiation: You need to add verbiage describing the walkthru door for Type II and Type III ambulances. Many services prefer this do to some areas where there has been domestic issue and not having to go back out to get into the drivers compartment after loading patient.

Committee Meeting Action: Accept in Principle

Add new Annex to read as follows:

A.6.7.5 DOOR / WALKTHRU FOR TYPE II AND TYPE III. Unless otherwise specified by the purchaser to delete walkthru or to specify or approve alternate door opening dimensions the door opening shall be at least 43 cm (17 in.) wide and 117 cm (46 in.) high and shall provide an aisle between the compartments. The door shall have at least a 968 sq. cm (150 square in.), transparent, shatterproof viewing panel in the center section at the driver's eye level. The door should be secured cab side self-latching device in the open and closed positions.

Committee Statement: The committee believes this text should be part of the Annex.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-526 Log #1486 **Final Action: Reject**
(6.7.6)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Revise text to read as follows:

~~6.7.6 If equipped with a window in the cab or body it shall be of the sliding-type; shall be aligned, and connect with the modular body window opening.~~

Substantiation: Elsewhere in the proposed standard is a requirement for hands-free communication and visual contact between the cab and patient compartment. Requiring a rear window in the cab, and front window in the module to be connected is unnecessary and adds to maintenance costs.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-521 (Log #1526).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-527 Log #1527 **Final Action: Accept in Principle**
(6.7.8)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Add new text to read as follows:

6.7.8 DOOR / WALKTHROUGH FOR TYPE II, III, AND III AD VEHICLES.

6.7.8.1 The door opening shall be at least 17" wide and 46" high and shall provide an aisle between the compartments.

6.7.8.2 The door shall have at least a 150 sq. in., transparent, shatterproof viewing panel in the center section at the driver's eye level.

6.7.8.3 The door shall be secured with a driver's side self-latching device in the open and closed positions.

Substantiation: Recommend adding this from the K-Spec for the walkthrough opening.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-525 (Log #656).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-528 Log #363 **Final Action: Reject**
(6.8)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Access Handrails or Handholds:~~

Substantiation: The proposed standard lacks data to support standard and increases cost to design. Regarding 6.8.7.1, there are handrail requirements in buildings and other vehicles – research supports their installation and use. Ambulance design should be backed by similar evidence.

Committee Meeting Action: Reject

Committee Statement: Committee feels that handrails are beneficial and necessary.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-529 Log #1014 **Final Action: Reject**
(6.8)

Submitter: David Schimmel, Wayne Memorial First Aid Squad

Recommendation: Revise text to read as follows:

6.8.2 Exterior access handrails shall be constructed of or covered with a slip-resistant, noncorrosive material. All handrails shall have an antimicrobial protective coating.

Substantiation: Why are these not coated for antimicrobial protection? One of the greatest risks to the EMT is bacteria and infection along with patient cross contamination.

Committee Meeting Action: Reject

Committee Statement: Anti-microbial coatings are not practical for exterior handrails.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-530 Log #204 **Final Action: Reject**
(6.8.1)

Submitter: David B. Cole, Life Line Emergency Vehicles

Recommendation: Eliminate the word ladder.

Substantiation: Delete the word ladder -- is this an ambulance or a fire truck

Committee Meeting Action: Reject

Committee Statement: Ladder handrails are beneficial & necessary.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-531 Log #465 **Final Action: Accept**
(6.8.2)**Submitter:** Andrew J. Alger, Progressive Engineering Inc.**Recommendation:** Add text to read as follows:

6.8.2 Exterior access handrails shall be constructed of or covered with a slip-resistant (*i.e., cross hatched stainless steel, rubberized, etc.*), noncorrosive material.

Substantiation: Either we need to have a definition of “slip resistant” or need to have examples listed.

Committee Meeting Action: Accept**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-532 Log #1203 **Final Action: Reject**
(6.8.3)**Submitter:** Mark D. Meijer, Life EMS Ambulance**Recommendation:** Delete the following text:

Exterior access handrails shall be between 1 in. and 1 5/8 in. (25 mm and 42 mm) in diameter and have a minimum clearance between the handrails and any surface of at least 2 in. (50 mm).

Substantiation: The proposed standard lacks data to support standard and increases cost to design.

Committee Meeting Action: Reject**Committee Statement:** Current draft language is beneficial and desirable.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-533 Log #1285 **Final Action: Reject**
(6.8.3)**Submitter:** Jerry Allen, Braun Northwest, Inc.**Recommendation:** Revise text to read as follows:

6.8.3 Exterior access handrails shall be between 1 in. and 1 5/8 in. (25 mm and 42 mm) in diameter and have a minimum clearance between the handrails and any surface of at least 2 in. (50 mm) 1-3/4 in. (44 mm).

Substantiation: A clearance of 1-3/4 in. accommodates a gloved hand without unnecessarily increasing the protrusion of the handrail.

Committee Meeting Action: Reject**Committee Statement:** Current draft language is beneficial and desirable.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-534 Log #1067 **Final Action: Accept in Principle**
(6.8.5)**Submitter:** Randy A. Hanson, American Emergency Vehicles**Recommendation:** Revise text to read as follows:

6.8.5 Handrails and handholds shall be constructed so that three points of contact (two hands and one foot, or one hand and two feet) can be maintained at all times while ascending and descending.

Substantiation: How is this possible for the rear door area?

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-535 (Log #1528).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-535 Log #1528 **Final Action: Accept**
(6.8.5)**Submitter:** Steve Spata, AMD Technical Committee & National Truck Equipment Association**Recommendation:** Delete text to read as follows:

6.8.5 Handrails and handholds shall be constructed so that (three points of contact) (two hands and one foot, or one hand and two feet) can be maintained at all times while ascending and descending.

Substantiation: This is not possible to do on the rear entrance doors and this item should be removed.

Committee Meeting Action: Accept**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-536 Log #464 **Final Action: Accept in Principle**
(6.8.7.2, 9.8)**Submitter:** Andrew J. Alger, Progressive Engineering Inc.**Recommendation:** Revise text to read as follows:

6.8.7.2 Compliance of the handrail shall be validated by testing a substantially similar ambulance or body structure to section 9.x in accordance with AMD-008, Patient Compartment Grab Rail Static Load Test.

9.8 Handrail Static Load Test

9.8.1 Apply force to hand rail at the midpoint between ever location where the land rail fastens to the vehicle body structure and as near as possible to the ends of the handrail.

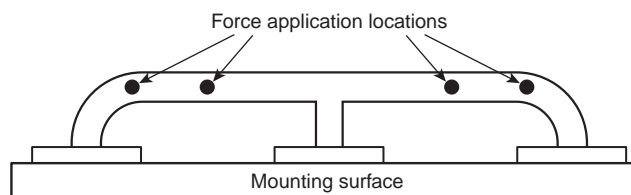


Figure 9.8.1 Location of Force Application on Handrail

9.8.2 Apply the force perpendicular to the mounting surface.

9.8.3 Apply the force parallel to the mounting surface.

9.8.4 Apply the force diagonal to the mounting surface at an angle midway between the perpendicular and the parallel pulls.

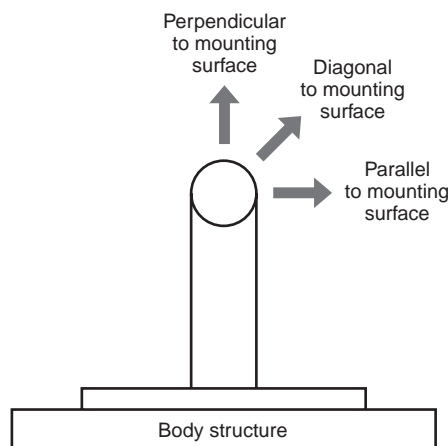


Figure 9.8.4 Direction of Force Application on Handrail

9.8.5 Maintain each force application for two minutes.

Substantiation: AMD 008 does not test all handrails though out the ambulance. New test parameters should be adopted to require all handrails to be tested

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-537 Log #364 **Final Action: Reject**
(6.9)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

~~Patient Compartment Entry Doors:~~

Substantiation: The proposed standard lacks data to support standard and increases cost to design.

Committee Meeting Action: Reject

Committee Statement: Committee feels that current requirements are beneficial and necessary.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-538 Log #1068 **Final Action: Accept**
(6.9.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.9.2 ENTRY—Doors AND DOOR OPENINGS shall be designed to minimize inadvertent snagging of apparel.

Substantiation: Entry door openings containing any type of protrusion needs to be shielded or covered to prevent inadvertent snagging of apparel.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-539 Log #1529 **Final Action: Accept in Principle**
(6.9.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.9.2 ENTRY—Doors AND DOOR OPENINGS shall be designed to minimize inadvertent snagging of apparel.

Substantiation: Clarification to limit this to entry way doors vs. cabinet doors, and also to include the door openings in the requirement too.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-538 (Log #1068).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-540 Log #1606 **Final Action: Reject**
(6.9.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.9.3 to read as follow:

6.9.3 Door latches, hinges, and hardware furnished by OEM and FSAMs shall meet the performance requirements of FMVSS 206 or other applicable legally adopted standards.

Substantiation: The acronym FSAM is used without definition or reference to a source. However, the door latches, hinges, and hardware need to meet FMVSS 206 or other applicable legally adopted standards regardless of who furnishes them.

NFPA standards are international standards and need to accommodate legal requirements if used outside the United States.

Committee Meeting Action: Reject

Committee Statement: FMVSS compliance is required by law.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-541 Log #463 **Final Action: Accept in Principle**
(6.9.4)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

6.9.4 When doors are open, the hinges, latches, and door-checks shall be designed so as to not snag articles of clothing when entering or exiting the vehicle, not protrude into the access area.

Substantiation: I believe this is the intent of the original text. If the original text is kept there will need to be a drawing/diagram of what the “access area” is to avoid confusion

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-538 (Log #1068).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-542 Log #1069 **Final Action: Reject**
(6.9.4)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.9.4 When doors are open, the hinges, latches, and door-checks shall not protrude into the access area.

Substantiation: The minimum size of the clear opening needs to be determined. Most designs will not allow for the hinge and door check to be completely out of the access area.

NFPA 6.9.2 mandates protrusions to be covered to prevent snagging of apparel.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-538 (Log #1068).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-543 Log #1530 **Final Action: Reject**
(6.9.4)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.9.4 When doors are open, the hinges, latches, and door-checks shall not protrude into the access area.

Substantiation: Need to define minimum access area – propose using dimensions from K-Spec.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-538 (Log #1068).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-544 Log #1204 **Final Action: Reject**
(6.9.5)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

Doors shall have hardware or devices to prevent inadvertent closing.

Substantiation: The proposed standard lacks data to support standard and increases cost to design.

Committee Meeting Action: Reject

Committee Statement: Committee feels that this is a beneficial requirement.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-545 Log #1699 **Final Action: Reject**
(6.9.5)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Problem: Is there a test for the loading of a door “hold open” device? What amount of force should this device withstand?

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: No proposal was stated by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-546 Log #1070 **Final Action: Reject**
(6.9.7)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.9.7 An internal lock on each patient compartment primary entry door OPENING shall be provided

Substantiation: Rear double entry door only require on internal lock to secure both doors. Having a lock on each of the doors would add an unnecessary level of confusion. One lock is required on the trailing door in order to secure both doors.

Committee Meeting Action: Reject

Committee Statement: Current language is preferable to this.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-547 Log #1531 **Final Action: Accept**
(6.9.7)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.9.7* An internal lock on each patient compartment primary entry door shall be provided.

A.6.9.7 does not apply to both rear doors – only the primary door.

Substantiation: Recommend adding an annex item to clarify which rear door needs the lock.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-548 Log #1071 **Final Action: Reject**
(6.9.9)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text read as follows:

6.9.9 Doors PATIENT COMPARTMENT ENTRY DOORS—shall be equipped with not less than 250 in. 2 (161.3 m2) of safety glass area per door.

Substantiation: Windows are not needed on storage compartment doors, windows are required on entry doors.

Committee Meeting Action: Reject

Committee Statement: Current language only applies to the “Patient Compartment”.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-549 Log #1532 **Final Action: Reject**
(6.9.9)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.9.9 Doors PATIENT COMPARTMENT ENTRY DOORS—shall be equipped with not less than 250 in. 2 (161.3 m2) of safety glass area per door.

Substantiation: Need to remove any reference to “side” or “rear” and just use entry door.

Committee Meeting Action: Reject

Committee Statement: Current language only applies to the “Patient Compartment”.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-550 Log #1607 **Final Action: Accept**
(6.9.9)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: In 6.9.9 revise the metric equivalent of 250 in.2 to read (161,300 mm2 +61.3 m2).

Substantiation: The metric conversion is wrong.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-551 Log #1608 **Final Action: Accept in Principle**
(6.9.10)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.9.10 to read as follows:

6.9.10 Doors shall be designed sealed to prevent leakage of exhaust fumes, dust, water, and air into the patient compartment.

Substantiation: “sealed” sounds like a permanent condition. The change clarifies the requirement and is less design restrictive.

Committee Meeting Action: Accept in Principle

Revise text as follows:

Revise 6.9.10 to read as follows:

6.9.10 Doors shall be designed sealed to prevent leakage of exhaust fumes, dust, water, and air into the patient compartment.

Committee Statement: The committee did not want to limit preventing door leakage to just the patient compartment, but include areas such as outside storage compartments.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-552 Log #718 **Final Action: Accept in Principle**
(6.9.11)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Doors shall, in addition to meeting applicable FMVSS standards, withstand the loads on the latches and hinges listed in Table 6.9.11 when tested in accordance to 9.x AMD 002, Body Door Retention Components Test.

- 9.x Body Door Test (applies to Type 1 and Type 3 only).
9.x.1 Position the test structure or ambulance on a level, horizontal surface.
9.x.2 The patient compartment shall be structurally complete, but need not include interior panels or cabinet installation.
9.x.4 Employ force application fixtures in such a manner that the opposing forces shall be supported by the body structure.
9.x.5 When performing the longitudinal force to the door hinge or latch, it shall not be more than 3" away from the test specimen so as to not create a moment about the hinge or latch structure.
9.x.6 When testing the transverse direction on the latch, apply a point load force in the location that would generate the "worst case" scenario.
9.x.7 When testing the transverse direction on the hinge, apply a point load the force at one the corner of the door to generate the "worst case" scenario.
9.x.8 Apply forces for 10 seconds in all required directions and/or positions after the installation of associated body door retention components.
9.x.9 Apply forces for 10 seconds to a continuous hinge so that the load will be distributed equally from top to bottom.
9.x.10 Apply forces for 10 seconds to individual (strap type) hinges so that the load will be distributed proportionally on each hinge.
9.x.11 Apply forces so that it will be equally distributed as near the latch or hinge as practical.

Substantiation: The AMD test has a bit of "grey" area. The testing needs to be better spelled out. Either just referencing FMVSS 206 or something like the proposed above.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-553 Log #1609 **Final Action: Accept in Principle**
(6.9.11)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.9.11 to read as follows:

6.9.11 Doors shall, in addition to meeting applicable legally adopted FMVSS standards, withstand the loads on the latches and hinges listed in Table 6.9.11 when tested in accordance to AMD 002, Body Door Retention Components Test.

Revise Table 6.9.11 as follows:

Table 6.9.1.1				
	Side Door		Rear Door	
	Transverse Load	Longitudinal Load	Transverse Load	Longitudinal Load
Fully Latched Position	2500 lbf (11120 N)	2500 lbf (11120 N)	2500 lbf (11120 N)	2500 lbf (11120 N)
Secondary Latched Position	1500 lbf (6672 N)	1500 lbf (6672 N)	1500 lbf (6672 N)	1500 lbf (6672 N)
Hinge	2500 lbf (11120 N)	2500 lbf (11120 N)	2500 lbf (11120 N)	2500 lbf (11120 N)

Substantiation: The change to 6.9.11 is to make the standard international in application. The changes to Table 6.9.11 are to add units of measure as U.S. units and SI conversion units.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-554 Log #1205 **Final Action: Reject**
(6.9.11.1)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

Compliance of the door shall be validated by testing on a patient compartment sample of a substantially similar design.

Substantiation: The proposed standard lacks data to support standard and increases cost to design.

Committee Meeting Action: Reject

Committee Statement: This testing is already being performed.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-555 Log #461 **Final Action: Accept in Principle**
(6.11.2)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

6.11.2 Height of the bottom step The distance from the road surface to the top surface of the first step shall not exceed 22 in. (559 mm).

Substantiation: I think this wording is a better representation of what is intended.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-431 (Log #1610).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-556 Log #1487 **Final Action: Reject**
(6.11.2)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.
Recommendation: Revise text to read as follows:
6.11.2 Height of the bottom step shall not exceed 12 in. 22-in. (559 mm).
Substantiation: Standard residential construction suggests a step height between 7 and 8 inches. OSHA Standard 1910.27 requires not more than 12 inches between rungs of a ladder. Stepping into an ambulance should not exceed this published standard.
Committee Meeting Action: Reject
Committee Statement: 12 in. is too low for a max height. Users may specify lower if desired.
Number Eligible to Vote: 32
Ballot Results: Affirmative: 25 Negative: 2
Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.
Explanation of Negative:
 MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-557 Log #462 **Final Action: Accept in Part**
(6.11.3 and 7.11.8)

Submitter: Andrew J. Alger, Progressive Engineering Inc.
Recommendation: Revise text to read as follows:
~~6.11.3 Step wells shall be illuminated.~~
 7.11.8 Each step well shall be illuminated by its own designated light when door is open to a minimum of 1 fc on 90 percent of the step.
 7.11.8.1 For measuring purposes, a random sample of 10 locations shall be tested, if more than 2 locations are below the required 1 FC the step illumination is considered a failure.
Substantiation: It would be better to not reference a requirement 2 times in a document. Also if you are going to require a 90% illumination, there will need to be method for testing including the number of samples and where the measurements are taken.
Committee Meeting Action: Accept in Part
 Keep current the language of 6.11.3. Delete 7.11.8 entirely.
 Reject the proposed 7.11.8.1.
Committee Statement: The committee is deleting the 1 fc on 90 percent of the step requirement.
Number Eligible to Vote: 32
Ballot Results: Affirmative: 25 Negative: 2
Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.
Explanation of Negative:
 MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-558 Log #1072 **Final Action: Accept**
(6.11.5)

Submitter: Randy A. Hanson, American Emergency Vehicles
Recommendation: Delete text read as follows:
 6.11.5* All steps shall have a minimum area of 35 in. 2 (22, 580 mm²), shall be of such a shape that a 5 in. (125 mm) diameter disk does not overlap any side when placed on the step, and shall be arranged to provide at least 9 in. (200 mm) of clearance between the leading edge of the step and any obstruction.
Substantiation: Smaller chassis will not allow for 8" of clearance in all applications. Cab running boards are one example. If running boards were to have 8" of clearance it would cause a hazard from the protrusion.
Committee Meeting Action: Accept
Number Eligible to Vote: 32
Ballot Results: Affirmative: 25 Negative: 2
Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.
Explanation of Negative:
 MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-559 Log #1533 **Final Action: Accept in Principle**
(6.11.5)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association
Recommendation: Revise text to read as follows:
6.11.5* All steps shall have a minimum area of 35 in.² (22,580 mm²), shall be of such a shape that a 5 in. (125 mm) diameter disk does not overlap any side when placed on the step, and shall be arranged to provide at least 8 in. (200 mm) of clearance between the leading edge of the step and any obstruction.

All materials used for exterior surfaces designated as stepping, standing, and walking areas and all interior steps shall have a minimum slip resistance in any orientation of 0.68 when tested wet using the English XL tester in accordance with the manufacturer's instructions or 0.52 when tested wet using the Brungraber Mark II tester in accordance with the manufacturer's instructions. Height of the bottom step shall not exceed 22 in. (559 mm).
Substantiation: Not compatible with type II or III. 8" too large – running boards would stick way out from vehicle.
Committee Meeting Action: Accept in Principle
Committee Statement: See committee action on Proposal 1917-558 (Log #1072).
Number Eligible to Vote: 32
Ballot Results: Affirmative: 25 Negative: 2
Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.
Explanation of Negative:
 MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-560 Log #1073 **Final Action: Reject**
(6.12)

Submitter: Randy A. Hanson, American Emergency Vehicles
Recommendation: Revise text to read as follows:
 6.12 Exterior Stepping Surfaces, aAll materials used for exterior surfaces designated as stepping, standing, and walking areas and all interior steps shall have a minimum slip resistance in any orientation of 0.68 when tested wet using the English XL tester in accordance with the manufacturer's instructions or 0.52 when tested wet using the Brungraber Mark II tester in accordance with the manufacturer's instructions. Height of the bottom step shall not exceed 22 in. (559 mm).
Substantiation: Formatting was incorrect.
Committee Meeting Action: Reject
Committee Statement: Current language is consistent with 1901, *Standard for Automotive Fire Apparatus* and does not pose a significant hardship to the manufacturer.
Number Eligible to Vote: 32
Ballot Results: Affirmative: 25 Negative: 2
Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.
Explanation of Negative:
 MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-561 Log #1534 **Final Action: Reject**
(6.12)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association
Recommendation: Delete text to read as follows:
 6.12 Exterior Stepping Surfaces, aAll materials used for exterior surfaces designated as stepping, standing, and walking areas and all interior steps shall have a minimum slip resistance in any orientation of 0.68 when tested wet using the English XL tester in accordance with the manufacturer's instructions or 0.52 when tested wet using the Brungraber Mark II tester in accordance with the manufacturer's instructions. Height of the bottom step shall not exceed 22 in. (559 mm).
Substantiation: English XL tester cost \$4,200.00 Forces specific test eq. to be used - to keep this req., must allow pass through compliance by mfr.
Committee Meeting Action: Reject
Committee Statement: Materials can be specified from the supplier that meet slip resistance requirements.
Number Eligible to Vote: 32
Ballot Results: Affirmative: 25 Negative: 2
Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.
Explanation of Negative:
 MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-562 Log #1611 **Final Action: Accept**
(6.12)

Submitter: Carl E. Peterson, Hingham, MA
Recommendation: Revise 6.12 to read as follows and move the requirements to Chapter 4 or 5
6.12 Exterior Stepping Surfaces and Interior Steps.
6.12.1 All materials used for exterior surfaces designated as stepping, standing, and walking areas and all interior steps shall have a minimum slip resistance in any orientation of 0.68 when tested wet using the English XL tester in accordance with the manufacturer's instructions or 0.52 when tested wet using the Brungraber Mark II tester in accordance with the manufacturer's instructions.

6.12.2 A standard Neolite® test sensor shall be used with both the English XL tester and the Brungraber Mark II tester.

6.12.3 Sampling Strategy.

6.12.3 For uniformly patterned materials, at least 16 readings shall be taken on each sample.

6.12.3.1 Each reading shall be taken 90 degrees clockwise from the previous orientation, resulting in at least four readings in each orientation.

6.12.3.2 The readings shall be averaged and reported as the slip resistance for the material.

6.12.4 For directionally patterned materials, at least 32 readings shall be taken on each sample.

6.12.4.1 Each reading shall be taken 45 degrees clockwise from the previous orientation, resulting in at least four readings in each orientation.

6.12.4.2 The four readings in each direction shall be averaged and reported as the slip resistance for the material in that orientation.

6.12.5 The contractor shall deliver with the ambulance a certification that all materials used for exterior surfaces designated as stepping, standing, and walking areas meet the requirements of 6.12.

Substantiation: Where this is calling for a material to meet a slip resistance, the test procedures need to be defined in the standard. The manufacturer's instructions for the English XL tester and the Brungraber Mark II tester do not include how to orient the tester to the material or how many samples need to be taken. The added material is from 15.7.4 of NFPA 1901. The change to the title of the section is for consistency with the stated requirement in 6.12.1.

Stepping surfaces are in more places than just the patient compartment so this requirement should be in a chapter that includes the whole ambulance.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-563 Log #365 **Final Action: Accept**
(6.13.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

Exterior storage shall be furnished for all equipment specified by the purchaser.

Substantiation: The proposed standard is irrelevant; exterior storage is preference of purchaser. Proposed standard presumes all equipment bought by purchasers would be stored in an exterior cabinet.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-564 Log #1206 **Final Action: Accept in Principle**
(6.13.1)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

Exterior storage shall be furnished for all equipment specified by the purchaser.

Substantiation: The proposed standard is irrelevant. Exterior storage is preference of purchaser. Proposed standard presumes all equipment bought by purchasers would be stored in an exterior cabinet.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-563 (Log #365).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-565 Log #1612 **Final Action: Accept in Principle**
(6.13.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 6.13.1.

Substantiation: This is a procurement specification issue and does not belong in a standard for ambulances.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-563 (Log #365).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-566 Log #460 **Final Action: Accept in Principle**
(6.13.7)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

6.13.7 All exterior locks If key locks are provided they shall be keyed alike.

Substantiation: The old wording reads as a shackle type (master lock) is being used instead of integrated locks.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-567 (Log #CP13).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-567 Log #CP13 **Final Action: Accept**
(6.13.7)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise the following to read as:

6.13 Exterior Storage.

6.13.1 Exterior storage shall be furnished for all equipment specified by the purchaser.

6.13.2 6.13.1 Exterior storage compartments shall be weather resistant.

6.13.3 6.13.2 Doors shall provide secure closure properties.

6.13.4 6.13.3 All hinged doors wider than 14 in. (356 mm) and excluding battery compartments shall have positive hold open devices that permit one hand closure.

6.13.5 6.13.4 Hardware (hinges, locks, latches, etc.) shall be rust resistant.

6.13.6 6.13.5 All primary exterior compartment doors shall have latches with locks.

6.13.7 If key locks are provided they shall be keyed alike.

6.13.8 6.13.6 All exterior compartments greater than 4 ft³ (0.11 m³) shall be automatically illuminated when opened. and shall meet the requirements of section 7.11.7.1.

6.13.9 6.13.7 Any absorbent material such as carpeting, fabric, or inside/outside plastic type carpeting, etc. that resists cleaning and decontamination shall not be used.

Substantiation: Key locks not required to be keyed alike. Add performance specification to compartment lighting.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-568 Log #1841 **Final Action: Reject**
(6.13.7 and 6.13.8)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

6.13.7 3. If key locks are provided they shall be keyed alike and shall be keyed identically to the patient compartment door locks.

6.17.8 3. Shelves shall be removable and shall be adjustable

Substantiation: Less confusion.

Usage may change as equipment needs and designs change.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-567 (Log #CP13) and Proposal 1917-597 (Log #CP14).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-569 Log #468 **Final Action: Accept in Principle**
(6.13.8 and 7.11.7.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.13.8 All exterior compartments greater than 4 ft³ (0.11 m³) shall be automatically illuminated when opened and shall meet the requirements of section 7.11.7.1.

7.11.7.1 Each enclosed tool and equipment compartment greater than 4 ft³ (0.1 m³) in volume and having an opening greater than 144 in.2 (92,900 mm2) shall have sufficient compartment lighting to provide a minimum of 1 fc at any location on the floor of the compartment without any shelves, dividers, or equipment in the compartment.

Substantiation: Compartment lighting referenced in two locations.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-567 (Log #CP13).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-570 Log #40 **Final Action: Reject**
(6.14)

Submitter: William Ott, Link Manufacturing, Ltd.

Recommendation: Revise text to read as follows:

6.14 Floor.

6.14.1 The patient compartment floor shall be flat, except when the area near the rear entrance door is sloped for a lower entering height.

6.14.2 The floor height at loading shall be a maximum of 34 inches.

6.14.2 6.14.3 With the exception of cot related hardware, the floor shall be unencumbered in the door(s) access and work area.

6.14.4 Sub Floor

6.14.3 6.14.4.1 The sub floor of the modular body patient compartment shall be designed to prevent water penetration.

6.14.4 6.14.4.2 The sub floor of the modular body shall include a heat shield.

6.14.5 The floor shall be designed to eliminate voids or pockets, where water or moisture can become trapped.

6.14.6 6.14.4.4 The sub floor construction shall cover the full length and width of the patient compartment.

6.14.7 6.14.4.5 The sub floor of the patient compartment shall be not less than 0.5 in. (13 mm) thick.

6.14.8 6.14.4.6 The sub floor material shall be non-hygroscopic.

6.14.9 6.14.4.7 If plywood is used in the sub floor it shall be marine or exterior grade.

6.14.5 The floor shall be designed to eliminate voids or pockets, where water or moisture can become trapped.

6.14.6 Body Floor Structural Integrity.

Renumber remainder of Standard as required.

Substantiation: 1. Previous versions of KKK-A-1822 have included maximum floor height requirements

2. GSA's KKK-A-1822 floor height requirement has given suppliers to the ambulance industry standard design guidelines to aid in the design of universal patient handling equipment

3. Loading and unloading patients is a dangerous operation (3)

4. Patient size and weights are increasing (1), (2)

5. Giving designers and manufacturers design standards will enable the industry to maintain some universality of their equipment. Removing the floor height requirement may lead to large variations in floor height from vehicle or body manufacturer. This will make it more difficult, and as a result, more expensive for equipment manufacturers to anticipate and accommodate the full range of ambulance floor heights that may appear in the industry.

Committee Meeting Action: Reject

Committee Statement: Too design restrictive. 4 x 4 ambulances cannot easily achieve this. Committee should consider an Annex item recommending a max. loading floor height of 34 in. in consideration of lifting injury potential.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-571 Log #477 **Final Action: Reject**
(6.14)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.14 Floor.

6.14.1 The patient compartment floor shall be flat, except when the area near the rear entrance door is sloped for a lower entering height.

6.14.1.1 If the floor is sloped, it may only slope for the first 14" from the inside face of the rear door.

Substantiation: If you allow the floor to slope you need to stipulate how far inward from the rear door it is allowed.

Committee Meeting Action: Reject

Committee Statement: No scientific justification for limiting the sloped area.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-572 Log #1613 **Final Action: Accept in Part**
(6.14)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Reorganize and revise 6.14 as shown:

6.14 Floor.

6.14.1 The patient compartment floor shall be flat, except when the area near the rear entrance door is sloped for a lower entering height.

6.14.2 With the exception of cot retention related hardware, the floor shall be unencumbered in the door(s) access and work area.

~~**6.14.4** The sub floor of the modular body shall include a heat shield.~~

~~**6.14.3 6.14.5** The floor shall be designed to eliminate voids or pockets, where water or moisture can become trapped.~~

~~**6.14.4 6.14.6** The sub floor construction shall cover the full length and width of the patient compartment.~~

~~**6.14.7** The sub floor of the patient compartment shall be not less than 0.5 in. (13 mm) thick.~~

~~**6.14.5 6.14.8** The sub floor material shall be non-hygroscopic.~~

~~**6.14.6 6.14.9** If plywood is used in the sub floor it shall be marine or exterior grade.~~

~~**6.14.7 6.14.3** If the ambulance has a~~ The sub floor of the modular body patient compartment the sub floor shall be designed to prevent water penetration and shall include a heat shield.

~~**6.14.8 6.14.10** Body Floor Structural Integrity.~~

~~**6.14.8.1 6.14.10.3** If the sub floor is constructed of plywood, the plywood it shall have an American Plywood Association (APA) floor rating of 16 in. (406 mm) on center or better, or~~

~~**6.14.8.2** If the sub floor is constructed of other than plywood, it shall be tested using a 3 in. (76 mm) disk and have, having a maximum of 0.125 in. (3 mm) deflection at 200 pounds (91 kg) force, and an ultimate load of 400 lbs (181 kg).~~

~~**6.14.8.2.1 6.14.10.2** In the case where the floor structure spacing is greater than 16 in. (406 mm) on center or a non-rated material is used, the maximum floor structure spacing shall be used for testing.~~

~~**6.14.8.2.2 6.14.10.3** Compliance of the floor structural integrity shall be validated by testing the mid-point of the longest unsupported section of a substantially similar ambulance or floor structure in accordance with the concentrated static load test procedure in ASTM E661.~~

Substantiation: The change to 6.14.2 is for clarification of the exception. Paragraph 6.14.3 is being relocated for better organization of the section and expanded to include the requirement in 6.14.4.

Paragraph 6.14.7 is being deleted as it is design restrictive. Revised 6.4.8 should cover the floor structural integrity.

6.14.10, renumbered as 6.14.8 is being revised to separate the requirements for plywood from other materials.

Committee Meeting Action: Accept in Part

Reorganize and revise 6.14 as shown:

6.14 Floor.

6.14.1 The patient compartment floor shall be flat, except when the area near the rear entrance door is sloped for a lower entering height.

6.14.2 With the exception of cot retention hardware, the floor shall be unencumbered in the door(s) access and work area.

6.14.3 The floor shall be designed to eliminate voids or pockets, where water or moisture can become trapped.

6.14.4 The sub floor construction shall cover the full length and width of the patient compartment.

6.14.5 If plywood is used in the sub floor it shall be marine or exterior grade.
6.14.6 If the ambulance has a modular body the sub floor shall be designed to prevent water penetration and shall include a heat shield.

6.14.7 Body Floor Structural Integrity.

6.14.7.1 If the sub floor is constructed of plywood, the plywood it shall have an American Plywood Association (APA) floor rating of 16 in. (406 mm) on center or better.

6.14.7.2 If the sub floor is constructed of other than plywood, it shall be tested using a 3 in. (76 mm) disk and have a maximum of 0.125 in. (3 mm) deflection at 200 pounds (91 kg) force, and having a minimum ultimate load of 400 lbs (181 kg) for a 16 in. (406 mm) on center load..

6.14.7.2.1 The maximum floor structure spacing shall be used for testing.

6.14.7.2.2 Compliance of the floor structural integrity shall be validated by testing the mid-point of the longest unsupported section of a substantially similar ambulance or floor structure in accordance with the concentrated static load test procedure in ASTM E661.

Committee Statement: Accept all but non-hygroscopic requirement. See committee action on Proposal 1917-579 (Log #1075).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-573 Log #366 **Final Action: Reject**
(6.14.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Revise text to read as follows:

The patient compartment floor shall be flat, ~~except when the area near the rear entrance door is sloped for a lower entering height.~~

Substantiation: Safety issue.

Committee Meeting Action: Reject

Committee Statement: Sloped floor should be an option.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 PRENTISS, S.: a sloped floor is a safety hazard
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-574 Log #1207 **Final Action: Reject**
(6.14.1)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Revise text to read as follows:

The patient compartment floor shall be flat, ~~except when the area near the rear entrance door is sloped for a lower entering height.~~

Substantiation: Safety Issue.

Committee Meeting Action: Reject

Committee Statement: Sloped floor should be an option.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 PRENTISS, S.: a sloped floor is a safety hazard
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-575 Log #1074 **Final Action: Reject**
(6.14.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.14.2 With the exception of cot related hardware, the SURFACE OF THE floor shall be unencumbered in the door(s) access and work AREA.

Substantiation: Clarification necessary because the nader pins for holding the patient compartment door closed are located in the door jambs. These pins are to be located below the surface level of the flooring so that they are not a trip hazard.

Committee Meeting Action: Reject

Committee Statement: Proposed wording does not improve the current draft language.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-576 Log #1535 **Final Action: Reject**
(6.14.2)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.14.2 With the exception of cot ~~related or other safety-related~~ hardware, the floor shall be unencumbered in the door(s) access and work areas.

Substantiation: Should expand to include the cot fixtures and any other necessary items.

Committee Meeting Action: Reject

Committee Statement: Proposed wording does not improve the current draft language.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-577 Log #1286 **Final Action: Reject**
(6.14.4)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.14.4 The sub floor of the modular body shall include a heat shield if it is within 12 in. of an exhaust system component.

Substantiation: Medium duty trucks often have large exhaust system clearances that obviate the need for heat shields.

Committee Meeting Action: Reject

Committee Statement: Proposed wording does not improve the current draft language.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-578 Log #1775 **Final Action: Reject**
(6.14.7)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Revise text to read as follows:

6.14.7 When plywood is used, the sub floor of the patient compartment shall be not less than 0.5 in. (13 mm) thick.

Substantiation: The current, draft verbiage calls for subfloor material of 0.5 in (13 mm) thick. This appears to assume all manufacturers use plywood and may impose restrictions on using materials such as aluminum or other structurally sound composites. The restriction would come from the weight associated with 0.5 in (13 mm) aluminum, steel, or other composites and does not promote the use of materials of less weight. By isolating the requirement to plywood, manufacturers are allowed the freedom to use other materials which may be lighter, more efficient in terms of acoustics, etc...

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-572 (Log #1613).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-579 Log #1075 **Final Action: Accept**
(6.14.8)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text to read as follows:

6.14.8 The sub floor material shall be non-hygroscopic.

Substantiation: 6.14.3 Referencing marine grade plywood is appropriate, for all of the interior requirements.

Plywood is made from wood that comes from trees that by their very nature have to be hygroscopic. Denser species are likely to be less absorbent but wood is still wood. One such dense specie is Gurjan, which is a Southeast Asia tropical and is used in plywood. One such producer goes under the name Truwood. They and others make plywood from Gurjan and by using water proof resins and treatment chemicals can achieve a very durable marine quality plywood. This does not change the natural hygroscopic nature of the wood. Reducing the hygroscopic nature of the wood water absorption test for Gurjan on various sites show 3-5%. Once laminated the wood has a water barrier from the vehicle inside.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-580 Log #1224 **Final Action: Reject**
(6.14.9)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

6.14.9 If the plywood is used in the sub floor is exposed to the environment it shall be marine or exterior grade.

Substantiation: This needs to be clarified, it is assumed that the intention was for, if plywood is the only floor. Any manufacturer that uses plywood on top of ferrous or non-ferrous base floor, would be exempt since the plywood isn't exposed to the elements.

Committee Meeting Action: Reject

Committee Statement: Proposed wording does not improve the current draft language.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-581 Log #1 **Final Action: Reject**
(6.14.10)

Submitter: Sean Humphreys, Rehoboth Beach Volunteer Fire Company

Recommendation: Add text to read as follows:

6.14.10 is in reference to flooring. The floor should NOT have plywood.

Substantiation: Cleaning of the patient compartment floors often results in the hosing off. In my experience with the ambulances with wooden plywood floors, water will get in somehow and fungus will and does grow. Very unsanitary.

Committee Meeting Action: Reject

Committee Statement: No data was provided to suggest that plywood floors are subject to the suggested problems.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-582 Log #1536 **Final Action: Reject**
(6.14.10)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.14.10.1 Sub floor shall have an American Plywood Association (APA) floor rating of 16 in. (406 mm) on center or shall be tested using a 3 in. (76 mm) disk, having a maximum of 0.125 in. (3 mm) deflection at 200 pounds (91 kg) force, and an ultimate load of 400 lbs (181 kg).

6.14.10.2 In the case where the floor structure spacing is greater than 16 in.

(406 mm) on center or a non-rated material is used; the maximum floor structure spacing shall be used for testing.

6.14.10.3 Compliance of the floor structural integrity shall be validated by testing USING AMD STD 020 FLOOR DISTRIBUTED LOAD TEST the mid-point of the longest unsupported section of a substantially similar ambulance or floor structure in accordance with the concentrated static load test procedure in ASTM E661.

Substantiation: AMD 020 test was established to test the entire vehicle floor – as is, this would only seem to test the plywood.

Committee Meeting Action: Reject

Committee Statement: Proposed wording does not improve the current draft language.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-583 Log #469 **Final Action: Accept in Principle**
(6.14.10.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.14.10.1 Sub floor shall have an American Plywood Association (APA) floor rating of 16 in. (406 mm) on center or shall be tested using a 3 in. (76 mm) disk, having a maximum of 0.125 in. (3 mm) deflection at 200 pounds (91 kg) force, and having a minimum an ultimate load of 400 lbs (181 kg) for a 16" on center load.

Substantiation: Rewording the ultimate load to make sense.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-572 (Log #1613).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-584 Log #1076 **Final Action: Reject**
(6.14.10.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete the following text:

6.14.10.1 Sub floor shall have an American Plywood Association (APA) floor rating of 16 in. (406 mm) on center or shall be tested using a 3 in. (76 mm) disk, having a maximum of 0.125 in. (3 mm) deflection at 200 pounds (91 kg) force, and an ultimate load of 400 lbs (181 kg).

Substantiation: AMD Standard 020 floor distributed load test. This testing method will provide the end user with a more rigid and stable floor. Section 6.14.10.3 addresses this issue and makes the need for this specification unnecessary.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Testing to the APA is superior to AMD 20.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-585 Log #1776 **Final Action: Accept in Principle**
(6.14.10.1)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Revise text to read as follows:

6.14.10.1 When plywood is used, Sub floor shall have an American Plywood Association (APA) floor rating of 16 in. (406 mm) on center or shall be tested using a 3 in. (76 mm) disk, having a maximum of 0.125 in. (3 mm) deflection at 200 pounds (91 kg) force, and an ultimate load of 400 lbs (181 kg).

Substantiation: The current, draft verbiage states requirements for subfloor without regard for material used. If a manufacturer were to use materials other than plywood, they would have to meet the proposed, draft requirements which may not be appropriate for materials such as aluminum. By accepting the proposed verbiage, the requirement is isolated to plywood floor subflooring only and allowing for other materials that may have other requirements.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-572 (Log #1613).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-586 Log #1077 **Final Action: Reject**
(6.14.10.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete the following text:

~~6.14.10.2 In the case where the floor structure spacing is greater than 16 in. (406 mm) on center or a non-rated material is used, the maximum floor structure spacing shall be used for testing.~~

Substantiation: AMD standard 020 floor distributed load test, this testing method will provide the end user with a more rigid and stable floor. Section 6.14.10.3 addresses this issue and makes the need for this specification unnecessary.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-3 (Log #12). Testing to APA is superior to AMD 20.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-587 Log #478 **Final Action: Accept in Principle**
(6.14.10.3)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.14.10.3 Compliance of the floor structural integrity shall be validated by testing the mid-point of the longest unsupported section of a substantially similar ambulance or floor structure in accordance with the concentrated static load test procedure in ASTM E661.

6.14.10.3.1 If panel joints occur at the maximum span location, then they should be present in the test sample, as worst-case scenario.

6.14.10.4 A drawing of the floor structure and fastening schedule of the subfloor material to the structure is required in the certification report.

Substantiation: Added a worst case scenario and documentation to the certification report.

Committee Meeting Action: Accept in Principle

Revise as follows:

6.14.7.2.2.1 If panel joints occur at the maximum span location, then they should be present in the test sample, as worst-case scenario.

6.14.7.3 A drawing of the floor structure and fastening schedule of the subfloor material to the structure is required in the certification report.

Committee Statement: The committee renumbered to the appropriate section.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-588 Log #1078 **Final Action: Reject**
(6.14.10.3)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.14.10.3 Compliance of the floor structural integrity shall be validated by testing using AMD SID 020 Floor Distributed Load Test ~~the mid-point of the longest unsupported section of a substantially similar ambulance or floor structure in accordance with the concentrated static load test procedure in ASTM E661.~~

Substantiation: AMD Standard 020 Floor Distributed Load Test, this testing method will provide the end user with a more rigid and stable floor. The purpose of this test is to validate the floor structure as a completed assembly not the plywood or other sub floor materials.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-3 (Log #12). Testing to APA is superior to AMD 20.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-589 Log #1287 **Final Action: Reject**
(6.14.10.3)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.14.10.3 Compliance of the floor structural integrity shall be validated by testing ~~the mid-point of the longest unsupported section of a substantially similar ambulance or floor structure in accordance with the concentrated static load test procedure in ASTM E661.~~ in accordance with AMD 020, Floor Distributed Load Test.

Substantiation: ASTM E661 is applicable to wood and wood-based panels and boards. That standard does not appear to be appropriate for testing metal floors. AMD Standard 020, Floor Distributed Load Test, appears to be a more appropriate test for all types of floor construction.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-3 (Log #12). Testing to ASTM E661 is superior to AMD 20.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-590 Log #1019 **Final Action: Reject**
(6.15.2)

Submitter: David Schimmel, Wayne Memorial First Aid Squad

Recommendation: Revise text to read as follows:

6.15.2 The floor covering shall cover the entire length and width of the compartment's working area. The covering of joints (corners, etc.), where the sidewalls and covering meet, shall be sealed and bordered with corrosion resistant cove molding or the covering shall extend at least 3 in. (76 mm) up the sidewalls. All floor coverings shall be of non-skid material having a coefficient of friction of not less than .69 when wet and .82 when dry. The material shall also be surface shall also be easy to clean as to prevent bacteria from forming.

Substantiation: Flooring must be antiskid material and shall be easy to clean to prevent cross contamination.

Committee Meeting Action: Reject

Committee Statement: Proposed requirements re: cleaning are not sufficiently specific. Non-skid surfaces can be a cleaning problem.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-591 Log #1614 **Final Action: Accept**
(6.15.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.15.2 to read as follows:

6.15.2 The floor covering shall cover the entire length and width of the compartment's ~~exposed floor working area.~~

6.15.3 ~~The covering of Joints (corners, etc.); where the floor covering meets the sidewalls and covering meet;~~ shall be sealed and bordered with corrosion resistant cove molding or the floor covering shall extend at least 3 in. (76 mm) up the sidewalls.

Substantiation: The two sentences should be numbered separately. Working area is an ambiguous term and subject to interpretation. The changed to 6.15.3 are editorial for clarification.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-592 Log #47 **Final Action: Accept in Principle**
(6.16.1)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Revise text to read as follows:

6.16.1 Where the patient compartment is insulated it shall be insulated with a non-settling type, vermin-proof, mildew-proof, fire retardant, non-toxic, and non-hygroscopic material.

Substantiation: Missing word.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

6.16.1 Where the patient compartment is insulated it shall be insulated with a non-settling type, vermin-proof, mildew-proof, ~~fire retardant~~, non-toxic, and non-hygroscopic material that meets the requirements of FMVSS 302.

Committee Statement: The committee had several public proposals and this revision incorporates all edits.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-593 Log #1235 **Final Action: Reject**
(6.16.1)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

6.16.1 "...insulated with a ~~non-settling type~~ Rigid, vermin proof..."

Substantiation: All insulation in the walls needs to be Rigid, the reason for this is that even fiberglass can, if packed tight, be "non-settling" the problem is that the condensation line between cold and warm will always fall inside the wall, due to the thin cross section of ambulance walls, condensation in fiberglass creates a breeding ground for mold and bacteria.

Committee Meeting Action: Reject

Committee Statement: Proposal is an unreasonable design limitation. No documentation of problems with fiberglass insulation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-594 Log #1288 **Final Action: Accept in Principle**
(6.16.1)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.16.1 Where the patient compartment is insulated it shall be insulated with a non-settling type, vermin-proof, mildew-proof, ~~fire retardant~~, non-toxic, and non-hygroscopic insulation that meets the requirements of FMVSS 302.

Substantiation: The term "Fire retardant" is not defined in this standard. It may be better to specify FMVSS 302 compliance.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-592 (Log #47).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-595 Log #1615 **Final Action: Accept in Principle**
(6.16.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.16.1 to read as follows:

6.16.1 Where the patient compartment is insulated, the material used it shall be insulated with a non-settling type, and shall be vermin-proof, mildew-proof, fire retardant, non-toxic, and non-hygroscopic.

Substantiation: The currently stated requirement is not a complete sentence.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-592 (Log #47).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-596 Log #1236 **Final Action: Reject**
(6.16.2)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Delete the following text:

6.16.2 if fiberglass insulation is used, it shall be protected from exposure to water:

Substantiation: All insulation in the walls need's to be Rigid, the reason for this is that even fiberglass can, if packed tight, be "non-settling" the problem is that the condensation line between cold and warm will always fall inside the wall, due to the thin cross section of ambulance walls, condensation in fiberglass creates a breeding ground for mold and bacteria.

Committee Meeting Action: Reject

Committee Statement: Proposal is an unreasonable design limitation. No documentation of problems w/ fiberglass insulation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-597 Log #CP14 **Final Action: Accept**
(6.17)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

6.17.1 The interior of the patient compartment shall provide a ~~minimum~~ volume of 30 ft³ (0.85 m³) of enclosed storage cabinetry, compartment space, and shelf space.

6.17.5 Storage compartment doors shall be provided with low profile handles.

Storage compartment door handles, where provided, shall not protrude more than 1 inch (25mm) if located 14 inches above the floor or higher and ot protrude more than 2 inches if located lower than 14 inches above the floor.

6.17.6 Storage compartments shall be divided into sections.

6.17.7 Drawer slides shall be self-locking.

~~6.17.8 Shelves shall be removable.~~

~~6.17.9~~ 6.17.8 Doors shall remain closed during transport.

~~6.17.10~~ 6.17.9 Storage compartments shall be firmly fastened to the body structure.

Substantiation: The committee felt that removable shelves were not a minimum standard. Also provided measurable conditions for protrude and specified that the storage temperature is an ambient temperature.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-598 Log #32 **Final Action: Reject**
(6.17 (New))

Submitter: Philip Bonaiuto, Mass Dept. of Public Health

Recommendation: Add new text to read as follows:

All hazardous and contaminated equipment, clothing, etc., shall be separated from the patient compartment.

Substantiation: The Ambulance Regulation Program Staff felt that patient and EMT protection from this hazard was not addressed.

Committee Meeting Action: Reject

Committee Statement: Not an equipment design issue.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-599 Log #367 **Final Action: Accept in Principle**
(6.17.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Revise text to read as follows:

The interior of the patient compartment shall provide a minimum volume of 30 ft³ (0.85 m³) of enclosed storage cabinetry, compartment space, and shelf space for application.

Substantiation: Interior storage within the patient compartment is preference of purchaser.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-597 (Log #CP14).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-600 Log #1398 **Final Action: Reject**
(6.17.1)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.17.1 The interior of the patient compartment shall provide a minimum sufficient volume of 30 ft³ (0.85 m³) of enclosed soft or hard-wall storage cabinetry, compartment space, and shelf space to safely store the intended devices and equipment as recommended by the ambulance purchaser.

Substantiation: Allows for the use of alternate storage solutions in the vehicle.

Committee Meeting Action: Reject

Committee Statement: "Sufficient" is not a measurable standard. This issue is also addressed in 1917-602 (Log #1616).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-601 Log #1488 **Final Action: Reject**
(6.17.1)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Revise text to read as follows:

6.17.1 The interior of the patient compartment shall provide a minimum volume of 30 ft³ (0.85 m³) of enclosed storage cabinetry, compartment space, and shelf space large enough to accommodate the equipment listed by ACEP as minimum suggested equipment, for an ambulance.

Substantiation: The equipment suggested by ACEP will fit into a space less than 30 ft³. Interior storage space should be identified by the purchaser rather than set in the standard.

Committee Meeting Action: Reject

Committee Statement: See committee action in 1917-597 (Log #CP14).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-602 Log #1616 **Final Action: Accept in Principle**
(6.17.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: In 6.17.1, either define how shelf space is measured for volume or delete from the requirement.

Substantiation: 6.17.1 reads: "The interior of the patient compartment shall provide a minimum volume of 30 ft³ (0.85 m³) of enclosed storage cabinetry, compartment space, and shelf space." Shelf space is not a volume unless some types of bounds are included.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action in 1917-597 (Log #CP14).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-603 Log #1700 **Final Action: Reject**
(6.17.3)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Problem: Is there a test for the loading of a squad bench lid "hold open" device or slam latch? What amount of force should these devices withstand? In a roll over crash the squad bench lid latch is subject to extreme weight loading from the contents of the squad bench compartment. Failure of this latch introduces squad bench compartment contents into the patient compartment as missiles.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: No proposal or substantiation submitted.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-604 Log #284 **Final Action: Reject**
(6.17.3.1)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Add new text to read as follows:

6.17.3.1 When furnished the squad bench shall have a net type occupant restraint device to assist in restraining seat belted occupants in the event of a rapid de-acceleration.

Substantiation: This net restraint device has been used on all GSA purchased units and extensively on commercial ambulances for the past several years.

Committee Meeting Action: Reject

Committee Statement: While a net is permitted as an option, it should not be a requirement. Unproven safety technology.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-605 Log #283 **Final Action: Reject**
(6.17.3.2)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Add new text to read as follows:

6.17.3.2 The squad bench restraint net shall be compliant with SAE J1948.

Substantiation: This net restraint device has been used on all GSA purchased units and extensively on commercial ambulances for the past several years.

Committee Meeting Action: Reject

Committee Statement: While a net is permitted as an option, it should not be a requirement. Unproven safety technology.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-606 Log #282 **Final Action: Reject**
(6.17.3.3)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Add new text to read as follows:

6.17.3.3 The minimum dimensions of the device shall cover the area from within 3 in. of the top of the seat base to within 4 in. of the ceiling, and from the vertical surface at the aisle edge of the squad bench to within 2 in. of the curbside wall.

Substantiation: This net restraint device has been used on all GSA purchased units and extensively on commercial ambulances for the past several years.

Committee Meeting Action: Reject

Committee Statement: While a net is permitted as an option, it should not be a requirement. Unproven safety technology.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-607 Log #281 **Final Action: Reject**
 (6.17.3.4)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.**Recommendation:** Add new text to read as follows:

6.17.3.4 The net device shall have a minimum of (7) quick release recessed points of attachment to the body structural members as follows: (2) points at the ceiling, (2) points on the top of squad bench base, and (3) points at the curbside wall.

Substantiation: This net restraint device has been used on all GSA purchased units and extensively on commercial ambulances for the past several years.

Committee Meeting Action: Reject

Committee Statement: While a net is permitted as an option, it should not be a requirement. Unproven safety technology.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-608 Log #280 **Final Action: Reject**
 (6.17.3.5)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.**Recommendation:** Add new text to read as follows:

6.17.3.5 The mounting hardware shall be tested by applying a force of 6,000 lb horizontally -0 to +15 degrees in a forward direction at a maximum rate of 300 lb per second and holding the force for 6,000 lb for 10 seconds. The mounting hardware cannot fail. Deformation of structural components does not constitute failure.

Substantiation: This net restraint device has been used on all GSA purchased units and extensively on commercial ambulances for the past several years.

Committee Meeting Action: Reject

Committee Statement: While a net is permitted as an option, it should not be a requirement. Unproven safety technology.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-609 Log #475 **Final Action: Reject**
 (6.17.4)

Submitter: Andrew J. Alger, Progressive Engineering Inc.**Recommendation:** Revise text to read as follows:

6.17.4 All interior systems, components and permanently attached equipment shall function satisfactorily over a temperature range of -20°F to 110°F 32°F (0°C) to 95°F (35°C).

Substantiation: This change is to keep consistent with 4.12.3

Committee Meeting Action: Reject

Committee Statement: Interior components would not typically see the wider temp. ranges in-service.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-610 Log #1617 **Final Action: Accept in Principle**
 (6.17.4, 6.17.4.1 and 6.17.4.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Move the requirements of 6.17.4, 6.17.4.1, and 6.17.4.2 to a separate section or to 4.12.3.

Substantiation: These are not related to the section subject of interior storage. 4.12.3 deals with temperature the ambulance needs to operate within.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-3 (Log #12).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-611 Log #48 **Final Action: Reject**
 (6.17.4.2)

Submitter: Fred Morrison, Eagle County Ambulance District**Recommendation:** Revise text to read as follows:

6.17.4.2 The ambulance and all systems, components and equipment shall be capable of being stored at 320°F (-17°C) to 95 IIO°F (43°C) without damage or deterioration.

Substantiation: Standard much too low considering the varied climate in the United States.

Committee Meeting Action: Reject**Committee Statement:** See committee action on Proposal 1917-3 (Log #12).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-612 Log #228 **Final Action: Reject**
 (6.17.5)

Submitter: Nelson C. Smith, Brunswick, MD**Recommendation:** Revise text to read as follows:

6.17.5 Storage compartment doors ~~shall~~ should be provided with low profile handles.

Substantiation: Leave the organizations some flexibility to design a unit that is functional for their operation. Not all doors on the interior of the unit need to be low profile. Handles that access a release for the squad bench seat, to raise it up and/or front access to under the squad bench. These may need to be a little larger and a little more powerful to allow ease of use. Handles for these are usually out of the way so a patient or attendant would not be injured by them if something happened that the ambulance was in a accident.

Committee Meeting Action: Reject**Committee Statement:** "Should" is not acceptable standards language.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-613 Log #1079 **Final Action: Accept in Principle**
 (6.17.5)

Submitter: Randy A. Hanson, American Emergency Vehicles**Recommendation:** Revise text to read as follows:

6.17.5 Storage compartment doors shall be provided with ~~low profile~~ handles.

Substantiation: The term low profile needs to be defined.

A maximum protrusion distance must be established.

Some crews want raised handles that allow heavily gloved fingers to engage.

Some crews want no handles at all on compartment doors using only the key lock as access.

Committee Meeting Action: Accept in Principle

Revise to read as follows:

~~6.17.5~~ 6.17.4 Storage compartment door handles, where provided, shall not protrude more than 1 inch (25mm) if located 14 inches (356mm) above the floor or higher, and not protrude more than 2 inches (51mm) if located lower than 14 inches (356mm) above the floor. ~~shall be provided with low profile handles.~~

Committee Statement: The committee added measurable performance for "protrude".

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-614 Log #1701 **Final Action: Reject**
(6.17.5)

Submitter: Richard L. Dean, Mecklenburg EMS Agency
Recommendation: Problem: Interior compartment doors should have NO profile. Any protruding object subjects occupants to unnecessary injury. Interior handles should be recessed in design.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-613 (Log #1079).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-615 Log #229 **Final Action: Accept**
(6.17.6)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Delete the following text:

~~6.17.6 Storage compartment shall be divided into sections:~~

Substantiation: This section is not needed. Leave the organizations the flexibility to design a unit that is functional for their operation. The organizations knows what equipment they have and where they want to store it. Let them decide what gets divided into sections and what does not.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-616 Log #719 **Final Action: Reject**
(6.17.6)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

6.17.6 Storage compartments over 5 cu. ft. of space, shall be divided into sections.

Substantiation: It would not make sense to have a divider in a storage space under “x” amount of cu. ft.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-615 (Log #229).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-617 Log #1080 **Final Action: Accept**
(6.17.6)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete the following text:

~~6.17.6 Storage compartments shall be divided into sections:~~

Substantiation: What is the Maximum size a compartment can be before its divided into sections?

What is the minimum size of the sections?

How many sections?

This should be determined by the end user.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-618 Log #1238 **Final Action: Accept**
(6.17.6)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Delete text as follows:

~~6.17.6 Storage compartments shall be divided into sections:~~

Substantiation: This is beyond the scope of NFPA, how compartments are divided, is the customers decision, based on the materials, equipment and supplies they use. It can also negatively impact ergonomics.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-619 Log #1289 **Final Action: Accept**
(6.17.6)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

~~6.17.6 Storage compartments shall be divided into sections:~~

Substantiation: The specification should not preclude the customer's election to use an undivided compartment.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-620 Log #1537 **Final Action: Accept**
(6.17.6)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Delete text to read as follows:

~~6.17.6 Storage compartments shall be divided into sections~~

Substantiation: Shouldn't use Standard to tell customers how to configure their storage areas. Some may not need/want dividers.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-621 Log #1618 **Final Action: Accept**
(6.17.6)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 6.17.6 which reads “Storage compartments shall be divided into sections.”

Substantiation: Some storage compartments may be designed to house a specific piece of equipment or may be of a size that, if divided, will be too small to be practical. There is no reason to require all compartments to be divided into sections.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-622 Log #368 **Final Action: Accept in Principle**
(6.17.7)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Revise text to read as follows:

Drawer slides ~~shall~~ maybe self-locking.

Substantiation: Drawer slides are preference of purchaser.

Committee Meeting Action: **Accept in Principle**

Delete section 6.17.7.

Committee Statement: “May” is not appropriate language for standard. The committee is deleting the section so that it is optional.

Number Eligible to Vote: **32**

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-623 Log #1237 **Final Action: Reject**
(6.17.7)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

6.17.7 Drawer slides shall be self-locking.

Substantiation: This requires clarification. When open or closed??? A drawer that locks open is extremely dangerous. Or was it meant to be self closing.

Committee Meeting Action: **Reject**

Committee Statement: The committee deleted the section so that it is optional.

Number Eligible to Vote: **32**

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-624 Log #369 **Final Action: Reject**
(6.17.8)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Revise text to read as follows:

Shelves ~~shall~~ maybe removable.

Substantiation: Removable shelves are preference of purchaser.

Committee Meeting Action: **Reject**

Committee Statement: See committee action on Proposal 1917-625 (Log #1290).

Number Eligible to Vote: **32**

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-625 Log #1290 **Final Action: Accept**
(6.17.8)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

6.17.8 Shelves ~~shall be removable~~.

Substantiation: The specification should not preclude the customer’s election to use fixed shelves.

Committee Meeting Action: **Accept**

Number Eligible to Vote: **32**

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-626 Log #1815 **Final Action: Reject**
(6.17.8)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

6.17.8 3. Shelves shall be removable and shall be adjustable.

Substantiation: Usage may change as equipment needs and designs change.

Committee Meeting Action: **Reject**

Committee Statement: See committee action on Proposal 1917-625 (Log #1290).

Number Eligible to Vote: **32**

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-627 Log #33 **Final Action: Accept in Principle**
(6.17.9)

Submitter: Philip Bonaiuto, Mass Dept. of Public Health

Recommendation: Revise text to read as follows:

6.17.9 Doors shall be closed during transport and shall be auto latching.

Substantiation: The Ambulance Regulation Program Staff felt the use of auto latching devices was prudent to ensure protection from flying hazards in the patient compartment during transport and movement of the vehicle.

Committee Meeting Action: **Accept in Principle**

Committee Statement: See committee action on Proposal 1917-630 (Log #1619).

Number Eligible to Vote: **32**

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-628 Log #370 **Final Action: Reject**
(6.17.9)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Doors ~~shall remain closed during transport~~.

Substantiation: The proposed standard is an operational issue, not a standard.

Committee Meeting Action: **Reject**

Committee Statement: See committee action on Proposal 1917-630 (Log #1619).

Number Eligible to Vote: **32**

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-629 Log #1291 **Final Action: Reject**
(6.17.9)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

6.17.9 ~~Doors shall remain closed in transport~~.

Substantiation: While this is a logical operating requirement, it is not a construction specification and therefore should not be included in this specification.

Committee Meeting Action: **Reject**

Committee Statement: See committee action on Proposal 1917-630 (Log #1619).

Number Eligible to Vote: **32**

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-630 Log #1619 **Final Action: Accept in Principle**
(6.17.9)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.17.9 to read as follows:

6.17.9 Doors latches shall be designed to keep the doors remain closed during transport.

Substantiation: Without change, it sounds like an operational statement rather than a design requirement.

Committee Meeting Action: **Accept in Principle**

Revise 6.17.9 to read as follows:

6.17.9 6.17.5 Doors latches shall be designed to remain-keep the doors remain closed during transport.

Committee Statement: The committee revised the language for clarity.

Number Eligible to Vote: **32**

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-631 Log #1620 **Final Action: Accept in Part**
(6.18)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete the section number and heading or add requirements.

Substantiation: There are no requirements under the section 6.18 *Cabinet Measuring. There is also no annex material as indicated by the asterisk.

Committee Meeting Action: Accept in Part

Delete the following:

6.18 *Cabinet Measuring:

Committee Statement: The committee agreed to delete text and did not add requirements.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-632 Log #1538 **Final Action: Reject**
(6.19)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.19.4 Counter tops and shelves shall be surrounded by a lip of not less than 0.5 in. (13 mm) in height ON ANY SIDE NOT BORDERED BY A WALL.

6.19.5 SHELVES WHEN NECESSARY WILL HAVE A LIP OF 0.5 IN (13MM) IN HEIGHT ON ANY SIDE NOT BORDERED BY A WALL.

Substantiation: Don't need a lip on an edge bordered by a wall, and not all shelves need a lip.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-638 (Log #CP15).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-633 Log #735 **Final Action: Reject**
(6.19.1)

Submitter: Jeffrey A. Pike, Biomechanics Consulting, Inc.

Recommendation: Revise text to read as follows:

6.19.1 The interior of the body shall be free of all sharp projections and sharp corners and the head impact zone shall be free of non-yielding surfaces.

Substantiation: This incorporates the methodology detailed in FMVSS 201 (US Code of Federal Regulations, Title 49, Part 571, Sub-Part A, Section 201 - Occupant Head Protection), to help avoid injurious head impacts.

Committee Meeting Action: Reject

Committee Statement: Head impact zone does not define an area and no surface is completely non-yielding.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-634 Log #935 **Final Action: Reject**
(6.19.3)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: This section should be strengthened to require that interior surfaces be constructed out of materials resistant to microbes and built in such a way to reduce the accumulation of biological contaminants. In addition, surfaces should be capable of being disinfected by mechanical, chemical or

ultraviolet means.

Substantiation: Nosocomial infections are a major concern within healthcare facilities that is a topic being aggressively addressed by the Joint Commission http://www.jointcommission.org/infection_control.aspx. Cross-contamination is also a concern within ambulances: <http://www.jephc.com/uploads/Manuscript%20990304AM.pdf>

<http://www.cdc.gov/ncidod/sars/guidance/I/pdf/prehospital.pdf>

Accumulation of infectious agents within ambulances puts patients and crews at risk of serious illness. The existing draft partially addressed this issue, but could be easily expanded to provide more value in relation to this important topic.

Committee Meeting Action: Reject

Committee Statement: Standard currently addresses the issue of infection prevention through cleaning & construction adequately.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-635 Log #949 **Final Action: Reject**
(6.19.3)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: This section should be strengthened to require that interior surfaces be constructed out of materials resistant to microbes and built in such a way to reduce the accumulation of biological contaminants. In addition, surfaces should be capable of being disinfected by mechanical, chemical or ultraviolet means.

Substantiation: Nosocomial infections are a major concern within healthcare facilities that is a topic being aggressively addressed by the Joint Commission http://www.jointcommission.org/infection_control.aspx. Cross-contamination is also a concern within ambulances: <http://www.jephc.com/uploads/Manuscript%20990304AM.pdf>

<http://www.cdc.gov/ncidod/sars/guidance/I/pdf/prehospital.pdf>

Accumulation of infectious agents within ambulances puts patients and crews at risk of serious illness. The existing draft partially addressed this issue, but could be easily expanded to provide more value in relation to this important topic.

Committee Meeting Action: Reject

Committee Statement: Standard currently addresses the issue of infection prevention through cleaning & construction adequately.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-636 Log #1621 **Final Action: Reject**
(6.19.3(3))

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.19.3 (3) to read as follows:

6.19.3 (3) Fire resistant in compliance with FMVSS 302 or other applicable legally adopted standards, whichever provides the greater protection.

Substantiation: NFPA standards are international standards and need to accommodate legal requirements if used outside the United States.

Committee Meeting Action: Reject

Committee Statement: FMVSS is the legally required standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-637 Log #1081 **Final Action: Reject**
(6.19.4)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.19.4 Counter tops and shelves shall be surrounded by a boarder or lip of not less than 0.5 in. (13 mm) in height. Shelves when necessary will have a lip of 0.5 in. (13 m) in height on any side not bordered by a wall.

Substantiation: Counter tops and shelves need to be described differently. Shelves are usually surrounded by walls on 2 or more sides. Only the open sides require lips.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-638 (Log #CP15).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-638 Log #CP15 **Final Action: Accept**
(6.19.4)

Submitter: Technical Committee on Ambulances,

Recommendation: Delete the following:

~~6.19.4 Counter tops and shelves shall be surrounded by a lip of not less than 0.5 in. (13 mm) in height.~~

Substantiation: A lip not required as a minimum standard.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-639 Log #34 **Final Action: Reject**
(6.20)

Submitter: Philip Bonaiuto, Mass Dept. of Public Health

Recommendation: Revise text to read as follows:

6.20 Equipment Mounting.

~~Supplies, devices, tools, etc., shall be stored in enclosed compartments or fastened to secure them during vehicle motion. Supplies, devices, tools, etc., shall be stored in enclosed compartments and drawers designed to accommodate the respective items. All medical devices and equipment shall be stowed or properly fastened in/on the action area according to the medical device manufacturer's directions to secure them during vehicle motion. Sheet metal and wood screws are not acceptable as securing devices.~~

Note: Equipment hold down devices i.e., straps and netting shall be fastened with metal hardware clamps, buckles and anchorages capable of adequately restraining equipment and devices in the event of a motor vehicle crash.

Substantiation: The Ambulance Regulation Program Staff felt the use of metal hardware clamps and devices was prudent to ensure protection from flying hazards in the patient compartment during transport and movement of the vehicle.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-643 (Log #CP16).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-640 Log #922 **Final Action: Reject**
(6.20)

Submitter: Christopher Ryan, New Jersey Department of Health and Senior Services / Rep. Office of Emergency Medical Services

Recommendation: Revise text to read as follows:

6.20 Equipment Mounting.

Supplies, devices, tools, etc., shall be stored in enclosed compartments or fastened to secure them during vehicle motion. The equipment must be fastened in such a manner to ensure that equipment remain firmly in place and shall not present a hazard to any vehicle occupant in the event of an accident or sudden change in vehicle speed or direction. Fastener systems shall not include rubber straps, "shock cords", quick release buckles or hook and loop.

Substantiation: The original statement states that equipment not stored in a compartment must be fastened. The statement does not address how to fasten equipment. By substantiating the statement the standard is clear that any equipment in the module of the ambulance must be crash worthy and not be allowed to become airborne. The rubber straps, "shock cords", hook and loop and quick release buckles may allow objects to become un-crashworthy during an accident, sudden change in vehicle speed or direction.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-643 (Log #CP16).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-641 Log #1208 **Final Action: Reject**
(6.20)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

~~Equipment Mounting:~~

~~Supplies, devices, tools, etc., shall be stored in enclosed compartments or fastened to secure them during vehicle motion.~~

Substantiation: The proposed standard is an operational issue not a standard.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-643 (Log #CP16).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-642 Log #1622 **Final Action: Accept in Principle**
(6.20)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.20 to read as follows:

~~6.20 Medical Supplies and Equipment Storage Mounting. Supplies, devices, tools, etc., shall be stored in enclosed compartments or fastened to secure them during vehicle motion.~~

6.20.1 Enclosed compartments shall be provided to contain medical supplies, patient treatment devices and equipment, and related tools while the vehicle is in motion.

6.20.2 Patient treatment devices and equipment shall be permitted to be stored in brackets designed specifically to hold the device or equipment if such brackets are fastened to interior structural members.

6.20.3 If equipment that is not required to be used during patient transport is to be mounted or stored in a driving or patient area, it shall be contained in a fully enclosed and latched compartment capable of containing the contents when a 9 G force is applied in the longitudinal axis of the vehicle or a 3 G force is applied in any other direction, or the equipment is mounted in a bracket(s) that can contain the equipment when the equipment is subjected to those same forces.

Substantiation: As written, the requirement is more of an operational issue that requires things to be stored rather than a standard requirement. The standard needs to provide for compartments and brackets, while SOPs would require their use. Equipment not required for patient treatment such as SCBA units and extraction equipment should not be stored in the driving or patient compartment. If it must be, special compartments or brackets need to be provided to contain the equipment in case of a sudden deceleration or accident. Also "etc." is open ended as to what is included and not appropriate in a standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-643 (Log #CP16).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-643 Log #CP16
(6.20)

Final Action: Accept

Submitter: Technical Committee on Ambulances,
Recommendation: Revise text to read as follows:

6.20 Equipment Mounting.

Supplies, devices, tools, etc., shall be stored in enclosed compartments or fastened to secure them during vehicle motion:

6.20.1 Medical Supplies and Equipment Storage Mounting. Supplies, devices, tools, etc., shall be stored in enclosed compartments or fastened to secure them during vehicle motion.

6.20.2 Equipment weighing 3lbs (1.36kg) or more mounted or stored in a driving or patient area, shall be contained in an enclosed compartment capable of containing the contents when a 10G force is applied in the longitudinal, lateral, vertical axis of the vehicle, if the equipment is secured in a bracket(s) or mount that can contain the equipment when the equipment is subjected to those same forces.

6.20.3 Each patient compartment cabinet shall be permanently labeled on the exterior of the cabinet with its maximum load capacity.

Substantiation: Ensure that equipment is not loose in the patient compartment. Heavier items need to be restrained to a specific standard. The committee sees this as a good first step but plans further work on this issue as more data becomes available from NIOSH.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-644 Log #162 **Final Action: Accept in Principle**
(6.21)

Submitter: Timothy J. Crowley II, Crowley II Consulting, LLC

Recommendation: Add the following text to the end:

“...each disposable container shall be mounted inside a fixed container capable of withstanding a moderate crash without dispersing its contents into the patient compartment.

Substantiation: These devices have the potential and have ejected the contents into the patient compartment and the cab area following a crash. This presents a biohazard to all occupants.

Committee Meeting Action: Accept in Principle

Add new Annex to read as follows:

A.6.21 Each disposable container should be mounted inside a fixed container capable of withstanding a moderate crash without dispersing its contents into the patient compartment.

Committee Statement: The committee felt that this material was better suited for the Annex because there currently is not a crash-rated disposable container.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-645 Log #35 **Final Action: Reject**
(6.22 and 6.22.1)

Submitter: Philip Bonaiuto, Mass Dept. of Public Health

Recommendation: Revise text to read as follows:

6.22 Holder for Intravenous Fluid Containers.

6.22.1 One ceiling mounted “hook” style device specifically designed for holding IV containers shall be provided, including hook and loop straps to adequately secure an I.V. bag/bottles. I.V.

Two near flush style ceiling mounted, I.V. ceiling holders specifically designed for holding I.V.’s, with a Velcro type strap to hold and control I.V. bags/bottles, shall be provided. The ceiling holders shall not protrude more than 2.5 cm (1 in.), be located on or adjacent to the side wall, one at the head of the primary patient and one at the head of the secondary patient’s cot (squad bench). When an ALS configuration is specified, one additional I.V. hanger shall be furnished for each patient, at the lower extremities.

Substantiation: The Ambulance Regulation Program Staff felt the use of multiple placement of I.V. holders was prudent to ensure that multiple patients had safe access to I.V.’s at all extremities.

Committee Meeting Action: Reject

Committee Statement: Proposal is too design restrictive, and limits customer option.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-646 Log #1623 **Final Action: Accept in Principle**
(6.22.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.22.1 to read as follows:

6.22.1 One ceiling mounted “hook” style device specifically designed for holding and securing an IV fluid container against accidental release during normal transport activity IV containers shall be provided, including hook and loop straps to adequately secure an IV bag/bottle.

Substantiation: As written, the requirement is design restrictive. Also the word “adequately” is a non measurable word. See MOS 2.2.2.3.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

6.22.1 One ceiling mounted “hook” style device specifically designed for holding and securing an IV fluid container against accidental release during normal transport activity IV containers shall be provided, including hook and loop straps to adequately secure an IV bag/bottle.

Committee Statement: The committee deleted “ceiling” to allow side or wall mount devices.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-647 Log #230 **Final Action: Reject**
(6.22.2)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Revise text to read as follows:

6.22.2 The device shall not protrude more than 1.0 in. (25 mm) The loop and strap device can not be made of metal and shall be of a flexible type material.

Substantiation: The wording in Section 6.22 is not clear. It is understandable what the intent of the section is but wording is not clear. By adding the proposed text should help clear any question.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-646 (Log #1623).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-648 Log #1426 **Final Action: Accept**
(6.22.2)

Submitter: Michael S. Wolfe, Plainfield Fire Territory

Recommendation: Revise text to read as follows:

6.22.2 The device shall not protrude more than 1.0 in. (25 mm) in the closed position.

Substantiation: This will clarify the measurement of the protrusion when stored versus the measurement when the device is being used.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-649 Log #36 **Final Action: Accept in Principle**
(6.22.2, 6.24.8.2, and 6.24.8.3)

Submitter: Philip Bonaiuto, Mass Dept. of Public Health

Recommendation: Revise text to read as follows:

6.22.2 The device shall not protrude more than 1.0 in. (25 mm).

6.24.8.2 If the purchaser specifies that the ambulance will transport infants in a seat it shall include an Infant Restraint Seat or have provisions to accommodate an infant seat or device.

6.24.8.3 If the purchaser specifies that the ambulance will transport infants in a seat it shall include an Infant Restraint Seat or have provisions to accommodate an infant seat or device.

Substantiation: The Ambulance Regulation Program Staff felt that the proposed wording was confusing.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-702 (Log #CP17).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-650 Log #68 **Final Action: Reject**
(6.23)

Submitter: William von Zehle, Jr., Wilton Emergency Medical Services

Recommendation: A label that states the maximum number of occupants the vehicle is designed to carry shall be located in an area visible to the driver.

Substantiation: Clarification requested. Does this label include seatbelted positions only or seatbelted positions plus the stretcher?

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-651 (Log #1292).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-651 Log #1292 **Final Action: Accept**
(6.23)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

~~6.23 Personnel Capacity-~~

~~A label that states the maximum number of occupants the vehicle is designed to carry shall be located in an area visible to the driver.~~

Substantiation: The seating positions intended for occupancy are clearly evident from available seatbelts. To simplify operation and improve safety, labels/placards in the cab should be strictly limited to those essential to the operator's function.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-652 Log #1624 **Final Action: Reject**
(6.23)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Move this requirement to chapter 4 or 5

Substantiation: Chapter 6 is requirements for patient compartment. This requirement is broader than that as it includes the cab area.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-651 (Log #1292).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-653 Log #1557 **Final Action: Accept in Principle**
(6.23.3)

Submitter: Peter Luhrs, Weldon (a Division of Akron Bradd

Recommendation: Revise text to read as follows:

6.26.3 The warning system shall consist of an audible warning device(s) that can be heard at all seating positions designed to be occupied while the vehicle is in motion and a visual display visible to the driver showing the condition of each seating position.

Substantiation: Just add an 's' to devices because more than one will be required for module seating positions to be 'able to hear the audible warning.'

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-654 Log #473 **Final Action: Accept in Principle**
(6.24)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.24.1 Seat Integrity.

Any independent seat with integrated belt system (ABTS) shall be dynamically tested by the seat manufacturer in accordance with FMVSS 208 for any locked orientation in which it will be installed.

6.24.1.1 FMVSS 207/210 shall be tested to verify the floor structure designed by the FSAM.

6.24.1.2 Side-facing seats shall be tested in the direction of the seated occupant.

6.24.1.3 For Type I belts installed for a side-facing seat, the anchorages, attachment hardware, and attachment bolts for any of the following seat belt assemblies shall withstand a 5,000 pound force.

6.24.1.4 For Type II belts installed on a side facing seat, the anchorages, attachment hardware, and attachment bolts for any of the following seat belt assemblies shall withstand a 3,000 pound force applied to the lap belt portion of the seat belt assembly simultaneously with a 3,000 pound force applied to the shoulder belt portion of the seat belt assembly.

6.24.1.5 Any designated seating position where the seat belt anchorages are within 12" of each other must be testing simultaneously (i.e. squad bench area).

Substantiation: There are always going to be seatbelts in the patient compartment for side facing seats. Because there are no requirements by FMVSS we need to put something in place to help keep people safer in the event of an accident.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-656 (Log #CP19).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-655 Log #1625 **Final Action: Reject**
(6.24)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Review 6.24 and move requirements that apply to the cab area as well as the patient compartment to chapter 4 or 5.

Substantiation: Chapter 6 is requirements for patient compartment. Some of the requirements in section 6.24 should be applicable to the cab area as well.

Committee Meeting Action: Reject

Committee Statement: Committee does not feel that the seat requirements can be combined since the cab seats are typically provided with the chassis.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-656 Log #CP19
(6.24)

Final Action: Accept

Submitter: Technical Committee on Ambulances,
Recommendation: Revise text to read as follows:

6.24.1 Seat Integrity.

Any independent seat with integrated belt system (ABTS) shall be tested by the seat manufacturer in accordance with FMVSS 208 for any locked orientation in which it will be installed.

Any seat mounted on an adjustable seat device shall be dynamically tested along the direction of the adjustment using the crash pulse in SAE J2917. The test shall be conducted with the seat oriented in the direction of adjustment for both the forward facing and rear facing directions. During and after the test the seat shall remain securely attached to the adjustment device.

6.24.1.1* Seat belt anchorages on side facing seats shall be tested in accordance with the strength requirements of FMVSS 210.

A.6.24.1.1 It is important that side facing seat belts are properly anchored. FMVSS 210 provides instructions for how to test side facing seat belt anchors but it specifically excludes side facing seats from any strength requirements. This standard requires that side facing seats be tested using the FMVSS 210 guidelines. Because the loads are lower in a lateral crash than in a forward crash, this testing does not need to be performed in conjunction with the seat-pull testing requirements of FMVSS 207.

Substantiation: Seat tracks are currently designed to be oriented facing forward. When mounted in a rear facing direction the seat can come off the track in a dynamic sled test. Adding a test criteria is needed to ensure the seat does not come off the tracks in a crash.

Side facing seat belt anchorages should be tested to some standard, but they are excluded from FMVSS 210. This wording will ensure a test of the anchorages. Given that the forces in a side impact are less than in a front impact, the committee felt that the additional forces from FMVSS 207 are not needed.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-657 Log #80

Final Action: Accept in Principle

(6.24.1)

Submitter: Brad Elliott, Intertek Industrial Corp.

Recommendation: Revise text to read as follows:

6.24.1 Seat Integrity. Any independent seat with integrated belt system (ABTS) shall be dynamically tested by seating manufacture in accordance with FMVSS 208 for any locked orientation in which it will be installed - AMD 026 using the pulse rate provided by SAE J2917.

Substantiation: AMD/NIOSH have spent time in developing a test procedure AMD 026 and crash pulse rate SAE J2917 to dynamically test independent seating systems - NFPA should review this standard first before stating test to FMVSS 208 requirements which only covers the front seats.

Note: Supporting material is available for review at NFPA Headquarters.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-656 (Log #CP19).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-658 Log #1082

Final Action: Accept in Principle

(6.24.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.24.1 Seat Integrity.

Any independent seat with integrated belt system (ABTS) shall be dynamically tested by the seat manufacturer in accordance with SAE J2917 Occupant Restraint Mounting Integrity Frontal Impact System - Level Ambulance Patient Compartment Recommended Practice. Using the injury criteria as established in FMVSS 208 for any locked orientation in which it will be installed.

Substantiation: FMVSS is not the appropriate testing method to be used for seat integrity. FMVSS 208 applies to overall vehicle front seat injury criteria, not to specify components or to areas of the vehicle other than the cab.

The crash fail criteria in FMVSS 208 has been established to determine the loads on test dummies subjected to frontal impact. The combined chassis,

components and seat restraints must be tested together including floor deflection and vehicle crush data for each type of chassis used.

SAE J2917 suggests a test procedure for the actual seat itself, SAE J2917 does not give guidance on injury criteria, therefore, using injury criteria from FJV88 208 would be appropriate.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-656 (Log #CP19).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-659 Log #1293

Final Action: Accept in Principle

(6.24.1)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.24.1 Seat Integrity.

Any independent seat with integrated belt system (ABTS) shall be dynamically tested by the seat manufacturer in accordance with FMVSS 208 for any locked orientation in which it will be installed.

Substantiation: FMVSS 208 calls for a static test.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-656 (Log #CP19).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-660 Log #1399

Final Action: Accept in Principle

(6.24.1)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.24.1 Seat Integrity. Any independent seat with integrated occupant restraint belt system (ABTS) shall be dynamically tested by the seat manufacturer in accordance with FMVSS 208 for any locked orientation in which it will be installed.

Substantiation: Better definition of restraining method for occupants.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-656 (Log #CP19).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-661 Log #1540

Final Action: Accept in Principle

(6.24.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.24.1 Seat Integrity. Any independent seat with integrated belt system (ABTS) shall be dynamically tested by the seat manufacturer in accordance with FMVSS 208 for any locked orientation in which it will be installed. SAE J2917 Occupant Restraint and Equipment Mounting Integrity Frontal Impact System-Level Ambulance Patient Compartment Recommended Practice. Injury Criteria as established by FMVSS 208.

Substantiation: It may be too early to reference this, but we are submitting this as a placeholder as we believe it would not have an opportunity to be considered later in the Standards development process, and in the event that it can be proven out satisfactorily through the NIOSH research, it can have the option to be kept, modified or deleted.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-656 (Log #CP19).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-662 Log #1626 **Final Action: Accept in Principle**
(6.24.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.24.1 to read:

6.24.1 Seat Integrity. Any independent seat with an integrated seat belt system (ABTS) shall be dynamically tested by the seat manufacturer in accordance with FMVSS 208 for any locked orientation in which it will be installed and shall meet FMVSS 208 or other applicable legally adopted standards.

Substantiation: I believe ABTS is a proprietary system and as such cannot be referenced in an NFPA standard.

NFPA standards are international standards and need to accommodate legal requirements if used outside the United States.

Other changes are editorial for clarification.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-656 (Log #CP19).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-663 Log #17 **Final Action: Reject**
(6.24.2)

Submitter: Brendan Kearney, Boston EMS

Recommendation: 6.24.2 states: "SCBA packs shall not be stored in the seat backs..." (and absolute prohibition), but appendix A.6.24.2 makes it an option - "if the purchasers does specify SCBA storage in seat backs, then they should meet the requirements found in NFPA 1901". The proposed standard is in conflict with the supplemental information in the appendix.

Substantiation: 6.24.2 states: "SCBA packs shall not be stored in the seat backs..." (and absolute prohibition), but appendix A.6.24.2 makes it an option - "if the purchasers does specify SCBA storage in seat backs, then they should meet the requirements found in NFPA 1901". The proposed standard is in conflict with the supplemental information in the appendix.

Committee Meeting Action: Reject

Committee Statement: Annex states that SCBA storage is not recommended. Annex material is reference information only, so no conflict exists.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-664 Log #1816 **Final Action: Accept in Principle**
(6.24.2)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Delete the following text:

~~6.24.2* SCBA Storage:~~

~~SCBA packs shall not be stored in the seat backs of seats in the patient compartment.~~

Substantiation: Not carried on unit whose primary purpose is the care and transportation of the sick and injured. Should be in separate standard with type I-AD and III-AD.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-666 (Log #CP20).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-665 Log #1842 **Final Action: Accept in Principle**
(6.24.2)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Delete the following text:

~~6.24.2* SCBA Storage:~~

~~SCBA packs shall not be stored in the seat backs of seats in the patient compartment.~~

Substantiation: Not carried on unit whose primary purpose is the care and transportation of the sick and injured. Should be in separate standard with type I-AD and III-AD.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-666 (Log #CP20).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-666 Log #CP20 **Final Action: Accept**
(6.24.2)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

6.24.3.2.1 The effective seat belt web length for a Type 1 lap belt for pelvic restraint shall be a minimum of 60 in. (1524 mm) with the seat adjusted all the way back and down when measured using the following procedure:

(1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (line 1 in Figure 6.24.3.2.1). ~~For seats with an SCBA seat back, use a plane that simulates the position of an SCBA back pad installed in the SCBA holder.~~

6.24.3.2.2 The effective seat belt web length for a Type 2 pelvic and upper torso restraint-style seat belt assembly shall be a minimum of 110 in. (2800 mm) with the seat adjusted all the way back and down when measured using the following procedure:

(1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (line 1 in Figure 6.24.3.2.1). ~~For seats with an SCBA seat back, use a plane that simulates the position of an SCBA back pad installed in the SCBA holder.~~

Substantiation: The committee believes that the primary mission of an ambulance is for transport and care of the sick and injured and SCBA should not be carried in the seat backs and has deleted text in 6.24.3.2.1 and 6.24.3.2.2.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-667 Log #1400 **Final Action: Reject**
(6.24.3)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.24.3: Seat Belts. Occupant Restraints.

Substantiation: Broader definition of methods to restrain occupants seated in the patient compartment.

Committee Meeting Action: Reject

Committee Statement: Section is only concerning seat belts.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-668 Log #1627 **Final Action: Reject**
(6.24.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.24.3 to read as follows and move the requirement to a section that applies to all seats in the ambulance, not just the patient compartment. :

6.24.3 Seat Belts.

6.24.3.1* Each crew riding position shall be provided with a seat belt:

6.24.3.2 Ambulances above 19,500 lb (8,845 kg) GVWR shall provide seat belts in accordance with 6.24.3.2.1 and 6.24.3.2.2: 6.24.3.1.1 through 6.24.3.1.3.

6.24.3.2.1 6.24.3.1.1 The effective seat belt web length for a Type 1 lap belt for pelvic restraint shall be a minimum of 60 in. (1524 mm) ~~with the seat adjusted all the way back and down~~ when measured using the following procedure:

- (1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (line 1 in Figure 6.24.3.2.1 6.24.3.1.1). ~~For seats with an SCBA seat back, use a plane that simulates the position of an SCBA back pad installed in the SCBA holder.~~
- (2) Locate point A on line 1 at the outside of the seat on the retractor side of the seat.
- (3) Locate point C on line 1 at the outside of the seat on the receiver side of the seat.
- (4) Locate point D at the tip of the receiver.
- (5) Pull the seat belt webbing entirely out of the retractor and measure along the webbing between point A and the male seat belt buckle. Record this length as AD.
- (6) Measure from point C to point D and record this length as CD.
- (7) The effective seat belt web length equals AD + CD.

FIGURE 6.24.3.2.1 6.24.3.1.1 Dimension Lines for Measuring Seat Belt Effective Length.

6.24.3.2.2 6.24.3.1.2 The effective seat belt web length for a Type 2 pelvic and upper torso restraint-style seat belt assembly shall be a minimum of 110 in. (2800 mm) ~~with the seat adjusted all the way back and down~~ when measured using the following procedure:

- (1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (line 1 in Figure 6.24.3.2.1 6.24.3.1.1). ~~For seats with an SCBA seat back, use a plane that simulates the position of an SCBA back pad installed in the SCBA holder.~~
- (2) Locate an imaginary line parallel with line 1 and lying on the center of the seat back surface 29 in. (740 mm) from line 1 (line 2 in Figure 6.24.3.2.1 6.24.3.1.1).
- (3) Locate point A on line 1 at the outside of the seat on the retractor side of the seat.
- (4) Locate point B on line 2 at the shoulder strap edge of the seat back.
- (5) Locate point C on line 1 at the outside of the seat on the receiver side of the seat.
- (6) Locate point D at the tip of the receiver.
- (7) Pull the seat belt webbing entirely out of the retractor and measure along the webbing between points A and B. Record this length as AB.
- (8) Measure from point C to point D and record this length as CD.
- (9) The effective seat belt web length equals AB + 2CD.

6.24.3.1.3 ~~If the crew seat is adjustable, the measurements shall be made with the seat adjusted all the way back and down.~~

Substantiation: The seat belt requirements should be applicable regardless of GVWR. Also 6.24.2 prohibits SCBA in seatbacks so mention of them in this requirement creates confusion. The requirement for the crew seat adjustment to be way back and down is being moved to a separate paragraph as not all seats will be adjustable but all seats need seatbelts.

While this requirement is in the section on Patient Compartment Seats, the committee should move it to a section that applies to all seats in the ambulance as the seats in the cab need to meet the same requirements.

Committee Meeting Action: Reject

Committee Statement: Committee realizes that this standard will not influence high production chassis seating. It can, however, influence those seats installed in the ambulance area or those on medium duty truck cabs. The comment to remove reference to SCBAs is valid and will be acted upon. The committee wishes to keep the rest of the text common with NFPA 1901, *Standard for Automotive Fire Apparatus* from which it was copied.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-669 Log #1401 **Final Action:** Reject
(6.24.3.1)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.24.3.1: * Each crew riding position shall be provided with an occupant restraint device, a seat belt.

Substantiation: Broader definition of methods to restrain occupants in vehicle.

Committee Meeting Action: Reject

Committee Statement: Only seat belts are discussed in this section.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-670 Log #1083 **Final Action:** Reject
(6.24.3.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.24.3.2 Ambulances shall comply with FMVSS regulations. Vehicles above 19,500 lb (8,845 kg) GVWR shall provide seat belts in accordance with 6.24.3.2.1...".

Substantiation: We need specifications for vehicles under 19,500 lbs.

Committee Meeting Action: Reject

Committee Statement: All vehicles manufactured for the US market must comply with FMVSS. Restatement in this standard is not needed.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-671 Log #1084 **Final Action:** Reject
(6.24.3.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.24.3.2 Ambulances shall comply with FMVSS regulations. Vehicles above 19,500 lb (8,845 kg) GVWR shall provide seat belts in accordance with 6.24.3.2.1 and 6.24.3.2.2.

Substantiation: We need specifications for vehicles under 19,500 lbs.

Committee Meeting Action: Reject

Committee Statement: All vehicles manufactured for the US market must comply with FMVSS. Restatement in this standard is not needed.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-672 Log #1402 **Final Action:** Reject
(6.24.3.2)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.24.3.2 Ambulances above 19,500 lb (8,845 kg) GVWR shall provide seat belts an occupant restraint devices in accordance with 6.24.3.2.1 and 6.24.3.2.2.

Substantiation: Broader definition of methods to restrain occupants in vehicle.

Committee Meeting Action: Reject

Committee Statement: Only seat belts are discussed in this section.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-673 Log #1085 **Final Action:** Reject
(6.24.3.2.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.24.3.2.1 The effective seat belt web length for a Type 1 lap belt for pelvic restraint shall be a minimum of 60 in. (1524 mm) with the seat adjusted all the way back and down when measured using the following procedure:

- (1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (line 1 in Figure 6.24.3.2.1). ~~For seats with an SCBA seat back, use a plane that simulates the position of an SCBA back pad installed in the SCBA holder.~~
- (2) Locate an imaginary line parallel with line 1 and lying on the center of the ~~seat~~ back surface 29 in. (740 mm) from line 1 (line 2 in Figure 6.24.3.2.1).
- (3) Locate point A on line 1 at the outside of the seat on the retractor side of the seat.
- (4) Locate point B on line 2 at the shoulder strap edge of the seat back.
- (5) Locate point C on line 1 at the outside of the seat on the receiver side of the seat.

(6) Locate point D at the tip of the receiver.
 (7) Measure from point C to point D and record this length as CD.
 (8) Pull the seat belt webbing entirely out of the retractor and measure along the webbing between points A and B. Record this length as AB.
 Measure from point C to point D and record this length as CD. (1524 mm) with the seat adjusted all the way back and down when measured using the following procedure:

(1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (line 1 in Figure 6.24.3.2.1).

For seats with an SCBA seat back, use a plane that simulates the position of an SCBA back pad installed in the SCBA holder.

(2) Locate point A on line 1 at the outside of the seat on the retractor side of the seat.

(3) Locate point C on line 1 at the outside of the seat on the receiver side of the seat.

(4) Locate point D at the tip of the receiver.

(5) Pull the seat belt webbing entirely out of the retractor and measure along the webbing between point A and the male seat belt buckle. Record this length as AD.

(6) Measure from point C to point D and record this length as CD.

(7) The effective seat belt web length equals AD + CD.

FIGURE 6.24.3.2.1 Dimension Lines for Measuring Seat Belt Effective Length.

Substantiation: This passage contradicts 6.24.2

Committee Meeting Action: Reject

Committee Statement: Committee realizes that this standard will not influence high production chassis seating. It can, however, influence those seats installed in the ambulance area or those on medium duty truck cabs. The comment to remove reference to SCBAs is valid and will be acted upon. The committee wishes to keep the rest of the text common with NFPA 1901, *Standard for Automotive Fire Apparatus* from which it was copied.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-674 Log #1403 **Final Action:** Reject
 (6.24.3.2.1)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.24.3.2.1 The effective seat-belt web length for a Type 1 lap-belt occupant restraint length for pelvic restraint shall be a minimum of 60 in. (1524 mm) with the seat adjusted all the way back and down when measured using the following procedure:

(1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (line 1 in Figure 6.24.3.2.1). For seats with an SCBA seat back, use a plane that simulates the position of an SCBA back pad installed in the SCBA holder.

(2) Locate point A on line 1 at the outside of the seat on the retractor side of the seat.

(3) Locate point C on line 1 at the outside of the seat on the receiver side of the seat.

(4) Locate point D at the tip of the receiver.

(5) Pull the seat belt webbing entirely out of the retractor and measure along the webbing between point A

and the male seat belt buckle. Alternatively, measure the length of the occupant restraint device across the imaginary line described in lines 1 thru 4 above.

Record this length as AD.

(6) Measure from point C to point D and record this length as CD.

(7) The effective seat-belt web occupant restraint length equals AD + CD.

Substantiation: Broader definition of methods to restrain occupants in vehicle.

Committee Meeting Action: Reject

Committee Statement: Committee realizes that this standard will not influence high production chassis seating. It can, however, influence those seats installed in the ambulance area or those on medium duty truck cabs. The comment to remove reference to SCBAs is valid and will be acted upon. The committee wishes to keep the rest of the text common with NFPA 1901, *Standard for Automotive Fire Apparatus*, from which it was copied.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-675 Log #1020 **Final Action:** Reject
 (6.24.3.2.2)

Submitter: David Schimmel, Wayne Memorial First Aid Squad

Recommendation: Delete text to read as follows:

6.24.2* SCBA Storage SCBA packs shall not be stored in the seat backs of seats in the patient compartment.

Substantiation: Why is SCBA storage prohibited in the rear patient compartment there is nothing in an SCBA that would endanger the patient and in some departments the crew area doubles as a patient transport area especially in Rescue trucks. This would prevent this from occurring.

Committee Meeting Action: Reject

Committee Statement: Committee realizes that this standard will not influence high production chassis seating. It can, however, influence those seats installed in the ambulance area or those on medium duty truck cabs. The comment to remove reference to SCBAs is valid and will be acted upon. The committee wishes to keep the rest of the text common with NFPA 1901, *Standard for Automotive Fire Apparatus* from which it was copied.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-676 Log #1404 **Final Action:** Reject
 (6.24.3.2.2)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.24.3.2.2 The effective seat-belt web occupant restraint length for a Type 2 pelvic and upper torso restraint-style seat belt assembly shall be a minimum of 110 in. (2800 mm) with the seat adjusted all the way back and down when measured using the following procedure:

(1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (line 1 in Figure 6.24.3.2.1). For seats with an SCBA seat back, use a plane that simulates the position of an SCBA back pad installed in the SCBA holder.

(2) Locate an imaginary line parallel with line 1 and lying on the center of the seat back surface 29 in. (740mm) from line 1 (line 2 in Figure 6.24.3.2.1).

(3) Locate point A on line 1 at the outside of the seat on the retractor side of the seat.

(4) Locate point B on line 2 at the shoulder strap edge of the seat back.

(5) Locate point C on line 1 at the outside of the seat on the receiver side of the seat.

(6) Locate point D at the tip of the receiver.

(7) Pull the seat belt webbing entirely out of the retractor and measure along the webbing between points A and B. Alternatively, measure the largest adjustment length of the occupant restraint device in accordance with lines 1 thru 6 above. Record this length as AB.

(8) Measure from point C to point D and record this length as CD.

(9) The effective seat-belt web occupant restraint length equals AB + 2CD.

Substantiation: Broader definition of methods to restrain occupants in vehicle.

Committee Meeting Action: Reject

Committee Statement: Only seat belts are discussed in this section.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-677 Log #1405 **Final Action:** Reject
 (6.24.3.3)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Add text to read as follows:

6.24.3.3 Seats used in the patient compartment in forward, side, and rearward facing positions shall be equipped with Type 2 belt systems or other occupant restraint device suitable to restrain the occupants torso, shoulders, and upper body.

Substantiation: Type 2, or equivalent occupant restraints, provide more protection for the occupant. Verbiage provides broader definition of methods to restrain occupants in vehicle and broadens application to seats that face sideways in vehicle.

Committee Meeting Action: Reject

Committee Statement: Seat belt requirements other than length, color, etc... are specified by FMVSS.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-678 Log #1406 **Final Action: Reject**
(6.24.3.4)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Add text to read as follows:

6.24.3.4 Seats used in Type I, Type II, and Type III ambulances shall be equipped with Type 2 belt systems or other occupant restraint devices suitable to restrain the occupants torso, shoulders, and upper body.

Substantiation: Type 2, or equivalent occupant restraints, provide more protection for the occupant. Verbiage provides broader definition of methods to restrain occupants in vehicle.

Committee Meeting Action: Reject

Committee Statement: Seat belt requirements other than length, color, etc... are specified by FMVSS.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-679 Log #1628 **Final Action: Accept in Principle**
(6.24.4.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Relocate the requirement in 6.24.4.3 to a more appropriate section.

Substantiation: As written, this requirement has nothing to do with seated head clearance.

Committee Meeting Action: Accept in Principle

Renumber 6.24.4.3 to 6.24.5, renumber following sections appropriately.

6.24.4.3-6.24.5 Seat Adjustment. When independent horizontal seat adjustment is provided, it shall be fully adjustable within 10 seconds.

Committee Statement: The committee made a new section.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-680 Log #476 **Final Action: Accept in Principle**
(6.24.5)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.24.5 Seating Position Width.

Each designated seating space in vehicles greater than 10,000 lb (4,500 kg) GVWR shall have a minimum width of 24 in. (610 mm) at the shoulder height measured 30" above the seating surface.

Substantiation: Adding a height measurement gives the FSAM a set point to manufacture to.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-684 (Log #CP21).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-681 Log #1086 **Final Action: Accept in Principle**
(6.24.5)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.24.5 Seating Position Width.

Each designated seating space in vehicles greater than 10,000 lb (4,500 kg) GVWR shall have a minimum width of 6 in. between seating positions 24 in. (610 mm) at the shoulder height.

Substantiation: If the intention of this requirement is to obtain a minimum

distance between positions, this wording will clarify and will not conflict with AMD 005.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-684 (Log #CP21).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-682 Log #1541 **Final Action: Accept in Principle**
(6.24.5)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.24.5 Seating Position Width. Each designated seating space in vehicles greater than 10,000 lb (4,500 kg) GVWR shall have a minimum width of 6" between seating positions, 24 in. (610 mm) at the shoulder height.

Substantiation: Unclear if this was intent, but this creates 6" between the seats.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-684 (Log #CP21).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-683 Log #1629 **Final Action: Accept in Principle**
(6.24.5)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.24.5 to read as follows and move the requirement to a section that applies to all seating positions, not just the seating positions in the patient compartment.

6.24.5 Seating Position Width. Each designated seating space ~~in vehicles greater than 10,000 lb (4,500 kg) GVWR~~ shall have a minimum width of 24 in. (610 mm) at the shoulder height.

Substantiation: If 24 in. (610 mm) is required at the shoulder height in some vehicles, it needs to be provided in all vehicles. GVWR should have nothing to do with the width of seating spaces. Also, it needs to apply to all seating positions, not just those in the patient compartment.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-684 (Log #CP21).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-684 Log #CP21 **Final Action: Accept**
(6.24.5)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

6.24.5 6.24.6 Seating Position Width.

Each designated seating space ~~in vehicles greater than 10,000 lb (4,500 kg) GVWR~~ shall have a minimum width of 24 in. (610 mm) ~~at the shoulder height measured from the seat surface to 43"~~ above the seating surface.

Substantiation: This provides adequate shoulder width and specifies how high up the shoulder width should extend, and harmonizes shoulder width requirement with the head clearance test in chapter 9.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-685 Log #CP22
(6.24.6)

Final Action: Accept

Submitter: Technical Committee on Ambulances,
Recommendation: Revise text to read as follows:

6.24.6 6.24.7 Seat Size.

6.24.6.1 6.24.7.1 Seat bottom cushions shall be a minimum of 18 in. (460 mm) in width.

6.24.6.2 6.24.7.2 Seat bottom cushion shall be between and 15 in. (380 mm) and 19 in. (483 mm) from the front of the cushion to the face of the seat back.

6.24.6.3 6.24.7.3 A back cushion that extends from the seat bottom cushion face of the seat vertically at least 7.0 in. (460 mm) and that is a minimum of 18 in. (460 mm) wide at the base shall be provided.

6.24.6.4 6.24.7.4 Each seat shall provide back and head support beginning no more than 24 in. (610 mm) above the seat bottom cushion and continuing to at least 36 in. (914 mm) above the seat bottom cushion.

6.24.6.5 6.24.7.5 For any seat not covered by FMVSS 202, the top of the seat back or head rest shall be a minimum of 10 in. (254 mm) in width.

Substantiation: This clarifies where the 7.0 in. seat back cushion dimension should be measured from, and when the head rest requirements will apply.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-686 Log #9

Final Action: Accept in Principle

(6.24.6.3)

Submitter: Dan O'Brien, Malley Industries, Inc.

Recommendation: Revise text to read as follows:

Extends from the top face of the seat cushion vertically.

Substantiation: To establish the top of the seat cushion as the point from which the vertical measurement is taken.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-685 (Log #CP22).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-687 Log #1087

Final Action: Accept in Principle

(6.24.6.3)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.24.6.3 A back cushion that extends from the face of the seat vertically at least 7.0 in. (460 mm) and that is a minimum of 18 in. (460 mm) wide at the base shall be provided.

Substantiation: Need clarification for the phrase From the Face of the seat vertically.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-685 (Log #CP22).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-688 Log #1294

Final Action: Accept in Principle

(6.24.6.3)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.24.6.3 A back cushion that extends from the face of the seat vertically at least 7.0 in. (460 mm) and that is a minimum of 18 in. (460 mm) wide at the base shall be provided.

Substantiation: This specification is ambiguous. A face is normally considered to be a vertical surface. Is this specifying a measurement from the top surface of the seat base cushion? Perhaps section 6.24.6.3 and 6.24.6.4 can be combined and simplified.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-685 (Log #CP22).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-689 Log #1542

Final Action: Accept in Principle

(6.24.6.3)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.24.6.3 A back cushion that extends from the face of the seat vertically ? at least 7.0 in. (460 mm) and that is a minimum of 18 in. (460 mm) wide at the base shall be provided.

Substantiation: Needs clarification, can't tell intent. Recommend including illustration and annex item to provide more information.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-685 (Log #CP22).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-690 Log #474

Final Action: Reject

(6.24.6.5)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.24.6.5 The top of the seat back or head rest shall be a minimum of 10 in. (254 mm) in width. Annex

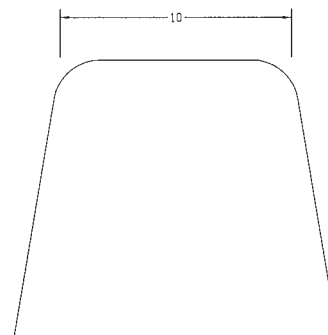


Figure 6.24.6.5

Substantiation: Showing a drawing of what/how to measure the top of a seat back is needed. Some manufacturers make the seat back exactly 10".

Committee Meeting Action: Reject

Committee Statement: Artwork implies restrictions that are not part of the specification.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-691 Log #574 **Final Action: Reject**
(6.24.7)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Access-to-Patient. This section should be deleted in its entirety

Substantiation: The NFPA should provide scientific justification that the proposed seats have been approved by all Federal regulatory agencies and that they are proven to improve safety and operational efficiency. In addition, the NFPA must indicate whether clarification of the ambiguity with Section 6.1.2's requirement for a constant clearance of 12 inches for a aisle walkway should be provided. Finally, stretcher manufacturers need to certify any guidance provided on center torso and head position for a stretcher.

Committee Meeting Action: Reject

Committee Statement: Seat can be slid back to provide the required 12 in. of aisle room.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-692 Log #1630 **Final Action: Accept in Principle**
(6.24.7)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.24.7 to read:

6.24.7 Access to Patient.

6.24.7.1 If the designated primary patient care seat is at the patient torso position it shall be capable of being adjusted such that the nearest edge of the seat bottom cushion is within ~~can be positioned no less than~~ 6 in. (152 mm) of the nearest edge of the patient cot.

6.24.7.2 The fore-aft position of the seat shall line up within 6 in. (152 mm) of the centerline of the torso as defined by the cot manufacturer.

6.24.7.3 If the designated primary patient care seat is at the patient head position it shall be capable of being adjusted such that the nearest edge of the seat bottom cushion is within ~~positioned no less than~~ 6 in. (152 mm) of from the nearest edge of the patient cot.

6.24.7.4 The longitudinal centerline of the seat shall line up within 11 in. (280 mm) of the longitudinal centerline of the cot.

Substantiation: As written, the primary patient care seat could be a couple feet from the patient cot and be "not less than 6 inches" away. I believe the intent is to be able to position the seat close to the cot.

Words within the requirements do not need to be capitalized and have been changed. Other changes are editorial.

Committee Meeting Action: Accept in Principle

Renumber as shown:

~~6.24.7~~ **6.24.8 Access to Patient.**

~~6.24.7.1~~ **6.24.8.1** If the designated primary patient care seat is at the patient torso position it shall be capable of being adjusted such that the nearest edge of the seat bottom cushion is within ~~can be positioned no less than~~ 6 in. (152 mm) of from the nearest edge of the patient cot.

~~6.24.7.2~~ **6.24.8.2** The fore-aft position of the seat shall line up within 6 in. (152 mm) of the centerline of the torso as defined by the cot manufacturer.

~~6.24.7.3~~ **6.24.8.3** If the designated primary patient care seat is at the patient head position it shall be capable of being adjusted such that the nearest edge of the seat bottom cushion is within ~~positioned no less than~~ 6 in. (152 mm) of from the nearest edge of the patient cot.

~~6.24.7.4~~ **6.24.8.4** If the designated primary patient care seat is the patient head position, the longitudinal centerline of the seat shall line up within 11 in. (280 mm) of the longitudinal centerline of the cot.

Committee Statement: The committee renumbered section because previous logs deleted a prior section and clarified the longitudinal centerline alignment as it pertains to the seat at the patient head position.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-693 Log #7 **Final Action: Accept in Principle**
(6.24.7.1)

Submitter: Dan O'Brien, Malley Industries, Inc.

Recommendation: Revise text to read as follows:

"Primary patient care seat is at the..."

Substantiation: To designate the location of the seat relative the patient.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-692 (Log #1630).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-694 Log #1295 **Final Action: Reject**
(6.24.7.1)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

~~6.24.7.1~~ If the designated Primary Patient Care Seat is the Patient Torso Position it shall be capable of being adjusted such that the nearest edge of the seat bottom cushion can be positioned no less than 6 in. (152 mm) from the nearest edge of the Patient Cot.

Substantiation: It is unwise to require an adjustable seat in the Patient Torso Position. The adjustable seat requires significantly more depth than a bench seat and therefore restricts working space between the seat and the Patient Cot.

Committee Meeting Action: Reject

Committee Statement: The adjustable seat in place of the squad bench is only required if the squad bench is the designated primary car position. If the purchaser designates another position as the primary care position then this standard allows a standard squad bench.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-695 Log #8 **Final Action: Accept in Principle**
(6.24.7.2)

Submitter: Dan O'Brien, Malley Industries, Inc.

Recommendation: Revise text to read as follows:

"Primary patient care seat is at the..."

Substantiation: To designate the location of the seat relative the patient.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-692 (Log #1630).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-696 Log #1296 **Final Action: Reject**
(6.24.7.2)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

~~6.24.7.2~~ The fore-aft position of the seat shall line up within 6 in. (152 mm) of the centerline of the torso as defined by the cot manufacturer.

Substantiation: The position of the CPR seat should be left for the customer to specify.

In any case, the spec should not make itself dependent upon dimensions from the cot manufacturer.

Committee Meeting Action: Reject

Committee Statement: The committee feels it is essential that one seating position in the ambulance will allow the EMT to get close to the patient while still being buckled in.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-697 Log #1407 **Final Action: Reject**
(6.24.7.2)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.24.7.2: The fore-aft position of the seat shall line up within 12 in. (305 mm) of the centerline of the torso as defined by the cot manufacturer ambulance patient cot backrest hinge when secured in its fastening device.
Substantiation: The backrest hinge is a more consistently defined reference point. +/- 12" allows for more patient cot variety and fastener location differences from vehicle to vehicle.

Committee Meeting Action: Reject

Committee Statement: Current wording describes the intent of the committee.
Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-698 Log #1297 **Final Action: Accept in Principle**
(6.24.7.3)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.24.7.3 If the designated Primary Patient Care Seat is the Patient Head Position it shall be capable of being adjusted such that the nearest edge of the seat bottom cushion positioned no less than 6 in. (152 mm) from the nearest edge of the Patient Cot.

Substantiation: The wording is unclear. Is this trying to say that the seat shall be capable of being positioned within 6 in. of the cot, or is the intent that the seat shall not be capable of being positioned within 6 in. of the cot?

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-692 (Log #1630).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-699 Log #1298 **Final Action: Accept in Principle**
(6.24.7.4)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.24.7.4 If the designated Primary Patient Care Seat is the Patient Head Position, the longitudinal centerline of the seat shall line up within 11 in. (280 mm) of the longitudinal centerline of the cot.

Substantiation: Clarify that the longitudinal centerline alignment pertains to the seat at the patient head position.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-692 (Log #1630).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-700 Log #573 **Final Action: Accept in Principle**
(6.24.8.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~Any seat capable of transporting a child or infant shall not be oriented in a side facing direction during transport.~~

Substantiation: The proposed standard is an operational policy issue not a standard. NHTSA recently released guidance on the preferred methods to accommodate child restraint devices. Any proposal needs to be in line with those guidelines. This should be deleted and in accord with the NHTSA document.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-702 (Log #CP17).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-701 Log #1266 **Final Action: Accept in Principle**
(6.24.8.1)

Submitter: Nadine Levick, EMS Safety Foundation

Recommendation: Delete text as follows:

~~6.24.8.1 Any seat capable of transporting a child or infant shall not be oriented in a side facing direction during transport.~~

Substantiation: The ambulance interior is a system - and the safety of the occupants is interrelated. Positioning the child on the rear facing Captains chair places the child in a hazardous position, and also forces other adults occupants into more hazardous positions. The technical data suggests that there is no evidence to support 6.24.8.1, and that this requirement may make the ambulance environment more unsafe for the child passenger and other occupants.

see: Levick NR, MD MPH, Grzebieta R, BE MEngSci PhD, Ambulance vehicle crashworthiness and passive safety design: A comparative vehicle evaluation, Society of Automotive Engineering, ComVec Technical paper, 2008-01-2695, www.sae.org

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-702 (Log #CP17).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-702 Log #CP17 **Final Action: Accept**
(6.24.8.1)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise and renumber as shown:

~~6.24.8~~ **6.24.9 Child Seating Restraints.**

~~6.24.8.1~~ **6.24.9.1** Any seat with a built-in system suitable for capable of transporting a child or infant shall not be oriented in a side facing direction during transport.

~~6.24.8.2~~ **6.24.9.2** If the purchaser specifies that the ambulance is designed to will transport infants in a seat it the ambulance shall include an Infant Restraint Seat or have provisions to accommodate an infant car seat.

~~6.24.8.3~~ **6.24.9.3** If the purchaser specifies that the ambulance is designed to will transport children in a seat it shall include a Child Restraint Seat or have provisions to accommodate a child car seat.

Substantiation: The text specifies the mounting orientation of any seat with a built-in child restraint. These seats are currently available on the market. This change clarifies the intent.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-703 Log #747 **Final Action: Reject**
(6.24.8.2)

Submitter: John J. Russell, Cape County Private Ambulance Service, Inc.

Recommendation: Delete the following text:

~~If the purchaser specifies that the ambulance will transport infants in a seat it shall include an Infant Restraint Seat or have provisions to accommodate an infant seat.~~

Substantiation: Any seat that is meant to be used to transport an infant or child must meet the child restraint standards of FMVSS 213. If we put kids in ambulance seats the least we can expect is that they will be in a seat as safe as one bought at Walmart or Target!

Committee Meeting Action: Reject

Committee Statement: The standard is providing for accommodation to hold the child seat.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-704 Log #1299 **Final Action: Accept in Principle**
(6.24.8.2)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.24.8.2 If the purchaser specifies that the ambulance will transport infants in a seat it the ambulance shall include an Infant Restraint Seat or have provisions to accommodate an infant seat.

Substantiation: Clarify the ambiguous reference.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-702 (Log #CP17).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-705 Log #1631 **Final Action: Accept in Principle**
(6.24.8.2 and 6.24.8.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.24.8.2 and 6.24.8.3 to read as follows:

6.24.8.2 If the purchaser specifies that the ambulance is designed to will transport infants in a seat it shall include an infant restraint seat or have provisions to accommodate an infant car seat.

6.24.8.3 If the purchaser specifies that the ambulance is designed to will transport children in a seat it shall include a child restraint seat or have provisions to accommodate a child car seat.

Substantiation: This is a minimum standard for ambulances, not a purchase specification. The ambulance manufacturer does not always know who is going to be transported but can design the ambulance for infant or child transport. It is important for the user to know if the ambulance can transport infants or children in a seat and the committee should consider requiring a sign, label or other documentation be provided with the ambulance that includes any special instructions on how to accomplish such transport.

The word “car” is being added as otherwise a seat that is inappropriate for use in transport could be accommodated.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-702 (Log #CP17).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-706 Log #748 **Final Action: Reject**
(6.24.8.3)

Submitter: John J. Russell, Cape County Private Ambulance Service, Inc.

Recommendation: Delete the following text:

~~If the purchaser specifies that the ambulance will transport children in a seat it shall include a Child Restraint Seat or have provisions to accommodate a child seat.~~

Substantiation: Any seat that is meant to be used to transport an infant or child must meet the child restraint standards of FMVSS 213. If we put kids in ambulance seats the least we can expect is that they will be in a seat as safe as one bought at Walmart or Target!

Committee Meeting Action: Reject

Committee Statement: The standard is providing for accommodation to hold the child seat.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-707 Log #1209 **Final Action: Accept in Principle**
(6.24.8.3)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

~~If the purchaser specifies that the ambulance will transport children in a seat it shall include a Child Restraint Seat or have provisions to accommodate a child seat.~~

Substantiation: The proposed standard is an operational policy issue not a standard. NHTSA recently released guidance on the preferred methods to accommodate child restraint devices. Any proposal needs to be in line with those guidelines. This should be deleted and deferred to the NHTSA document.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-702 (Log #CP17).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-708 Log #1300 **Final Action: Accept in Principle**
(6.24.8.3)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.24.8.3 If the purchaser specifies that the ambulance will transport children in a seat it the ambulance shall include a Child Restraint Seat or have provisions to accommodate a child seat.

Substantiation: Clarify the ambiguous reference.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-704 (Log #1299).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-709 Log #926 **Final Action: Reject**
(6.25)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: The performance standard for this section is inadequate.

The patient and/or patient cot becoming a projectile represents one of the largest threats to patients and providers during a sudden deceleration event. Furthermore, the unplanned exit of a patient from a cot restraint system has been further documented to have led to injury and death of patients and providers. As such, we recommend that the standard include performance-based requirements for patient restraint to the cot, cot retention, and cot hardware retention. The current standard does not indicate a G-force based performance requirement, nor does it indicate minimum acceptable patient restraint. The standard should further apply the same performance requirements to all cot mounting hardware.

Substantiation: A mbulance crash testing performed to date and ambulance crash analysis has indicated a propensity of cots to become dislodged during a collision. Data on this topic can be found at: http://www.ems.gov/workforce/sci_program.html and <http://www.objectivesafety.net/PDFarticlesgallery.htm>.

EMS providers have also been injured or killed by patients who have become projectiles during sudden deceleration. Unplanned exit or escape from cot restraint systems has also allowed patients to assault providers and to exit the ambulance while in motion of resulting in death of the patient.

Committee Meeting Action: Reject

Committee Statement: The committee does not disagree with the submitters opinions, but this comment does not provide any specific recommendation wording that the committee can consider. Testing has been completed that demonstrates a need, but the committee does not feel that there is sufficient testing to craft a good performance standard yet. NIOSH has further testing scheduled and the committee expects to tackle this issue more directly during the next revision cycle when the results of this testing can be considered.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-710 Log #940 **Final Action: Reject**
(6.25)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: The performance standard for this section is inadequate. The patient and/or patient cot becoming a projectile represents one of the largest threats to patients and providers during a sudden deceleration event. Furthermore, the unplanned exit of a patient from a cot restraint system has been further documented to have led to injury and death of patients and providers. As such, we recommend that the standard include performance-based requirements for patient restraint to the cot, cot retention, and cot hardware retention. The current standard does not indicate a G-force based performance requirement, nor does it indicate minimum acceptable patient restraint. The standard should further apply the same performance requirements to all cot mounting hardware.

Substantiation: Ambulance crash testing performed to date and ambulance crash analysis has indicated a propensity of cots to become dislodged during a collision. Data on this topic can be found at: http://www.ems.gov/workforce/sci_program.html and <http://www.objectivesafety.net/PDFarticlesgallery.htm>.

EMS providers have also been injured or killed by patients who have become projectiles during sudden deceleration. Unplanned exit or escape from cot restraint systems has also allowed patients to assault providers and to exit the ambulance while in motion of resulting in death of the patient.

Committee Meeting Action: Reject

Committee Statement: The committee does not disagree with the submitters opinions, but this comment does not provide any specific recommendation wording that the committee can consider. Testing has been completed that demonstrates a need, but the committee does not feel that there is sufficient testing to craft a good performance standard yet. NIOSH has further testing scheduled and the committee expects to tackle this issue more directly during the next revision cycle when the results of this testing can be considered.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-711 Log #160 **Final Action: Reject**
(6.25.1)

Submitter: Timothy J. Crowley II, Crowley II Consulting, LLC

Recommendation: This section should include specific locations for anchoring the patient cot bolts. This section should read “in addition to the minimum force requirements, all bolts anchoring the patient cot shall be fastened to the frame or sub-frame of the vehicle chassis”.

Substantiation: Specifically, there should be wording calling for the anchor bolts to fasten to a portion of the frame rail or sub-frame. Most cots are fastened to the body/floor of the patient compartment. No actual stress testing has been performed to substantiate how much force can be applied to these points.

Committee Meeting Action: Reject

Committee Statement: The standard as written is performance based and the litter retention hardware and the material it is anchored to must withstand the same force whether it is tied directly to the chassis frame or not.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-712 Log #471 **Final Action: Accept**
(6.25.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.25.1 Each Patient Cot retention system shall not fail or release when subjected to the cot manufacturers recommended load or a minimum force of 2,200 lb (998 kg) applied in the longitudinal (fore and aft), lateral, and vertical direction.

Substantiation: In the event of a rear end collision the litter may become dislodged. Testing the retention system in the longitudinal aft would validate it would remain attached.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-713 Log #736 **Final Action: Accept in Principle**
(6.25.1)

Submitter: Jeffrey A. Pike, Biomechanics Consulting, Inc.

Recommendation: Revise text to read as follows:

6.25.1 Each Patient Cot retention system shall not fail or release when subjected to the greater of: 1) the cot manufacturers recommended load or 2) a minimum force of 2,200 lb. (998 kg) applied in the longitudinal, lateral, and vertical direction.

Substantiation: This clarifies which of the two values needs to be met.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-714 (Log #1632).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-714 Log #1632 **Final Action: Accept**
(6.25.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.25.1 to read as follows:

6.25.1 Each P patient Cot retention system shall not fail or release when subjected to the greater of the cot manufacturers recommended retention force load or a minimum retention force of 2,200 lbf (9786 N) (998 kg) applied in the longitudinal, lateral, and vertical direction.

Substantiation: “Retention force” is a more appropriate description than “load” for what is to be measured. The appropriate conversion for pounds force is Newtons.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-715 Log #88 **Final Action: Accept in Principle**
(6.26)

Submitter: Michael Gardner, WARsaw - Lincoln Ambulance District

Dan Albrecht, Tri-Township EMS (Log #898)

Charles W. Anderson, Callaway County Ambulance District (Log #1740)

Charles Ansley, MedFlight of Ohio (Log #810)

Tony Anteau, Medcare Ambulance (Log #785)

Scott Ballard, Ballard Ambulance (Log #999)

Marcus Barnett, Logan Co. EMS (Log #753)

Michael A. Barrow, Mobile Medical Response, Inc. (Log #800)

Bob Barry, California Ambulance Association (Log #882)

David Batson, MedRide Oklahoma Critical Care Transport (Log #867)

Shawn Baumgartner, Valley Ambulance Services, Inc. (Log #1004)

Jeffrey D. Benson, Millcreek Paramedic Service (Log #213)

Homer Berlew, Trans-Med Ambulance, Inc. (Log #1320)

Lori Blackburn, Fayette County Memorial Hospital EMS (Log #1160)

Jim Borkowski, Medstar Ambulance (Log #679)

Richard Bowers, Exetor Ambulance (Log #129)

Dymond Bradley, Atchison-Holt Ambulance District (Log #1711)

Gene Bradley, Professional Medical Transportation Inc. (Log #1717)

Ramona M. Bright, Tri-Community Ambulance (Log #820)

Charles P. Bryan, Jr., Tri-Community South EMS (Log #149)

Larry Burton, Adair County Ambulance District (Log #598)

Donald DeReamus, Suburban Emergency Medical Services (Log #862)

Jerry Domidion, Jessamine County EMS (Log #1436)

Jerry Donahue, Greater Columbia Medical Transport Service LP (Log #1135)

Jim Duke, Ohio County EMS (Log #755)

Diane Eberdt, Lodi Area EMS (Log #1468)

Pat Edwards, White River Valley Ambulance (Log #269)

Patrick Egan, Allina Medical Transportaiton (Log #1735)

Alexander Fairfield, Northglenn Ambulance (Log #178)

Jack Fisher, Medic 1 Ambulance (Log #1140)

Charmian Foster, Medical Transportation Association of New Jersey (Log #1170)

Russell R. Fowler, Dekalb Ambulance Service (Log #1175)

Linda Frederiksen, Medic EMS (Log #770)

JD Fuiten, Metro West Ambulance (Log #485)

JD Fuiten, Pacific West Ambulance (Log #491)

JD Fuiten, Medix Ambulance (Log #496)

JD Fuiten, Bay Cities Ambulance (Log #501)

Mary Ann Gingrich, Medstar Ambulance (Log #303)

Ben Gresham, Pafford Medical Center (Log #1150)

Lois Griggs, Courtesy Ambulance Inc. (Log #1752)

William P. Grubb, Star EMS (Log #827)

Douglas Gruenwald, Beaumont Medical Transportation (Log #805)

Nicole Gullickson, Ameny Area EMS (Log #892)

Michael Hall, Nature Coast EMS (Log #628)

Curtis Halmrast, North Dakota EMS Association (Log #1345)

Steven Hare, Levittown-Fairless Hills Rescue Squad (Log #144)

William E. Hathaway, Town of Bennington Rescue Squad, Inc. (Log #760)

Nora Helfrich, Tri-Community South EMS (Log #974)

Ralph Hellebusch, Warren County Ambulance District (Log #1789)

Zack Helton, Pafford Medial Service (Log #832)

Robert Herceg, Ambulance Service, Inc. (Log #209)

Tony Hickerson, Central EMS (Log #775)

Scott Hicks, Medstar Ambulance (Log #694)

John Hill, Iowa EMS Association (Log #666)

Jean M. Holesko, Gillespie - Benld Area Ambulance Service (Log #168)

Mike Howard, Galesburg Hospitals' Ambulance Service (Log #780)

Jon Howell, Huntsville Emergency Medical Service, Inc. (Log #1453)

Steven Hubbard, Scott & White EMS (Log #877)

Victor Incorvaia, Pulse Medical Transportation (Log #979)

Michael Jambrosic, Champion EMS (Log #314)

Chad Jay, Kimball Health Services EMS (Log #1458)

Howard Kaplan, Exceptional Medical Transportation (Log #908)

Glenn Kasprzyk, Life Line Ambulance Service (Log #1447)

Conrad Kearns, Community EMS (Log #872)

Earl Kossuth, TransCare Corp. (Log #765)

Philip Koster, Community Ambulance Service (Log #994)

Joe Kovacs, Medstar Ambulance (Log #684)

Steve Long, Pleasant Hill Fire Protection District (Log #138)

Brian Lovellette, Michigan Association of Ambulance Services (Log #1722)

Mark Mallory, Titus Regional Medical Center EMS (Log #259)

Michael J. Markilinski, Guardian Angel Ambulance Services, Inc. (Log #109)

William McCarthy, Coastal Health Systems of Brevard (Log #903)

James P. McPartlon, III, Mohawk Ambulance Service (Log #253)

Mark D. Meijer, Life EMS Ambulance (Log #852)

Randy Meininger, Regional West Medical Center (Log #1155)

Michael Mellon, Emergency Medical Foundation, Inc. (Log #893)

Lyle L. Meyers, Trinity Ambulance Service (Log #989)

Jim Miara, Kings Daughters Medical Transport (Log #960)

Kolby Miller, Medstar Ambulance (Log #699)

Eric Mills, University Hospital Ambulance Service (Log #1727)

Terry Nichols, DMCAre Express (Log #815)

Jay O'Keefe, PRN Medical Transport (Log #1442)

Joseph C. Olla, Meda-Care Ambulance Corp. (Log #1325)

Bonnie Page, Western Berks Ambulance Assoc. (Log #114)

Michael Paradis, Newport Ambulance Service, Inc. (Log #1803)

Paul R. Patrick, State of Utah, Bureau of EMS and Preparedness (Log #633)

Mark Pedgwaite, Lyndon Rescue, Inc. (Log #151)

Josef H. Penner, Mecklenburg EMS Agency (Log #320)

William H. Pennington, Cameron County Ambulance Service, Inc. (Log #173)

Anne Red, Sinor Emergency Medical Service, Inc. (Log #593)

Johnny L. Red, Sinor Emergency Medical Service (Log #603)

Gregory A. Reid, React EMS (Log #1359)

Aaron Reinert, Lakes Region EMS (Log #790)

Jennifer Revels, Pafford Medial Service (Log #837)

Dennis Reynolds, VBEMS, Inc. (Log #1330)

S. Scott Rhoat, Bellefonte Emergency Medical Services, Inc. (Log #1463)

Eugene Richardson, Sullivan County Ambulance District (Log #1794)

Todd Runge, Swea City Ambulance (Log #964)

John J. Russell, Cape County Private Ambulance Service, Inc. (Log #825)

Tom Schmiedeknecht, Professional Med Team, Inc. (Log #795)

Eddie Sims, NRHS-EMSSat EMS (Log #857)

Ron Slagell, LifeCare Ambulance Service (Log #623)

Brent Smith, Hopkins County EMS (Log #224)

Julie Smith, Rural Nebraska Regional Ambulance Network (RNRAN) (Log #1145)

Debra Sokota, New Paltz Rescue Squad (Log #278)

Christopher H. Stawasz, Rockingham Regional Ambulance, Inc. (Log #1340)

Terry Stecker, Siouxland Paramedics Inc. (Log #842)

Anthony Stevens, Professional Sales & Service (Log #887)

Ronald W. Thackery, American Medical Response, Inc. (Log #572)

Ronald W. Thackery, American Medical Response, Inc. (Log #608)

Tom Tornstrom, Tri-State Ambulance (Log #155)

Patrick Trinko, Shawano Ambulance Service (Log #247)

Scott Tucker, Canyon County Paramedics (Log #638)

Randy VanderHeiden, Bellingham Fire Dept. (Log #618)

Gabe VanVactor, ITS Emergency Medical Services (Log #613)

Michael Vatch, SeniorCare EMS (Log #1335)

Marianne Venditti, Medstar Ambulance (Log #689)

Charles Wadsworth, Pafford Medical Service (Log #1165)

Jo Walter, Waverly Health Center (Log #1476)

Faril A. Ward, Trans-Care, Inc. (Log #1350)

Gary Watters, AMED (Log #270)

Scott Welker, Uwchlan Ambulance Corps. (Log #120)

Jerry Whetstone, Altoona Fire Department (Log #847)

Kelly Whitehead, North Flight EMS (Log #969)

Gary Wingrove, Gold Cross/Mayo Clinic Medical Transport (Log #1757)

Jerry Zapolnik, Monroe Community Ambulance (Log #219)

Jerry Zapolnik, Huron Valley Ambulance (Log #1765)

Jerry Zapolnik, Jackson Community Ambulance (Log #1770)

Recommendation: Revise text to read as follows:

Seat Belt Indication: This section should be deleted in its entirety.

Substantiation: The proposed standard is redundant. Most state legislate seat belt indication. Operational policy issue not standard. The technology to meet these requirements does not exist and has not been scientifically proven to improve safety, operational efficiency or patient care. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: This section should NOT be deleted. The "substantiation" supplied is WRONG. 1. There are companies that have this technology (IE Fire Research).

2. NOONE disputes seatbelting in any vehicle, in any seating position, improves survivability. EVERY article ever written about EMT deaths in the patient compartment sight the #1 action short of avoiding the accident that would save lives and reduce serious injuries would be to be restrained. A seatbelt warning system in the PATIENT COMPARTMENT, will be affective, as they were in automobiles, to get people to buckle up more.

3. Current patient compartment design options enable EMTs to do patient care while restrained.

4. Deleting a restraint requirement / standard for all Fire fighters and EMTs is not consistent with the need 1911

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-716 Log #93 **Final Action: Accept in Principle (6.26)**

Submitter: Patrick Ryan, Madison, WI

Recommendation: Revise text to read as follows:

Seat Belt Indication: This section should be deleted in its entirety.

Substantiation: The proposed standard is redundant. Most state legislate seat belt indication. Operational policy issue not standard. The technology to meet these requirements does not exist and has not been scientifically proven to improve safety, operational efficiency or patient care. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-717 Log #94 **Final Action: Accept in Principle (6.26)**

Submitter: Ryan Hellebusch, Warren County Ambulance District

Recommendation: Revise text to read as follows:

Seat Belt Indication: This section should be deleted in its entirety.

Substantiation: The proposed standard is redundant. Most state legislate seat belt indication. Operational policy issue not standard. The technology to meet these requirements does not exist and has not been scientifically proven to improve safety, operational efficiency or patient care. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-718 Log #103 **Final Action: Accept in Principle (6.26)**

Submitter: Al Maletto, Johnsonburg Fire Dept. Ambulance

Recommendation: Revise text to read as follows:

Seat-Belt Indication: This section should be deleted in its entirety.

Substantiation: The proposed standard is redundant. Most state legislate seat belt indication. Operational policy issue not standard. The technology to meet these requirements does not exist and has not been scientifically proven to improve safety, operational efficiency or patient care. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-719 Log #108 **Final Action: Accept in Principle (6.26)**

Submitter: Timothy Hoffman, Good Samaritan Hospital

Recommendation: Revise text to read as follows:

Seat-Belt Indication: This section should be deleted in its entirety.

Substantiation: The proposed standard is redundant. Most state legislate seat belt indication. Operational policy issue not standard. The technology to meet these requirements does not exist and has not been scientifically proven to improve safety, operational efficiency or patient care. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-720 Log #182 **Final Action: Accept in Principle (6.26)**

Submitter: Andrew Moffitt, Gold Cross Ambulance

Recommendation: ~~Seat-Belt Indication:~~ This section should be deleted in its entirety.

Substantiation: The proposed standard is redundant. Most state legislate seat belt indication. Operational policy issue not standard. The technology to meet these requirements does not exist and has not been scientifically proven to improve safety, operational efficiency or patient care. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-721 Log #187 **Final Action: Accept in Principle (6.26)**

Submitter: James Finger, Regional Ambulance Service, Inc.

Recommendation: ~~Seat-Belt Indication:~~ This section should be deleted in its entirety.

Substantiation: The proposed standard is redundant. Most state legislate seat belt indication. Operational policy issue not standard. The technology to meet these requirements does not exist and has not been scientifically proven to improve safety, operational efficiency or patient care. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-722 Log #194 **Final Action: Accept in Principle (6.26)**

Submitter: Stephen Williamson, EMSA

Recommendation: ~~Seat-Belt Indication:~~ This section should be deleted in its entirety.

Substantiation: The proposed standard is redundant. Most state legislate seat belt indication. Operational policy issue not standard. The technology to meet these requirements does not exist and has not been scientifically proven to improve safety, operational efficiency or patient care. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-723 Log #195 **Final Action: Accept in Principle (6.26)**

Submitter: Leonard Marquez, SeniorCare EMS

Recommendation: ~~Seat-Belt Indication:~~ This section should be deleted in its entirety.

Substantiation: The proposed standard is redundant. Most state legislate seat belt indication. Operational policy issue not standard. The technology to meet these requirements does not exist and has not been scientifically proven to improve safety, operational efficiency or patient care. Any device of this type should be produced and installed by the OEM.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-724 Log #231 **Final Action: Accept in Principle**
(6.26)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Delete the following text:

6.26 **Seatbelt Indication:**

Substantiation: Delete this entire section. A person doing definitive patient care can not be sitting in one location while transporting to the hospital. A person doing CPR is standing, with someone hopefully supporting them. A patient needs to have their injuries rechecked several times during the ride to the hospital. This cannot be done seated. Attendants must be able to move between the head and feet of a patient.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-725 Log #953 **Final Action: Accept in Principle**
(6.26)

Submitter: Kevin Sullivan, Town of Enfield - EMS Division

Recommendation: Please remove the seat belt warning indication system from this standard.

Substantiation: Seat belts are extremely important for safety, but there are legitimate times that occur very frequently where EMS providers must remove their seat belts. Having a system that provides an audible warning whenever someone is out of their seat belt is just adding a noise to the back of the ambulance that will always be going off, causing patients and providers a lot of frustration.

I think the better idea here would be to have a visual advisory to the driver that advises the driver who IS wearing a seat belt at a given time. The driver already knows how many people are in the ambulance, so he or she can easily deduce how many people are not wearing their seat belts. There's no need for an associated audible warning device.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-726 Log #1408 **Final Action: Reject**
(6.26)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.26 **Seat-Belt Occupant Restraint Indication**

Substantiation: Changed wording to more generic occupant restraint to allow for alternate methods of restraint.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-727 Log #1543 **Final Action: Accept in Principle**
(6.26)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.26.2 A seat belt warning system shall be provided for the patient compartment.

6.26.3 The warning system shall consist of an audible warning device that can be heard at all patient compartment seating positions designed to be occupied while the vehicle is in motion and a visual display visible to the driver showing the condition of each seating position.

Substantiation: If this requirement stays as a minimum, it needs to be contained to the patient compartment seats. The driver can readily tell if the passenger seat is occupied and the occupant belted. Adding the sensors needed for this to the cab seats and restraints will require pull testing for each seating location. Plus, some models incorporate pyrotechnic seat belt retractors that are tuned to airbag deployment, and it is not likely that the workings of these systems would be shared with aftermarket prospects for them to develop compatible belt systems with the additional sensors for belt latch and seat occupation. For the seats in the patient compartment, this is much more technically feasible.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-728 Log #1633 **Final Action: Reject**
(6.26)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Move this requirement to chapter 4 or 5

Substantiation: Chapter 6 is requirements for patient compartment. This requirement is broader than that as it includes the cab area.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-729 Log #CP18 **Final Action: Accept**
(6.26)

Submitter: Technical Committee on Ambulances,

Recommendation: Delete the following text:

6.26 **Seat Belt Indication:**

6.26.1 6.24.3.3 Signs that read "Occupants Must be Seated and Belted When Ambulance Is in Motion" shall be visible from each seated position.

6.26.2 A seat belt warning system shall be provided:

6.26.3 The warning system shall consist of an audible warning device that can be heard at all seating positions designed to be occupied while the vehicle is in motion and a visual display visible to the driver showing the condition of each seating position.

6.26.4 The warning shall be activated anytime the parking brake is released or the automatic transmission is not in park.

6.26.5 The seat position display shall indicate conditions in accordance with Table 6.26.5:

Table 6.26.5 Display for Seating System

Display Indication	Seat-Belt	Seat-Sensor
Affirmative indication Buckled Senses occupant	Negative indication Buckled	No occupant
Negative indication Unbuckled Senses occupant	Dark Unbuckled	No occupant

6.26.6 The display indication shall be permitted to consist of lights, text, graphical indicators, digital displays, or other methods.

6.26.7 The warning system shall not show an affirmative indication unless it has determined that the seat was occupied before the seat belt was buckled.

Substantiation: The audio or visual warnings required by this concept may create distraction and confusion while EMSP are working on the patient. Annex on the use of monitoring systems addresses the recommendation to have some sort of monitoring method.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

PRENTISS, S.: another minor fix/movement towards safety - there are indicator lights when outside compartments are open that are directly tied to safety, I don't see the difference.

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-730 Log #1210 **Final Action: Reject**
(6.26.1)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

Signs that read “Occupants ~~Must~~ be Seated and Belted When Ambulance Is in Motion” shall be visible from each seated position.

Substantiation: The proposed standard is redundant. Most state legislate seat belt indication. Operational policy issue not standard.

Committee Meeting Action: Reject

Committee Statement: The committee believes this is a good label to have.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-731 Log #1409 **Final Action: Reject**
(6.26.1)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.26.1 Signs that read “Occupants ~~and Equipment~~ Must be Seated and Belted ~~Restrained~~ When Ambulance is in Motion” shall be visible from each seated position.

Substantiation: Changed wording to more generic occupant restraint to allow for alternate methods of restraint. Additionally, loose equipment is equally dangerous to the internal ambulance environment.

Committee Meeting Action: Reject

Committee Statement: Recommendation changes the intent of the specification.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-732 Log #1817 **Final Action: Reject**
(6.26.1)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

6.26.1 Signs that read “Occupants ~~Must~~ Should be Seated and Belted When Ambulance Is in Motion” shall be visible from each seated position.

Substantiation: EMT’s need to be able to move to reach different supplies and/or equipment as patient condition changes en route to receiving facilities.

Committee Meeting Action: Reject

Committee Statement: “Must” is the term the committee wants.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-733 Log #1843 **Final Action: Reject**
(6.26.1)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

6.26.1 Signs that read “Occupants ~~Must~~ Should be Seated and Belted When Ambulance Is in Motion” shall be visible from each seated position.

Substantiation: EMT’s need to be able to move to reach different supplies and/or equipment as patient condition changes en route to receiving facilities.

Committee Meeting Action: Reject

Committee Statement: “Must” is the term the committee wants.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-734 Log #76 **Final Action: Accept in Principle**
(6.26.2)

Submitter: David B. Cole, Life Line Emergency Vehicles

Recommendation: Revise text to read as follows:

6.26.2 A seat belt warning system shall be provided in the cab portion of the vehicle.

Substantiation: The problem is in the back of the ambulance module. Again this is an ambulance and if a seatbelt indicator is required how does an EMS provider complete their job? Does the ambulance stop everytime the attendant has to perform a procedure? Lets really consider the cost benefit and the overall effectiveness of this concept.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: Accepting in principal would means seatbelt warning would only available in the cab. This will not affect seatbelt usage in the patient compartment. Current patient compartment design options enable wearing restraints while providing patient care. Wearing seatbelts is the number one action that will save EMTs in the patient compartment, second only to not having the accident.

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-735 Log #81 **Final Action: Accept in Principle**
(6.26.2)

Submitter: Brad Elliott, Intertek Industrial Corp.

Recommendation: Revise text to read as follows:

A seat belt warning system shall be provided for designated seating locations in the rear of the vehicle to provide driver awareness of passengers in the rear of the vehicle.

Substantiation: The original statement should not included front seats - since Vehicle Manufactures I.E. Ford, Chevy, Dodge etc do not provide the appropriate buckle assemblies in these locations to monitor the seating locations properly.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-736 Log #708 **Final Action: Accept in Principle**
(6.26.2)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Delete seat belt warning system

Substantiation: Adds a lot of expense and possible maintenance down the road. Better training for crew members would be more efficient. People will always figure out how to circumvent the system.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: See My Explanation of Negative on 1917-716 (Log #93).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-737 Log #1088 **Final Action: Accept in Principle**
(6.26.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.26.2 A seat belt warning system shall be provided for the patient compartment.

Substantiation: Not all OEM seats can be monitored with today's after market systems.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-738 Log #1211 **Final Action: Accept in Principle**
(6.26.2)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

A seat belt warning system shall be provided.

Substantiation: The proposed standard is redundant. Most state legislate seat belt indication. Operational policy issue not standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: Agreeing in principle. says delete seatbelt warning system shall be provided. This is wrong and will continue killing EMTs. Substantiation provided is WRONG Most state legislation exempts ambulances and emergency vehicles.

THIS IS WHAT WE HAVE TODAY and 70 EMTs per year are dying.. time for a meaningful change.

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-739 Log #1410 **Final Action: Accept in Principle**
(6.26.2)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.26.2 A seat belt occupant restraint warning system shall be provided.

Substantiation: Changed wording to more generic occupant restraint to allow for alternate methods of restraint.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-740 Log #1683 **Final Action: Accept in Principle**
(6.26.2)

Submitter: Peter I. Dworsky, Monoc

Recommendation: 6.26.2 Does the current technology exist for this requirement?

Substantiation: None given.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-741 Log #1818 **Final Action: Accept in Principle**
(6.26.2 and 6.26.3)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

6.26.2 A seat belt warning system shall be provided for all positions in the driver compartment.

6.26.3 The warning system shall consist of an audible warning device that can be heard at all seating positions designed to be occupied in the drivers compartment while the vehicle is in motion ~~and a visual display visible to the driver showing the condition of each seating position.~~

Substantiation: The driver has enough to do without having to listen to a warning device and/or looking at a display every time that an EMT needs to access a compartment or do CPR. For the driver to hear the warning device would be VERY distracting when driving emergent. Also in states that require the capability to transport a second patient the board/stretcher that the patient is on is placed on the squad bench which is also an area that EMT's sometimes sit and would have to have sensors the way this draft is written which would then cause the warning device to be activated.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

TANSEY, W.: Accepting in principal would means seatbelt warning would only available in the cab. This will not affect seatbelt usage in the patient compartment. Current patient compartment design options enable wearing restraints while providing patient care. Wearing seatbelts is the number one action that will save EMTs in the patient compartment, second only to not having the accident.

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-742 Log #1844 **Final Action: Accept in Principle**
(6.26.2 and 6.26.3)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

6.26.2 A seat belt warning system shall be provided for all positions in the driver compartment.

6.26.3 The warning system shall consist of an audible warning device that can be heard at all seating positions designed to be occupied in the drivers compartment while the vehicle is in motion ~~and a visual display visible to the driver showing the condition of each seating position.~~

Substantiation: The driver has enough to do without having to listen to a warning device and/or looking at a display every time that an EMT needs to access a compartment or do CPR. For the driver to hear the warning device would be VERY distracting when driving emergent. Also in states that require the capability to transport a second patient the board/stretcher that the patient is on is placed on the squad bench which is also an area that EMT's sometimes sit and would have to have sensors the way this draft is written which would then cause the warning device to be activated.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-743 Log #49 **Final Action: Accept in Principle**
(6.26.3)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Revise text to read as follows:

6.26.3 The warning system shall consist of ~~an~~ a momentary audible warning device that can be heard at all seating positions designed to be occupied while the vehicle is in motion and a visual display visible to the driver showing the condition of each seating position.

Substantiation: There are times when patient care may require an attendant to be unbuckled. If the auditory device is constant it will serve as a distraction to the driver creating a safety hazard. If the auditory alarm is momentary then the alarm will go silent and serve the same purpose alerting the driver to an unbuckled occupant.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18)

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-744 Log #69 **Final Action: Accept in Principle**
(6.26.3)

Submitter: William von Zehle, Jr., Wilton Emergency Medical Services

Recommendation: The warning system shall consist of an audible warning device that can be heard at all seating positions designed to be occupied while the vehicle is in motion and a visual display visible to the driver showing the condition of each seating position.

Substantiation: Clarification requested. Does the system include the squad bench? The crew often has to move from one position to another while working on patients. Having the system include the squad bench will result in activation of the system when personnel unbuckle their belts to move to another position or when equipment is placed on the bench (e.g. *Lifepak 12*, etc.)

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-745 Log #1021 **Final Action: Accept in Principle**
(6.26.3)

Submitter: David Schimmel, Wayne Memorial First Aid Squad

Recommendation: Revise text to read as follows:

6.26.3 The warning system shall consist of an audible warning device that can be heard at all seating positions designed to be occupied while the vehicle is in motion and a visual display visible to the driver showing the condition of each each cab seating position.

Substantiation: Seat belt indication is not practical in an ambulance there are times when the EMT in the back must get out of his seat for patient care to occur and cannot be wearing a seatbelt.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-746 Log #1089 **Final Action: Accept in Principle**
(6.26.3)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.26.3 The warning system shall consist of an audible warning device that can be heard at all patient compartment seating positions designed to be occupied while the vehicle is in motion and a visual display visible to the driver showing the condition of each seating position.

Substantiation: Not all OEM seat belt positions can be monitored.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-747 Log #1239 **Final Action: Accept in Principle**
(6.26.3)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

6.26.3 The warning system shall consist of an audible visual warning device visible to the driver that can be heard at indicating all seating positions designed to be occupied while the vehicle is in motion and a visual display visible to the driver showing the condition of each seating position.

Substantiation: This is virtually impossible for patient care, since every time the medic unbuckles to perform a treatment, the alarm goes off. While this works enroute to the scene and base for fire trucks it will negatively impact the quality of patient care. It will also create undue stress in the patient and family who may be riding in the ambulance and suddenly hears a bell go off because the medic got up to check the patient.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-748 Log #1702 **Final Action: Accept in Principle**
(6.26.3)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Problem: The seat belt warning system as described is a cost and service nightmare. From driver distraction to patient annoyance this is a noble but bad idea. What amount of weight is required on a seat position to activate the driver alert to the seat being occupied? What prevents the crew from simply connecting all the seat belts to defeat the system? Does a defective sensor require the ambulance to go out of service or should the crew and patient endure the alarm throughout the transport or for the remainder of the shift? What special tools, equipment or repair technician certifications are required to maintain such systems?

Substantiation: None given.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-749 Log #1819 **Final Action: Accept in Principle**
(6.26.4)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

6.26.4 The warning shall be activated anytime the parking brake is released or the automatic transmission is not in park vehicle is in motion over 10 MPH.

Substantiation: Most vehicles are already setup this way therefore it should save costs.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-750 Log #1845 **Final Action: Accept in Principle**
(6.26.4)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

6.26.4 The warning shall be activated anytime the ~~parking brake is released or the automatic transmission is not in park~~ vehicle is in motion over 10 MPH.

Substantiation: Most vehicles are already setup this way therefore it should save costs.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-751 Log #1411 **Final Action: Accept in Principle**
(6.26.5)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise table to read as follows:

Table 6.25.5 Display for Seating System		
Display Indication	Seat-Belt Occupant Restraint	Seat-Restraint Sensor
Affirmative Indication	<u>Buckled Restrained</u>	Senses Occupant
Negative Indication	<u>Buckled Restrained</u>	No Occupant
Negative Indication	<u>Unbuckled Unrestrained</u>	Senses Occupant
Dark	<u>Unbuckled Unrestrained</u>	No Occupant

Substantiation: Changed wording to more generic occupant restraint to allow for alternate methods of restraint.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-752 Log #1820 **Final Action: Accept in Principle**
(6.26.5, 6.26.6, and 6.26.7)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Delete the following text:

6.26.5 The seat position display shall indicate conditions in accordance with Table 6.26.5:

Table 6.26.5 Display for Seating System
Display Indication Seat-Belt Seat Sensor
Affirmative indication Buckled Senses occupant
Negative indication Buckled No occupant
Negative indication Unbuckled Senses occupant
Dark Unbuckled No occupant

6.26.6 The display indication shall be permitted to consist of lights, text, graphical indicators, digital displays, or other methods

6.26.7 The warning system shall not show an affirmative indication unless it has determined that the seat was occupied before the seat belt was buckled.

Substantiation: Not needed as driver should not be diverting his/her attention away from driving expressly when driving emergent.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-753 Log #1846 **Final Action: Accept in Principle**
(6.26.5, 6.26.6, and 6.26.7)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Delete the following text:

6.26.5 The seat position display shall indicate conditions in accordance with Table 6.26.5:

Table 6.26.5 Display for Seating System
Display Indication Seat-Belt Seat Sensor
Affirmative indication Buckled Senses occupant
Negative indication Buckled No occupant
Negative indication Unbuckled Senses occupant
Dark Unbuckled No occupant

6.26.6 The display indication shall be permitted to consist of lights, text, graphical indicators, digital displays, or other methods:

6.26.7 The warning system shall not show an affirmative indication unless it has determined that the seat was occupied before the seat belt was buckled.

Substantiation: Not needed as driver should not be diverting his/her attention away from driving expressly when driving emergent.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-754 Log #1412 **Final Action: Reject**
(6.26.7)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

6.26.7 The warning system shall not show an affirmation indication unless it has determined that the seat was occupied before ~~the seat belt was buckled~~ the occupant was restrained.

Substantiation: Changed wording to more generic occupant restraint to allow for alternate methods of restraint.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-729 (Log #CP18).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-755 Log #932 **Final Action: Reject**
(6.27)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: Ambulance patient compartments may be occupied for extended periods of time. The performance standards should be functional and based on patient comfort. Heating and AC should be capable of maintaining the patient compartment between 68°F and 78°F continuously in the ambient operating temperature range. The ventilation fan should be capable of a complete change of air in the compartment every two minutes (setting the fan rating only guarantees the fan size—intake, exhaust and ductwork shape/dimensions influence the amount of air that can be moved).

Substantiation: GSA Specification KKK-A-1822-F Section 3.13.

Committee Meeting Action: Reject

Committee Statement: The standard as written provides the HVAC performance the submitter is requesting. The standard reflects what has been provided historically in ambulances and the committee is unaware of any significant complaints in the amount of ventilation being provided.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-756 Log #946 **Final Action: Reject**
(6.27)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: Ambulance patient compartments may be occupied for extended periods of time. The performance standards should be functional and based on patient comfort. Heating and AC should be capable of maintaining the patient compartment between 68°F and 78°F continuously in the ambient operating temperature range. The ventilation fan should be capable of a complete change of air in the compartment every two minutes (setting the fan rating only guarantees the fan size—intake, exhaust and ductwork shape/dimensions influence the amount of air that can be moved).

Substantiation: GSA Specification KKK-A-1822-F Section 3.13.

Committee Meeting Action: Reject

Committee Statement: The standard as written provides the HVAC performance the submitter is requesting. The standard reflects what has been provided historically in ambulances and the committee is unaware of any significant complaints in the amount of ventilation being provided.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-757 Log #1634 **Final Action: Reject**
(6.27)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Review 6.27 and move requirements that apply to the cab area as well as the patient compartment to chapter 4 or 5.

Substantiation: Chapter 6 is requirements for patient compartment. Some of the requirements in section 6.27 should be applicable to the cab area as well.

Committee Meeting Action: Reject

Committee Statement: Committee is specifying patient compartment requirements. The test requirements cover the cab.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-758 Log #205 **Final Action: Accept in Principle**
(6.27.1)

Submitter: David B. Cole, Life Line Emergency Vehicles

Recommendation: Revise text to read as follows:

6.27.1 HVAC units shall be independently controlled between the driving and patient compartments. This shall only be required if the commercial chassis has that as a standard.

Substantiation: Need to add the above words in order not to create a monopoly for a certain manufacturer.

If all chassis have this as a standard - the playing field is equal!

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-514 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-759 Log #310 **Final Action: Accept in Principle**
(6.27.1)

Submitter: Charles D. Drake, SJC Industries Corporation

Recommendation: Delete the following text:

6.27.1 HVAC units shall be independently controlled between the driving and patient compartments:

Substantiation: Most chassis available today do not allow independent operation of the ac system. To accomplish this adds cost that does not result in value for normal operations.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-760 Log #706 **Final Action: Accept in Principle**
(6.27.1)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Delete the requirement.

Substantiation: Because of commercially engineered chassis, interfacing to their system is not always allowed or efficiently done. Tying in to the OEM can add \$500 to the cost of every ambulance.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-761 Log #1558 **Final Action: Accept in Principle**
(6.27.1)

Submitter: Peter Luhrs, Weldon (a Division of Akron Bradd

Recommendation: Revise text to read as follows:

6.27.1 HVAC units shall be independently controlled between the driving and patient compartments:

(Any additional HVAC units added should not or affect the operation of the OEM climate system provided with the vehicle)

Substantiation: The original paragraph is vague, if the intent was to keep the module and chassis separate, lets try the change above.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-762 Log #1008 **Final Action: Reject**
(6.27.3 and 6.27.4)

Submitter: Thomas Lenart, CT Dept of Public Health Office of Emergency Medical Services

Recommendation: New text to read as follows:

6.27.4.1 An air conditioning system shall be provided capable of lowering the interior temperature from 95°F to 78°F (35°C to 25°C) at a minimum of 40 percent relative humidity within **30 Change to 10 minutes**

6.27.3.1 A heating system shall be provided capable of raising the interior temperature from 32°F to 68°F (0°C to 20°C) within **30 Change to 10 minutes**.
Substantiation: 6.27.4 and 6.27.1 heating and air conditioning Units under the current standards work best when they are needed the least, it seems that in almost all vehicles when temps are at extreme lows the diesel engines do not supply enough heat rapidly enough to affect the interior temps of the vehicle to comport the patients, on the other end of the temperature spectrum the air conditioning systems do not cool the vehicle sufficiently during the hot humid weather, frequently when the most calls are done involving diff breathers, who need climate controlled environments. There is not a focus placed on filtration of the air intakes of pollutants.

Committee Meeting Action: Reject

Committee Statement: The committee would love to specify such aggressive performance, but the chassis and components will not provide it with current technology. Purchaser may specify this level of performance if desired.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-763 Log #1489 **Final Action: Reject**
(6.27.4.1)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Revise text to read as follows:

6.27.4.1 An air conditioning system shall be provided capable of lowering the interior temperature from 95°F to 78°F (35°C to 25°C) at a minimum of 40 percent relative humidity within 15-30 minutes.

Substantiation: 15 minutes is our average time to respond to a call and have the patient loaded. In 30 minutes time, the patient is usually already transported.

Committee Meeting Action: Reject

Committee Statement: The committee would love to specify such aggressive performance, but the chassis and components will not provide it with current technology. Purchaser may specify this level of performance if desired.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-764 Log #1090 **Final Action: Accept**
(6.27.5.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.27.5.1 Ventilation system(s) in the of the driver and patient compartments shall provide a change of ambient air within both compartments with the vehicle stationary.

Substantiation: Ventilation system is necessary in the patient compartment because of fixed window ventilation restriction. Windows can be opened in the cab to provide appropriate ventilation. Additional exhaust systems are not required in the cab.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-765 Log #1544 **Final Action: Accept in Principle**
(6.27.5.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.27.5.1 Ventilation system(s) in the of the driver and patient compartments shall provide a change of ambient air within both compartments with the vehicle stationary.

Substantiation: Front occupants can roll the cab windows down – cab doesn't need to be part of the change-over volume of air.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917- 764 (Log #1090).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-766 Log #1091 **Final Action: Reject**
(6.27.5.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.27.5.2 Ventilation shall be separately controlled within the cab and patient compartments.

Substantiation: Clarify the need for switches in patient compartment only.

Committee Meeting Action: Reject

Committee Statement: It is possible and customary to have a ventilation control in the cab area and a separate fan control in the patient area.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-767 Log #472 **Final Action: Accept in Principle**
(6.27.5.4)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

6.27.5.4 The fresh air exhaust fan shall be rated to provide a minimum of 400 cfm (11 m³/min).

6.27.5.5 The installation of the the exhaust fan should be such that the CFM is not drastically reduced due to restrictions caused by vents or duct work.

Substantiation: I believe these changes better reflect the intent of the requirement.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-770 (Log #CP23).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-768 Log #1301 **Final Action: Accept in Principle**
(6.27.5.4)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.27.5.4 Fresh air exhaust fan shall provide a minimum of 400 200 cfm (11 m³/min).

Substantiation: Air exchange rate can be calculated by dividing the module interior volume by the exchange air flow. For a 94" x 147" module with 72" headroom, excluding 20% of the volume as non-exchangeable space (consumed by compartments, personnel, and equipment) the volume is 0.8 * 90" x 139" x 72" = 417 ft³. Dividing the volume by the exchange air flow of 400 ft³/min gives nearly one air exchange per minute.

The KKK spec calls for one air exchange every two minutes.

Raising the required air flow to 400 cfm adds unjustifiable cost to the customer, increases the noise level in the module, and degrades the effectiveness of the air conditioning system.

The standard should specify a reasonable minimum level of ventilation, allowing the customer to specify additional ventilation if required in a particular circumstance.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-770 (Log #CP23).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-769 Log #1682 **Final Action: Accept in Principle**
(6.27.5.4)

Submitter: Peter I. Dworsky, Monoc

Recommendation: The requirement should be for the exhaust fan to completely replace the volume of the air X number of times in a given time frame to reduce the likelihood of entraining airborne pathogens.

Substantiation: None given.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-770 (Log #CP23).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-770 Log #CP23

Final Action: Accept

(6.27.5.4)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

6.27.5.4 A Fresh air exhaust fan shall be provided a minimum of 400 cfm (11 m³/min).

Substantiation: No science that the committee knows of that would justify a particular vent volume.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-771 Log #70

Final Action: Reject

(6.28.1)

Submitter: William von Zehle, Jr., Wilton Emergency Medical Services

Recommendation: Revise text to read as follows:

The interior sound level in the patient compartment shall not exceed 80 decibels with audible warning devices in operation.

Substantiation: The original proposal does not specify if the reading is taken with audible warning devices in operation or not.

Committee Meeting Action: Reject

Committee Statement: These requirements are already in the test standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-772 Log #720

Final Action: Reject

(6.28.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

6.28.1 The interior sound level in the patient compartment shall not exceed 82 decibels.

Substantiation: AMD 006 has a tolerance of -0 +2 decibels. This seems silly. Have a maximum number and make sure the test equipment is calibrated.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-773 Log #721

Final Action: Reject

(6.28.2)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation:

6.28.2 Compliance of the patient compartment interior sound shall be validated by testing a substantially similar ambulance in accordance with chapter 9.x (see notes below) AMD-006, Patient Compartment Sound Level Test.

9.x Patient Compartment Sound Level Test.

9.x.1 This test shall be performed during the following environmental conditions:

(1) Temperature not to exceed 95°F (35 C).

(2) Humidity not to exceed 75% relative humidity.

(3) Wind velocity not to exceed 12 mph (19 km/hr).

(4) Barometric pressure 29 to 31 in. Hg.

9.x.2 Measure sound level using a meter that meets requirements of the American National Standard Institute, Standard (ANSI) S1.4 -- Specification for Sound Level Meters, for Type II meters. Set the meter to A -- weighing network, "fast" meter response.

9.x.3 Suspend the microphone 23 in. (584 mm) above the vehicle floor; centered laterally and longitudinally on the expected center of the patient cot as it will be secured in the patient compartment with the microphone oriented up.

9.x.4 Park ambulance on a concrete or asphalt surface, at a location so that no large reflecting surfaces, such as other vehicles, signboards, buildings or hills are within 50 ft (15.2 m) of the vehicle being tested.

9.x.5 Close all ambulance doors, windows and vents.

9.x.6 Run air conditioner and heater blower fans in patient compartment at their highest speed.

9.x.7 Set vehicle transmission in neutral gear and set the engine speed to the rpm obtained by the ambulance when operating on level ground at 55 mph (88 km/hr).

9.x.8 Turn on all warning lights

9.x.9 Operate siren in the loudest mode.

9.x.10 Measure and record the highest sound level.

9.x.11 Decrease the engine speed to idle and then back to the 55 mph (88 km/hr) rpm.

9.x.12 Measure and record the highest sound level

9.x.13 Repeat until two maximum sound levels within 2 decibels (db) of each other are recorded.

9.x.14 Numerically average these two maximum sound level readings.

Substantiation: The AMD test has a bit of "grey" area. The testing needs to be better spelled out. I would like to have NFPA control the test methods.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-774 Log #749

Final Action: Reject

(6.29)

Submitter: John J. Russell, Cape County Private Ambulance Service, Inc.

Recommendation: Delete the following text:

Reflective Striping:

Substantiation: This section needs to be reworked in its entirety with inclusion of conspicuity standards as well retroreflectivity standards. No information about maximum effective color wavelength is included either. All three are well described in current NHTSA, SAE, and ANSI literature on improving visibility of vehicles in both daylight and night conditions. These considerations also affect color of emergency lighting and intensity standards as well.

Committee Meeting Action: Reject

Committee Statement: Ambulances need conspicuity.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-775 Log #925

Final Action: Reject

(6.29)

Submitter: Sean Caffrey, Colorado Dept of Public Health & Environment / Rep. Colorado EMS Safety Task Force

Recommendation: We strongly encourage the Technical Committee to review and incorporate scientific evidence and best practices from European, Canadian and Australian sources prior to finalizing recommendations on livery, graphics, and reflective striping. We would also encourage that effective conspicuity be considered in standards related to vehicle base color and emergency lighting equipment. Standards in this area should not be enacted without consideration of data related to human perception and reaction time. Specific patterns should also not be recommended without an analysis of the proven effectiveness, or lack thereof, of those patterns.

Substantiation: The proposed standard is based mostly on the NFPA 1901 fire apparatus standard which relies largely on historic, anecdotal, and optimistic assumptions regarding vehicle conspicuity. A substantial amount of evolving best practice information on this topic is available at: www.ambulancevisibility.com including research and reports from a variety of North American, European and Australian sources.

Committee Meeting Action: Reject

Committee Statement: No specific Recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: The log does suggest a recommendation. The committee should review “ambulancevisibility.com” and not relay solely on 1901.

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-776 Log #938 **Final Action: Reject**
(6.29)

Submitter: DienstColor Timothy, Ute Pass Regional Ambulance District / Rep. Colorado EMS Chiefs, Managers and Directors

Recommendation: We strongly encourage the Technical Committee to review and incorporate scientific evidence and best practices from European, Canadian and Australian sources prior to finalizing recommendations on livery, graphics, and reflective striping. We would also encourage that effective conspicuity be considered in standards related to vehicle base color and emergency lighting equipment. Standards in this area should not be enacted without consideration of data related to human perception and reaction time. Specific patterns should also not be recommended without an analysis of the proven effectiveness, or lack thereof, of those patterns.

Substantiation: The proposed standard is based mostly on the NFPA 1901 fire apparatus standard which relies largely on historic, anecdotal, and optimistic assumptions regarding vehicle conspicuity. A substantial amount of evolving best practice information on this topic is available at: www.ambulancevisibility.com including research and reports from a variety of North American, European and Australian sources.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: The log does suggest a recommendation. The committee should review “ambulancevisibility.com” and not relay solely on 1901.

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-777 Log #1635 **Final Action: Reject**
(6.29)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Move 6.29 to chapter 4 or 5.

Substantiation: Chapter 6 is requirements for patient compartment. The requirements in 6.29 apply to the exterior of the ambulance.

Committee Meeting Action: Reject

Committee Statement: Committee likes this location.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-778 Log #1684 **Final Action: Reject**
(6.29)

Submitter: Peter I. Dworsky, Monoc

Recommendation: 6.29.1.2 What is the justification for this color pattern? Depending on the base color of the ambulance, the pattern may not stand out.

6.29.4 Many states require printed information on the rear of the vehicles which may be obscured by the striping requirement.

6.29.5 The current design of the material on the inside of the doors may prevent the adhesion of striping, many doors are diamond plated.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: No Specific Recommendation or Substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-779 Log #1805 **Final Action: Accept in Principle**
(6.29)

Submitter: John Killeen, Ambulance Visibility

Recommendation: Add new text to read as follows:

6.29 Retro-reflective contour stripes of any colour shall be affixed to the front, rear and side surfaces of the ambulance to outline the vehicle profile. Contour stripes may be any color or alternatively the same color as the vehicle body color and a minimum width of 1 in. (25 mm) wide.

Substantiation: The display of retro-reflective contour stripes is equally, if not more important than the wider reflective stripe along the waistline or the rear-facing chevrons. Contour markings were highly recommended in the FEMA Conspicuity and Visibility Study. The vertically stripes at the corners of the vehicle provide visual cues that enable the viewer to more accurately interpret the distance, direction and closing speed of an emergency vehicle, especially at night. Horizontal stripes and chevrons alone do not provide this information to the viewer – see images on the next page. Contour markings are an inexpensive and effective safety solution that can be easily retrofitted to current fleet vehicles and they also:

Outline the vehicle's:

- Shape & size
- Direction of travel
- Door openings
- Occupational purpose

Provide & inform:

- Visual cues
- Closing speeds
- Separation of vehicles
- Visual reference points

Contour striping was a major topic in October 2010 when I was a keynote speaker at the 3rd Annual Safety Summit in Colorado and presenting on emergency vehicle visibility and conspicuity. Following the presentation, several agencies immediately began fitting contour markings to their fleet after the conference. The FEMA study referenced below includes additional references in the bibliography. See links to the PowerPoint presentations below.

Bibliography + Links

FEMA Emergency Vehicle Visibility and Conspicuity Study FA-323/August 2009 pp23-25 Link accessed 13 December 2010

http://www.usfa.dhs.gov/downloads/pdf/publications/fa_323.pdf

Killeen, J. Deciphering emergency vehicle conspicuity research - 10 simple steps to safer markings and warning lights 3rd Annual EMS Safety Summit – Colorado, October 2010

Link accessed 13 December 2010

http://www.ambulancevisibility.com/web_images/Colorado%20EMS%20Safety%20Summit%202010%20presentation%20-%20John%20Killeen%20-%20Ambulance%20Visibility.pdf

Killeen, J. (2008). Ambulance visibility issues. Transportation Research Board Ambulance Safety Summit. National Academies Washington, DC. November 7, 2008.

Link accessed 13 December 2010

http://www.ambulancevisibility.com/web_images/2008%20TRB%20Ambulance%20Summit%20John%20Killeen.pdf

Note: Supporting material is available for review at NFPA Headquarters.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-782 (Log #CP24).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-780 Log #1821 **Final Action: Reject**
(6.29)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

6.29* Reflective Striping (all striping shall be of a color contrasting with the primary color upon which it is placed)

Substantiation: This makes the striping visible in daylight hours as well.

Committee Meeting Action: Reject

Committee Statement: Vehicle should be visible in daylight anyway.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-781 Log #1847 **Final Action: Reject**
(6.29)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

6.29* Reflective Striping (all striping shall be of a color contrasting with the primary color upon which it is placed)

6.29.1* A retro-reflective stripe or combination of stripes shall be affixed to the ambulance in the following proportions:

(1) ~~25 percent of the width of the front of the apparatus visible when approaching from the front retro-reflective mirrored image~~ AMBULANCE in a minimum of 3 inches of height shall be visible from the front.

(2) ~~50 percent of the over-all ambulance length visible when approaching from each side retro-reflective~~ All required Department of Transportation striping shall be displayed on the sides and rear of the ambulance in addition at least two(2) four inch or wider stripes shall be displayed on both sides and rear and shall be displayed in the bottom ? of ambulance

(3) All lettering and decals or designs.

Substantiation: This makes the striping visible in daylight hours as well.

Too much reflecting causes other drivers to gawk instead of paying attention to driving creating a unsafe condition.

Committee Meeting Action: Reject

Committee Statement: Submitter provides unsubstantiated statements.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-782 Log #CP24 **Final Action: Accept**
(6.29)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

6.29* Reflective Striping,

6.29.1* A retroreflective stripe or combination of stripes shall be affixed to the ambulance in the following proportions:

(1) 25 percent of the width of the front of the ambulance visible when approaching from the front.

(2) 50 percent of the over-all ambulance length visible when approaching from each side

6.29.2 The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total vertical width.

6.29.3 The 4 in. (100 mm) wide stripe or combination of stripes shall be permitted to be interrupted by objects (i.e., receptacles, cracks between slats in roll up doors, and so forth) provided the full stripe is seen as conspicuous when approaching the ambulance.

6.29.4 A graphic design shall be permitted to replace all or part of the required striping material if the design or combination thereof covers at least the same perimeter length(s) required by 6.29.1.

6.29.5 Any vertically hinged door shall have at least 60 in.2 (38710 mm2) of retroreflective material affixed to the inside of the door.

6.29.6 At least 50 percent of the rear-facing vertical surfaces, visible from the rear of the ambulance shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees.

6.29.6.1 Each stripe in the chevron shall be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green.

6.29.6.2 Each stripe shall be 6 in. (150 mm) in width.

6.29.7 All retroreflective material shall conform to the requirements of ASTM D 4956, *Standard Specification for Retroreflective Sheeting for Traffic Control*, Section 6.1.1 for Type I Sheeting.

6.29.8 All retroreflective materials that are colors not listed in ASTM D 4956, Section 6.1.1, shall have a minimum coefficient of retroreflection of 10 with observation angle of 0.2 degrees and entrance angle of -4 degrees.

6.29.9 Any printed or processed retroreflective film construction shall conform to the standards required of an integral colored film as specified in ASTM D 4956, Section 6.1.1.

A.6.29 Retro-reflective contour stripes of any color affixed to the front, rear and side surfaces of the ambulance to outline the vehicle profile may provide additional conspicuity. The purchaser may wish to consider including this in the specification.

Substantiation: Paragraphs were out of order and caused confusion.

Committee feels that contour stripes are an option worth informing the purchaser about by including it in the annex.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

PRENTISS, S.: the striping recommended by FEMA does not include red, it cites "yellow, white, green and orange" to be most visible

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-783 Log #722 **Final Action: Accept in Principle**
(6.29..2 through 6.29.3)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

6.29.1.3 Each stripe shall be 6 in. (150 mm) in width.

6.29.2 The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total vertical width.

6.29.3 The 4 in. (100 mm) wide stripe or combination of stripes shall be permitted to be interrupted by objects (i.e., receptacles, cracks between slats in roll up doors, and so forth) provided the full stripe is seen as conspicuous when approaching the apparatus.

Substantiation: I am confused what the minimum width is. In 6.29.1.3 it calls for a 6"...in 6.29.2 and 6.29.3 it calls for a 4". I don't have a proposal because I don't remember what was originally discussed at the meetings...but I either want better clarification for each striping or one size to be determined.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-782 (Log #CP24).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-784 Log #571 **Final Action: Reject**
(6.29.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~A retroreflective stripe or combination of stripes shall be affixed to the ambulance in the following proportions:~~

~~(1) 25 percent of the width of the front of the apparatus visible when approaching from the front:~~

~~(2) 50 percent of the over-all ambulance length visible when approaching from each side~~

Substantiation: The proposed standard lacks data to support standard.

Reference all research compiled by John Killeen at www.ambulancevisibility.com. The research produced by FEMA is outdated and the opinions on colors for Chevrons indicate a clear lack of scientific justification. The use of chevrons on the back of vehicles creates confusion by following drivers who are unable to determine the distance between their vehicle and a vehicle with chevrons on the rear. Any identifying marks should identify the width of the vehicle, its direction, whether it is moving and be a solid color such as fluorescent yellow, yellow-green or orange. In addition contour markings outlining the vehicle size and shape should be included. Any recommendation for conspicuity must be base on a comprehensive review of scientific data and peer reviewed research.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-782 (Log #CP24).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-785 Log #1187 **Final Action: Reject**
(6.29.1)

Submitter: Deborah Thomson, PL Custom Emergency Vehicles

Recommendation: None given.

Substantiation: 6.29.1 Retroreflective striping on the front 25% of the width and the sides 50% of the length.

6.29.2/6.29.3 Stripe to be 4" in vertical width.

Is this requirement meaning 25% of the total front of the vehicle and 50% of the sides with the 4" stripe?

6.29.1.1 Chevrons require 50% of the rear facing vertical surface we equipped with retroreflective striping of red & yellow with 6" stripes.

Committee Meeting Action: Reject

Committee Statement: No Specific Recommendation or Substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-786 Log #1212 **Final Action: Reject**
(6.29.1)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

A retroreflective stripe or combination of stripes shall be affixed to the ambulance in the following proportions:

- (1) 25 percent of the width of the front of the apparatus visible when approaching from the front.
- (2) 50 percent of the over-all ambulance length visible when approaching from each side

Substantiation: The proposed standard lacks data to support standard. Reference "Emergency Vehicle Visibility and Conspicuity Study Doc FA-323/ August 2009 FEMA"

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-782 (Log #CP24).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-787 Log #1255 **Final Action: Reject**
(6.29.1)

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: None given.

Substantiation: 25% of the front and 50% of the side is excessive. This will add substantial cost to the vehicle and interfere with customer graphics.

Committee Meeting Action: Reject

Committee Statement: No Specific Recommendation or Substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-788 Log #1822 **Final Action: Reject**
(6.29.1)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

6.29.1* A retro-reflective stripe or combination of stripes shall be affixed to the ambulance in the following proportions:

- (1) 25 percent of the width of the front of the apparatus visible when approaching from the front retro-reflective mirrored image AMBULANCE in a minimum of 3 inches of height shall be visible from the front.
- (2) 50 percent of the over-all ambulance length visible when approaching from each side retro-reflective All required Department of Transportation striping shall be displayed on the sides and rear of the ambulance in addition at least two (2) four inch or wider stripes shall be displayed on both sides and rear and shall be displayed in the bottom ? of ambulance
- (3) All lettering and decals or designs.

Substantiation: Too much reflecting causes other drivers to gawk instead of paying attention to driving creating a unsafe condition.

Committee Meeting Action: Reject

Committee Statement: Submitter provides unsubstantiated statements.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-789 Log #1703 **Final Action: Reject**
(6.29.1 through 6.29.4)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Problem: What scientific research was used to determine that reflective chevrons of alternating red and yellow are superior to other designs or colors? Why not blue and white or green and orange? Why not use a checker board pattern? Develop a standard that is supported by scientific research.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: No Specific Recommendation or Substantiation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-790 Log #50 **Final Action: Reject**
(6.29.1.1)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Revise text to read as follows:

6.29.1.1 At least 50 percent of the rear-facing vertical surfaces, visible from the rear of the ambulance shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees.

Substantiation: Rear Chevrons will serve no purpose on most accident scenes as the majority of the time the rear doors will be open.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-791 Log #234 **Final Action: Reject**
(6.29.1.1)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Revise text to read as follows:

6.29.1.1 At least 50 percent of the rear-facing vertical services, visible from the rear of the ambulance shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the center line of the vehicle at an angle of 45 degrees. There shall be, at a minimum, a 6 in. wide reflective stripe across the back of the ambulance no more than 4 foot above the ground.

Substantiation: Delete chevron striping. Chevrons have shown that they draw people to them. If a person has to make a quick move to avoid hitting another vehicle, they see a chevron striped object and their mind thinks "highway board". They react as if it is a board rather than hitting another vehicle. Than bang they have struck an emergency vehicle.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-782 (Log #CP24).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-792 Log #1213 **Final Action: Reject**
(6.29.1.1)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

At least 50 percent of the rear-facing vertical surfaces, visible from the rear of the ambulance shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees.

Substantiation: The proposed standard lacks data to support standard.

Reference "Emergency Vehicle Visibility and Conspicuity Study Doc FA-323/ August 2009 FEMA"

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-782 (Log #CP24).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-793 Log #1240 **Final Action: Reject**
(6.29.1.1)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

6.29.1.1 At least 50 percent of the rear-facing vertical surfaces, visible from the rear of the ambulance shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees.

Substantiation: This needs clarification, when the doors are closed 50% is easily obtainable, and the chevron is conspicuous, when the doors are open only and average of 27% is visible, above the open doors. So this section should be clarified by stating when the vehicle is in motion or on scene.

Committee Meeting Action: Reject

Committee Statement: No Recommendation was provided by the submitter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: A recommendation was given and a request made.
Log asks a good question and provides real world issues when ambulances are on-scene.

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-794 Log #1302 **Final Action: Reject**
(6.29.1.1)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.29.1.1 At least 50 35 percent of the rear-facing vertical surfaces, visible from the rear of the ambulance shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees.

Substantiation: The logical application of chevrons on ambulances is on the area outboard of the rear doors. Accordingly, the coverage requirement should be adjusted to properly suit the ambulance application. Adding chevrons to the doors—the only way to reach 50% coverage—creates an overwhelming, dizzying effect that should be avoided.

Committee Meeting Action: Reject

Committee Statement: 50% is consistent with fire apparatus.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 24 Negative: 3

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

COLE, D.: This is not a fire apparatus and therefore the real world use of ambulances includes driving as well as on scene with rear doors open. The committee should include that the rear doors - lower panels shall be chevron and be considered as part of the rear view.

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-795 Log #1823 **Final Action: Reject**
(6.29.1.1, 6.29.1.2, and 6.29.1.3)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Delete text as follows:

6.29.1.1 At least 50 percent of the rear-facing vertical surfaces, visible from the rear of the ambulance shall be equipped with retro reflective striping in a chevron pattern sloping downward and away from the center line of the vehicle at an angle of 45 degrees.

6.29.1.2 Each stripe in the chevron shall be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green.

6.29.1.3 Each stripe shall be 6 in. (150 mm) in width.

6.29.2 The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total vertical width.

Substantiation: 6.29.1 as rewritten above takes care of the requirement

without the cost or being mistaken for a highway department vehicle.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-782 (Log #CP24).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-796 Log #1848 **Final Action: Reject**
(6.29.1.1, 6.29.1.2, and 6.29.1.3)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Delete text as follows:

6.29.1.1 At least 50 percent of the rear-facing vertical surfaces, visible from the rear of the ambulance shall be equipped with retro reflective striping in a chevron pattern sloping downward and away from the center line of the vehicle at an angle of 45 degrees.

6.29.1.2 Each stripe in the chevron shall be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green.

6.29.1.3 Each stripe shall be 6 in. (150 mm) in width.

6.29.2 The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total vertical width.

Substantiation: 6.29.1 as rewritten above takes care of the requirement without the cost or being mistaken for a highway department vehicle.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-782 (Log #CP24).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-797 Log #738 **Final Action: Reject**
(6.29.1.1 through 6.29.1.3)

Submitter: Aaron Reinert, Lakes Region EMS

Recommendation: Delete text as follows:

6.29.1.1 At least 50 percent of the rear-facing vertical surfaces, visible from the rear of the ambulance shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees.

6.29.1.2 Each stripe in the chevron shall be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green.

6.29.1.3 Each stripe shall be 6 in. (150 mm) in width.

Substantiation: Current research does not support this graphic design or color pattern. Research from Australia suggests this style of graphics as no impact on safety.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-782 (Log #CP24).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-798 Log #19 **Final Action: Reject**
(6.29.1.2)

Submitter: Brendan Kearney, Boston EMS

Recommendation: 6.29.1.2 proposes that each stripe in the rear facing chevron shall be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green. This recommendation appears to be based on NFPA 1901 which refers to Fire Apparatus markings. Non Fire-Based ambulances should not be required to have red stripes since there is no evidence to suggest that RED is a more visible stripe. In fact, according to FEMA FA-323 "Emergency Vehicle Visibility and Conspicuity", one study US Study found "yellow, white, green, and orange" to be the most visible. I agree that a rear facing chevron is worth including, but there is no scientific reason that would require on of the stripes to be red.

See: http://www.usfa.dhs.gov/downloads/pdf/publications/fa_323.pdf

Substantiation: 6.29.1.2 proposes that each stripe in the rear facing chevron shall be a single color alternating between red and either yellow, fluorescent

yellow, or fluorescent yellow-green. This recommendation appears to be based on NFPA 1901 which refers to Fire Apparatus markings. Non Fire-Based ambulances should not be required to have red stripes since there is no evidence to suggest that RED is a more visible stripe. In fact, according to FEMA FA-323 "Emergency Vehicle Visibility and Conspicuity", one study US Study found "yellow, white, green, and orange" to be the most visible. I agree that a rear facing chevron is worth including, but there is no scientific reason that would require one of the stripes to be red.

See: http://www.usfa.dhs.gov/downloads/pdf/publications/fa_323.pdf

Committee Meeting Action: Reject

Committee Statement: Colors consistent with NFPA 1901, *Standard for Automotive Fire Apparatus*, and NFPA 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-799 Log #235 **Final Action: Reject**
(6.29.1.2)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Delete the following text:

6.29.1.2 Each stripe in the chevron shall be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green.

Substantiation: Delete Chevron striping. See my proposed 6.29.1.1.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-791 (Log #234).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-800 Log #582 **Final Action: Reject**
(6.29.1.2)

Submitter: Michael Hall, Nature Coast EMS

Recommendation: Revise text to read as follows:

6.29.1.2 Each stripe in the chevron shall be a single color alternating between red or blue and either yellow, fluorescent yellow, or fluorescent yellow-green.

Substantiation: The purpose of the rear markings on the vehicles is to enhance safety and visibility. Blue should be allowed to be a based color as the red rear warning devices have been reported to blend with other traffic brake lights. Blue will stand out more than red in these situations and for safety reasons should be allowed on the rear as a contrasting color.

Committee Meeting Action: Reject

Committee Statement: Colors consistent with NFPA 1901, *Standard for Automotive Fire Apparatus* and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-801 Log #1214 **Final Action: Reject**
(6.29.1.2)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

Each stripe in the chevron shall be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green.

Substantiation: The proposed standard lacks data to support standard. Reference "Emergency Vehicle Visibility and Conspicuity Study Doc FA-323/ August 2009 FEMA"

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-791 (Log #234).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-802 Log #1430 **Final Action: Reject**
(6.29.1.2)

Submitter: Chad Dotzler, Hennepin EMS

Recommendation: Revise text to read as follows:

Each stripe in the chevron shall be a single reflective color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green, contrasting colors.

Substantiation: The use of chevron style graphics is warranted given their effectiveness, however, the requirement of red as being one of the colors is unjustified. The reason given by the NFPA Technical Committee in 2009 that "a standard is not a standard unless it is standard" is not valid. The language allowing different color yellows, or the language that allows a graphic replacement to the chevron as long as it covers the same amount of space as the chevron shows that it is not necessarily a standard the Committee is looking for. The use of red is purely a culture choice among fire-based systems. The other excuse given that it can be related to a stop sign is also not justified. A key element to standardization of signs is their shape, language, and color. The use of yellow goes against this concept, furthermore, there is no relation what so ever that a chevron is indicative of a stop sign. The other statement made by the NFPA Technical Committee that "we should have a standard look" is worthy but there is one issue with this. When the term "we" is used, they are referring to fire-based EMS. The reality is that there are many agencies that are publicly and privately owned that are not fire-based. Non-fire EMS systems have proven to be far more efficient and identity is important to these agencies. The mandatory use of Red as a color, in many instances, does not go with the color scheme, while alternative colors may be equally effective. Most Red colored ambulances are fire based. By requiring the use of red, the Committee is placing an unfair burden on private EMS services. If there were statistical data supporting the effectiveness of Red over other colors like Blue, Yellow, Orange, Yellow-Green, we would be interested in viewing the data. The reality is that there is no proof that red is more effective than any other color. The effectiveness of the chevron is accomplished by the direction of the stripes, and the contrasting reflective colors, not the specific choice of color. Furthermore, there are colors that are better in certain light than others, there is no one "best" choice of color in all lighting scenarios. This was discussed in FEMA's Study *Emergency Vehicle Visibility and Conspicuity Study*, August 2009.

Committee Meeting Action: Reject

Committee Statement: Colors consistent with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-803 Log #1741 **Final Action: Reject**
(6.29.1.2)

Submitter: Christopher Anderson, Bell Ambulance, Inc.

Recommendation: Revise text to read as follows:

6.29.1.2 Each stripe in the chevron shall be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green, or alternating between orange and white.

Substantiation: The color choices offered are very suitable for fire departments, but not for private ambulance services or other ambulance operators.

We believe other contrasting color combinations should be approved for our use, such as orange and white.

Committee Meeting Action: Reject

Committee Statement: Colors consistent with NFPA 1901, *Standard for Automotive Fire Apparatus* and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-804 Log #1746 **Final Action: Reject**
(6.29.1.2)

Submitter: Patrick Egan, Allina Medical Transportaiton

Recommendation: Revise text to read as follows:

Each stripe in the chevron shall be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green.

Substantiation: The color red should be removed from the standard and a contrasting color of the services choice should be the option. This is too fire based and does not take into consideration of many other sources. There is a FEMA study that recommends contrasting color to the yellow-green that would be more appropriate.

Committee Meeting Action: Reject

Committee Statement: Colors consistent with NFPA 1901, *Standard for Automotive Fire Apparatus* and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-805 Log #236 **Final Action:** Reject
(6.29.1.3)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Revise text to read as follows:

6.29.1.3 Each stripe shall be ~~6 in. (150 mm)~~ 4 in. in width.

Substantiation: 6.29.1.3 reads 6 in. Stripe. 6.29.2 reads 4 in. stripe. If the chevrons have to stay make them 4 in.

Committee Meeting Action: Reject

Committee Statement: Committee wants to be consistent with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-806 Log #1092 **Final Action:** Reject
(6.29.1.3)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.29.1.3 Each stripe shall be ~~6 in. (150 mm)~~ 4 in. (100 mm) in width.

Substantiation: 6 in. width is contradictory with 6.29.2 and 6.29.3.

Committee Meeting Action: Reject

Committee Statement: Committee wants to be consistent with NFPA 1901, *Standard for Automotive Fire Apparatus* and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-807 Log #1545 **Final Action:** Reject
(6.29.1.3)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.29.1.3 Each stripe shall be ~~6 in. (150 mm)~~ 4 in. (100 mm) in width.

Substantiation: This appears to be a type-o. Change to 4" for consistency with other related requirements; otherwise, a clarification needs to be made for the 6" dimension.

Committee Meeting Action: Reject

Committee Statement: Committee wants to be consistent with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-808 Log #1758 **Final Action:** Reject
(6.29.1.3)

Submitter: John Killeen, Ambulance Visibility

Recommendation: Revise text to read as follows:

6.29.1.3 Each stripe shall be a minimum of 6 in. (150 mm) in width.

Substantiation: A chevron pattern using the minimum 4" (100mm) vertical height stripe when applied to vehicles of average height or taller could result in an excessive number of alternating color repetitions (see Figure 1). This may induce pattern confusion in following drivers (when mobile) or approaching drivers (when stationary). The dazzle effect would be amplified in city traffic where separation distances are short. Complex patterns on vehicles can induce visual perception errors in other drivers leading to collisions.

The revised wording provides the option for a wider striped layout (Figure 2) and this is adjustable to a greater range of vehicle types with different shapes, heights or with different types of door openings (Figure 3). Applying a chevron stripe that is wider than 6" will reduce the number of alternations and therefore reduce the possibility of visually overloading the viewer.

There is little published research available that evaluates rear-facing chevrons on emergency vehicles. During the development of the Battenburg marking scheme in the UK there was no joint or separate study authenticating use of the chevron pattern within the Home Office design. Chevron designs have been borrowed between countries and then applied to vehicles with no studies available confirming the effectiveness of the inverted-V pattern.

I have been researching emergency vehicle conspicuity for 13 years and have designed vehicle safety markings for agencies in Australia and the United States. During those consultations I have adapted chevron patterns for those agencies that require the pattern be fitted to their vehicles. In almost every case the wide stripe pattern has provided a better solution than narrow stripes with the view expressed that there is less visual overload using the wider stripes. Those Australian ambulance agencies that applied chevrons to their vehicles have all chosen wide stripes. Chevrons were a major topic in October 2010 when I was a keynote speaker at the 3rd Annual Safety Summit in Colorado and presenting on emergency vehicle visibility and conspicuity.



Figure 1 – Narrow Stripes



Figure 2 – Wide Stripes



Figure 3 – Sprinter Van

Committee Meeting Action: Reject

Committee Statement: Committee wants to be consistent with NFPA 1901, *Standard for Automotive Fire Apparatus* and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-809 Log #232 **Final Action: Reject**
(6.29.1(1))

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Delete the following text:

6.29.1(1) 25 percent of the apparatus visible when approaching from the front.

Substantiation: Delete this section. This is not clear. It says “25% of the width”. An ambulance is normally 96 in. wide. Following the 25% formula there needs to be 24 in. of reflective material. Question: What width? 1/4 in. wide by 24 in. long? or 24 in. wide by 24 in. long? IF you look at the front of an ambulance there is no place on the front for a reflective strip that is going to be visible when approaching. Drivers, when approaching an ambulance, will see the emergency lights and not see a small piece of reflective striping.

Committee Meeting Action: Reject

Committee Statement: Committee wants to be consistent with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-810 Log #1636 **Final Action: Accept in Principle**
(6.29.1(1) and 6.29.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.29.1(1) to read as follows:

(1) 25 percent of the width of the front of the ambulance apparatus visible when approaching from the front.

Revise 6.29.3 to read as follows:

6.29.3 The 4 in. (100 mm) wide stripe or combination of stripes shall be permitted to be interrupted by objects (i.e., receptacles, cracks between slats in roll up doors, and so forth) provided the full stripe is seen as conspicuous when approaching the ambulance apparatus.

Substantiation: These are editorial changes needed as this is an ambulance standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-782 (Log #CP24).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-811 Log #233 **Final Action: Reject**
(6.29.1(2))

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Revise text to read as follows:

6.29.1(2)(1) 50 percent of the over-all ambulance length visible when approaching from each side. There shall be, at a minimum, a 6 in. wide reflective stripe from the front of the vehicle to the rear on each side of the unit. This stripe shall be no more than 4 foot above the ground.

Substantiation: This section as proposed is not clear. It says “50% of the over-all length”. An ambulance is normally 264 in. long. Following the “50% formula” there needs to be 132 in. of reflective material. Question: What width? 1/4 in. wide by 132 in. long? or 24 in. wide by 132 in. long? By specifying a minimum width and length it is more clear. Also not specifying color allows organizations to maintain their companies color coordination.

Committee Meeting Action: Reject

Committee Statement: Committee wants to be consistent with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-812 Log #1241 **Final Action: Reject**
(6.29.2)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

6.29.2 The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total vertical width.

Substantiation: If each stripe is 6 inches wide as stated in 6.29.1.3 then this section is geometrically impossible. Since a stripe 6 inches wide will have a vertical height of 8.485 inches.

As in 6.29.1.3 the number “4 inches” is impossible, and therefore this line should be removed. If the chevron is 45 degrees on both sides, and the stripe width is 6 inches that is all the definition needed.

Committee Meeting Action: Reject

Committee Statement: Committee wants to be consistent with NFPA 1901, *Standard for Automotive Fire Apparatus* and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-813 Log #1824 **Final Action: Reject**
(6.29.3, 6.29.4, and 6.29.5)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

6.29.3 The 4 in. (100 mm) wide stripe or combination of stripes shall be permitted to be interrupted by objects (i.e., receptacles, cracks between slats in roll up doors, and so forth) provided the full stripe is seen as conspicuous when approaching the apparatus.

6.29.4 A graphic design shall be permitted to replace all or part of the required striping material if the design or combination thereof covers at least the same perimeter length(s) required by 6.29.1.

6.29.5 Any vertically hinged door of over 1152 square inches shall have at least 60 in.2 (38710 mm2) a two(2) inch strip of red running the height of the door starting within 6 inches of the top and ending within 6 inches of the bottom along the outside portion of the inside of the door of retro reflective material affixed to the inside of the door or two(2) red lights that shall flash alternately when the door is opened. The lights shall be located within 6 inches of the top and bottom of the door to the outside edge of the inside of the door.

Substantiation: This will make any door that is large enough to protrude into traffic or pedestrians going by the ambulance to be readily seen thus eliminating a potential hazard.

Committee Meeting Action: Reject

Committee Statement: Committee wants to be consistent with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R.,

Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-814 Log #1849 **Final Action: Reject**
(6.29.3, 6.29.4, and 6.29.5)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

6.29.3 The 4 in. (100 mm) wide stripe or combination of stripes shall be permitted to be interrupted by objects (i.e., receptacles, cracks between slats in roll up doors, and so forth) provided the full stripe is seen as conspicuous when approaching the apparatus.

6.29.4 A graphic design shall be permitted to replace all or part of the required striping material if the design or combination thereof covers at least the same perimeter length(s) required by 6.29.1.

6.29.5 Any vertically hinged door of over 1152 square inches shall have at least 60 in.2 (38710 mm2) a two(2) inch strip of red running the height of the door starting within 6 inches of the top and ending within 6 inches of the bottom along the outside portion of the inside of the door of retro reflective material affixed to the inside of the door or two(2) red lights that shall flash alternately when the door is opened. The lights shall be located within 6 inches of the top and bottom of the door to the outside edge of the inside of the door.

Substantiation: This will make any door that is large enough to protrude into traffic or pedestrians going by the ambulance to be readily seen thus eliminating a potential hazard.

Committee Meeting Action: Reject

Committee Statement: The committee wants to be consistent with NFPA 1901, *Standard for Automotive Fire Apparatus*, and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-815 Log #1759 **Final Action: Reject**
(6.29.4)

Submitter: John Killeen, Ambulance Visibility

Recommendation: Revise text to read as follows:

6.29.4 - A graphic design shall be permitted to replace all or part of the required striping material if the design or combination thereof uses retro-reflective yellow or fluorescent yellow, yellow/green or red material and covers at least the same perimeter length(s) required by 6.29.1.

Substantiation: Efforts to apply satisfactory chevron fields to the rear of emergency vehicles can be difficult when the rear of the vehicle has an unusual shape, a large number of warning lamps or the rear doors and windows interfere with optimal application especially in van types. Flexibility in applying markings is provided by permitting areas of the chevron coverage to be replaced by a solid fluorescent color. This can be particularly important to ensure the legibility and clarity of identification lettering (text). Complex body shapes or lamp and equipment hardware on the rear of vehicles can restrict the successful application of a pattern (that may be in itself complex e.g. chevrons) and may lead to additional confusion in visualizing the vehicle's shape and profile.

Figures 1 and 2 on the next page portray chevron layouts that would be compliant under the draft proposal. Figure 3 shows a borderline (but compliant) layout and Figure 4 would be non-compliant. Under the proposed revision Figure 4 and other versions with less than 50% coverage would be compliant. This revision would allow greater flexibility in adapting safety marking to the rear surface of different ambulance body types.

I have been researching emergency vehicle conspicuity for 13 years and have designed vehicle safety markings for agencies in Australia and the United States. During those consultations I have adapted chevron patterns for those agencies that require the pattern be fitted to their vehicles. In almost every case a wide stripe pattern has provided a better solution than narrow stripes; with the view expressed by the agencies that there is less visual overload using the wider stripes. Those Australian ambulance agencies that applied chevrons to their vehicles have all chosen wide stripes. Chevrons were a major topic in October 2010 when I was a keynote speaker at the 3rd Annual Safety Summit in Colorado presenting on emergency vehicle visibility and conspicuity.

See links to the Ambulance Visibility PowerPoint presentations on the next page

Chevron patterns still remain unproven with little published analysis demonstrating the effectiveness of the retro-reflective design now being used on the rear of emergency vehicles. The chevron pattern can also diffuse the outline of the vehicle - See the two reports by Martin Langham linked below.

Some possible layout options for chevrons and/or fluorescent solid colors after revision

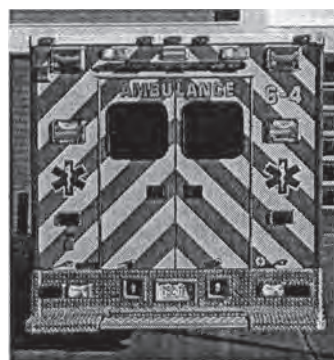


Figure 1 – Original Proposal



Figure 2 – Modified Version 1



Figure 3 – Modified Version 2

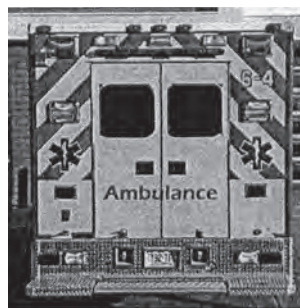


Figure 4 – Modified Version 3

Committee Meeting Action: Reject

Committee Statement: Committee wants to be consistent with NFPA 1901, *Standard for Automotive Fire Apparatus* and 1906, *Standard for Wildland Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-816 Log #1303 **Final Action: Reject**
(6.29.5)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

6.29.5 Any vertically hinged passage door shall have at least 60 in.2 (38710 mm2) of retroreflective material affixed to the inside of the door.

Substantiation: This requirement seems reasonable for passage doors but excessive for compartment doors.

If retroreflective material is required on compartment doors, the retroreflective area should be proportional to the door size. Say, 1 in² retroreflective area per 40 in² of door area.

Committee Meeting Action: Reject

Committee Statement: The committee does not want any doors hit.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-817 Log #1637 **Final Action: Reject**
(6.30)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Move 6.30 to chapter 4 or 5.

Substantiation: Chapter 6 is requirements for patient compartment. The requirements in 6.30 apply to more than just the patient compartment.

Committee Meeting Action: Reject

Committee Statement: Committee is satisfied with this location.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-818 Log #1638 **Final Action: Reject**
(6.31)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Move 6.31 to chapter 4 or 5.

Substantiation: Chapter 6 is requirements for patient compartment. The requirements in 6.31 apply primarily to the exterior of the ambulance.

Committee Meeting Action: Reject

Committee Statement: Committee is satisfied with this location.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-819 Log #1685 **Final Action: Reject**
(6.32)

Submitter: Peter I. Dworsky, Monoc

Recommendation: 6.32.11.3 The O2 compartment may be the only compartment large enough to secure additional patient movement and immobilization equipment. It should be sufficient to have a divider.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: No recommendation contained in the proposal, and isolation of O2 cylinder is necessary for safety.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-820 Log #CP11 **Final Action: Accept**
(6.32)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

6.32 Oxygen, Main Supply and Installation.

6.32.1 The ambulance shall have a piped medical oxygen system capable of storing and supplying a minimum of 3,000 liters of medical oxygen.

~~6.32.2 The main oxygen supply shall be from a compressed gas cylinder(s) that the purchaser will provide and install at the time the vehicle is placed in service.~~

~~6.32.3 6.32.2~~ If a compressed gas cylinder is used, A cylinder changing wrench shall be furnished, tethered and secured within the oxygen storage compartment.

~~6.32.4 The wrench shall be tethered and secured within the oxygen cylinder compartment.~~

~~6.32.5 6.32.3~~ All oxygen system controls The cylinder controls shall be accessible from the inside the vehicle.

~~6.32.6 6.32.4~~ An oxygen capacity indicator A cylinder pressure indication device shall be visible from the designated primary patient care seating position.

~~6.32.7 6.32.5~~ The oxygen outlet shall be accessible from the designated primary patient care seating position

~~6.32.8 6.32.6~~ The purchaser shall specify the type quantity and location of oxygen outlets.

~~6.32.9 6.32.7~~ Oxygen system shall include the following:

(1) A pressure regulator

(2) Low pressure, electrically conductive, hose and fittings approved for medical oxygen

(3) Oxygen piping shall be concealed and not exposed to the elements, securely supported to prevent damage, and be readily accessible for inspection and replacement.

(4) Oxygen shall be piped to a self-sealing oxygen outlet with a minimum flow rate of 100 LPM at the outlet.

(5) Outlet(s) shall be marked and identified and not interfere with the suction outlet

~~6.32.10 6.32.8~~ Oxygen Pressure Regulator.

~~6.32.10.1 6.32.8.1~~ The medical, oxygen pressure reducing, and regulating valve with inlet filter at the cylinder shall be provided with the following features:

1) Line relief valve set at 200 psi (1380 kPa) maximum

2) Gauge or digital monitor with a minimum range of 0 to 2,500 psi (17,237 kPa)

3) Gauge scale or digital monitor display graduated in not more than 100 psi (690 kPa) increments.

4) Locking adjustment, at 50 +/- 2 psi line pressure.

5) Regulator performance as required at an inlet pressure range from 150 psi to 2,500 psi (1,034 kPa to 17,237 kPa).

~~6.32.10.2 6.32.8.2~~ With the regulator set at 50 +/- 2 psi, a 100 LPM minimum flow rate shall be available at all oxygen outlets.

Substantiation: This section did not allow for users who have liquid oxygen systems. Section has been revised to allow liquid oxygen systems.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-821 Log #585 **Final Action: Accept in Principle**
(6.32.2)

Submitter: Brad Smith, Children's Transport/Children's Healthcare of Atlanta

Recommendation: Revise text to read as follows:

6.32.2 The main oxygen supply shall be a compressed gas cylinder(s) that the purchaser will provide and install at the time the vehicle is placed in service.

An Ambulance Liquid Oxygen Systems (ALOX) containing 8.5 liters or 2.5 liters of liquid oxygen shall be acceptable in the place of compressed gas cylinders.

Substantiation: A compressed medical oxygen H cylinder with 1700 psi flowing at 15 Liter per minute flowing will provide 5.94 hours of oxygen. The same cylinder flowing at 100 lpm (typically used for ventilator dependent patient requiring 100% oxygen) will provide 53.4 minutes of oxygen. This calculation is based on 2200 psi - 5000 psi (residual) multiplied by a tank factor of 3.14 equaling 5338 liters divided by 15 LPM equals 356 min or 5.94 hours of oxygen deliverable to a patient. This would entail changing tanks as many as 3 -4 times per shift.

A 25 liter ALOX unit contains 19352 gaseous liter of oxygen when full. Flowing at 15 liter per minute it will provide 21.5 hours of oxygen. This is essential for Critical Care Transport services who routinely travel greater than 50 miles and are unable to return to their base of operations until the end of shift. the 8.5 liter units are widely used by Air Medical services and are

approved for use by the FAA after extensive testing and certifications.

<http://www.medlox.com/images/Chart-ALOXvsHP.JPG>

<http://www.medlox.com/ga.php>

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-820 (Log #CP11).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-822 Log #1431 **Final Action: Accept in Principle**
(6.32.2)

Submitter: Chad Dotzler, Hennepin EMS

Recommendation: Revise text to read as follows:

The main oxygen supply shall be from either a compressed gas cylinder(s) or a liquid oxygen system that the purchaser will provide and install at the time the vehicle is placed in service.

Substantiation: Liquid Oxygen should not be excluded. It is a proven, low pressure system. It is reliable, efficient, and safe; it does not require a regulator; and it will not become a projectile if punctured. There is no need to change out heavy tanks, and a small EMT 20 can hold approximately 5 "M" cylinders. It only takes 1 person to refill the tank, with little risk of injury, resulting in a reduction in worker's compensation injuries.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-820 (Log #CP11).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-823 Log #1639 **Final Action: Reject**
(6.32.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.32.2 to read as follows:

6.32.2 The main oxygen supply shall be from one or more a-compressed gas cylinder(s) that the purchaser will provide and install at the time the vehicle is placed in service.

Substantiation: This is a minimum standard for ambulances. Who supplies the oxygen cylinder is a procurement issue outside the scope of the standard.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-820 (Log #CP11).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-824 Log #586 **Final Action: Reject**
(6.32.2.11.2)

Submitter: Brad Smith, Children's Transport/Children's Healthcare of Atlanta

Recommendation: Revise text to read as follows:

6.32.11.2 The oxygen compartment shall be provided with at least 9 in. squared (580 mm squared) of open vent to dissipate/vent leaking oxygen to the outside of the ambulance. Vehicles utilizing ALOX (Ambulance Liquid Oxygen) systems shall have louvers integrated into the compartment door providing for the venting/dissipation of leaking oxygen from the compartment. The ALOX unit shall be equipped with a vent tube designed and installed per the manufacturer's specifications from the ALOX unit to the outside of the compartment. The vent tube allows for draining of oxygen and relieving pressure in the ALOX unit.

Substantiation: Whereas ALOX systems are far less likely to leak, louvers in the compartment doors will prevent the accumulation of oxygen in the compartment. The vent tube as specified by the manufacturer will facilitate the safe release of oxygen and pressure from the unit in order the pressure as a part of the process of filling the ALOX system with oxygen.

Committee Meeting Action: Reject

Committee Statement: ALOX Unit mfr's instructions cover the necessary installation & venting requirements.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-825 Log #657 **Final Action: Reject**
(6.32.5)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Revise text to read as follows:

6.32.5 The cylinder controls shall be accessible from the inside the vehicle or electric oxygen system with remote contents gage.

Substantiation: There has been an option for electric oxygen with remote contents gage that has been in use for years in place of the manual type system.

Committee Meeting Action: Reject

Committee Statement: The current language provides for accessibility to control for both electric & manual systems.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-826 Log #1007 **Final Action: Reject**
(6.32.5)

Submitter: Thomas Lenart, CT Dept of Public Health Office of Emergency Medical Services

Recommendation: New text to read as follows:

6.32.5 The cylinder controls shall be accessible from the inside the vehicle *(add) and be equipped with a mechanical assist unit to life and position the cylinder for removal and installation.*

Substantiation: **6.32** Oxygen, main supply and installation-many comments have to do with replacement of the oxygen cylinder, most feel that it should be specified that the vehicle have a mechanical assist to insert and remove the large cylinder. It is as much a safety issue by not having crew members or staff working to life these large cylinders as well as maneuver them in a tight compartment to assure proper alignment.

Committee Meeting Action: Reject

Committee Statement: Mechanical assist equipment should be a customer defined option.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-827 Log #1093 **Final Action: Accept in Principle**
(6.32.8)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.32.8 The purchaser shall specify the type and quantity of oxygen outlets outlet's.

Substantiation: Need to specify the required Quantity of oxygen outlets required using (numbers) as well as tense.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-820 (Log #CP11).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-828 Log #1556 **Final Action: Accept in Principle**
(6.32.8)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.32.8 The purchaser shall specify the type and quantity of oxygen outlet's.

Substantiation: Clarification.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-820 (Log #CP11).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-829 Log #1640 **Final Action: Reject**
(6.32.8)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 6.32.8.

Substantiation: This is a minimum standard for an ambulance. The purchaser and the manufacturer need to work together on many issues if the purchaser is to get what they want. The type of oxygen outlet is just one and this requirement is a procurement issue.

Committee Meeting Action: Reject

Committee Statement: Specification of type & quantity of outlets is important.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-830 Log #37 **Final Action: Accept in Principle**
(6.32.9)

Submitter: Philip Bonaiuto, Mass Dept. of Public Health

Recommendation: Add new text to read as follows:

6.32.9 Oxygen system shall include the following:

- (1) A pressure regulator
- (2) Low pressure, electrically conductive, hose and fittings approved for medical oxygen
- (3) Oxygen piping shall be concealed and not exposed to the elements, securely supported to prevent damage, and be readily accessible for inspection and replacement.
- (4) Oxygen shall be piped to a self-sealing oxygen outlet with a minimum flow rate of 100 LPM at the outlet.
- (5) Outlet(s) shall be marked and identified and not interfere with the suction outlet.
- (6) Ceiling mounted outlets if specified must be recessed and shall not protrude more than 1.0 in. (25 mm).

Substantiation: The Ambulance Regulation Program Staff felt the use of ceiling mounted outlets was prudent only if protection was provided to the patient and EMT's to avoid head injury while in the patient compartment.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-831 (Log #1641).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-831 Log #1641 **Final Action: Accept in Principle**
(6.32.9)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.32.9 to read as follows:

6.32.9 The oxygen system shall include the following:

- (1) A pressure regulator
- (2) Low pressure, electrically conductive, hose and fittings approved for medical oxygen

(3) Oxygen piping that is ~~shall be~~ concealed and not exposed to the elements, securely supported to prevent damage, and be readily accessible for inspection and replacement.

(4) ~~Oxygen shall be piped to a~~ Self-sealing oxygen outlet(s) with a minimum flow rate of 100 LPM at the outlet.

(5) ~~Marking and identification for each outlet(s) shall be marked and identified and such that the marking does not~~ interfere with the suction outlet

Substantiation: The list was not grammatically parallel. Some are separate requirements and some are items in a list.

Committee Meeting Action: Accept in Principle

Revise 6.32.9 to read as follows:

6.32.9 The oxygen system shall include the following:

- (1) A pressure regulator
- (2) Low pressure, electrically conductive, hose and fittings approved for medical oxygen
- (3) Oxygen piping that is ~~shall be~~ concealed and not exposed to the elements, securely supported to prevent damage, and be readily accessible for inspection and replacement.
- (4) ~~Oxygen shall be piped to a~~ Self-sealing oxygen outlet(s) with a minimum flow rate of 100 LPM at the outlet.
- (5) ~~Marking and identification for each outlet(s) shall be marked and identified and such that the marking does not~~ interfere with the suction outlet
- (6) ~~Ceiling mounted outlets if specified must be recessed and shall not protrude more than 1.0 in. (25 mm).~~

Committee Statement: The committee added item #6 from 1917-830 (Log #37).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-832 Log #1642 **Final Action: Accept**
(6.32.10.1 through 6.32.10.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 6.32.10.1 through 6.32.10.3 to read as follows:

6.32.10.1 The medical; oxygen pressure reducing; and regulating valve system with inlet filter at the cylinder shall be provided with the following features:

- 1) An inlet filter at the cylinder
- 2) A line relief valve set at 200 psi (1380 kPa) maximum
- 3) A gauge or digital monitor with a minimum range of 0 to 2,500 psi (17,237 kPa)
- 3) Gauge scale or digital monitor display graduated in not more than 100 psi (690 kPa) increments.
- 4) A locking adjustment preset; at 50 +/- 2 psi line pressure.
- 6.32.10.2** The regulator shall meet the performance as required by 6.32.10.3 at an inlet pressure range from 150 psi to 2,500 psi (1,034 kPa to 17,237 kPa).
- 6.32.10.3** With the regulator set at 50 +/- 2 psi, a 100 LPM minimum flow rate shall be available at all oxygen outlets.

Substantiation: The current wording is confusing. The revisions provide clarification of the requirements. Adding the word "system" allows for multiple components rather than it all having to be in one component.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-833 Log #71 **Final Action: Reject**
(6.32.11.3)

Submitter: William von Zehle, Jr., Wilton Emergency Medical Services

Recommendation: Revise text to read as follows:

Oxygen cylinder compartment shall not be utilized for storage of any other equipment and shall be labeled "Oxygen Storage Only".

Substantiation: Other items can be safely stored in this compartment provided they do not present a hazard of sparring or open flame.

Committee Meeting Action: Reject

Committee Statement: Isolation of O2 cylinder is necessary for safety. The possibility of storing equipment with contamination of oils or other materials is a risk or fire hazard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-834 Log #237 **Final Action: Reject**
(6.32.11.3)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Delete the following text:

6.32.11.3 Oxygen cylinder compartment shall not be utilized for storage of other equipment and shall be labeled “Oxygen Storage Only”.

Substantiation: The main “On Board” Oxygen Cylinder (Size “H” or “M”) compartment is usually on the outside of the vehicle. This compartment also usually has a automatic lift for the O2 bottle. There is room within this compartment to hold a Flathead Axe and Hallogen Pry Bar within brackets. The driver can place their PPE Coat & Helmet in this compartment. I have seen Flashlights, Gloves, Jumper Cables and other small non-hazardous equipment within this compartment. Space on ambulances is very limited. With proper equipment brackets items can be stored within the oxygen compartment.

Committee Meeting Action: Reject

Committee Statement: Isolation of O2 cylinder is necessary for safety. The possibility of storing equipment with contamination of oils or other materials is a risk or fire hazard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-835 Log #249 **Final Action: Reject**
(6.32.11.3)

Submitter: Robert Rudelitch, Myrtle Beach, SC

Recommendation: Revise text to read as follows:

6.32.11.3 Oxygen cylinder compartment shall not be utilized for storage of any other equipment and shall be labeled “Oxygen Storage Only”.

Oxygen Cylinder Space should be allowed for some equipment storage e.g. firefighting hand tools like hooks, iron sets, and other easily movable tools. Equipment like KED's or Firefighter PPE, Hooks are commonly used in that current space. Exterior equipment space is very limited these years due to continued EMS Medical equipment expansions and Fire based EMS service PPE requirements.

Substantiation: Equipment like KED's, Limb immobilization devices, Firefighter PPE and / or hand tools are commonly used in that current space. Exterior equipment space is very limited these years due to continued EMS Medical equipment expansions and Fire based EMS service PPE requirements.

Committee Meeting Action: Reject

Committee Statement: Isolation of O2 cylinder is necessary for safety. The possibility of storing equipment with contamination of oils or other materials is a risk or fire hazard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-836 Log #570 **Final Action: Reject**
(6.32.11.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Oxygen cylinder compartment shall not be utilized for storage of any other equipment and shall be labeled “Oxygen Storage Only”.

Substantiation: The proposed standard lacks data to support standard. This standard should be carefully reviewed to determine with scientific certainty those items that may be safely stored while secured in this compartment.

Committee Meeting Action: Reject

Committee Statement: Isolation of O2 cylinder is necessary for safety. The possibility of storing equipment with contamination of oils or other materials is a risk or fire hazard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-837 Log #1215 **Final Action: Reject**
(6.32.11.3)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

Oxygen cylinder compartment shall not be utilized for storage of any other equipment and shall be labeled “Oxygen Storage Only”.

Substantiation: The proposed standard lacks data to support standard.

Committee Meeting Action: Reject

Committee Statement: Isolation of O2 cylinder is necessary for safety. The possibility of storing equipment with contamination of oils or other materials is a risk or fire hazard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-838 Log #1304 **Final Action: Reject**
(6.32.11.3)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

6.32.11.3 Oxygen cylinder compartment shall not be utilized for storage of any other equipment and shall be labeled “Oxygen Storage Only”.

Substantiation: We can find no basis for excluding all other equipment from the oxygen cylinder compartment.

Committee Meeting Action: Reject

Committee Statement: Isolation of O2 cylinder is necessary for safety. The possibility of storing equipment with contamination of oils or other materials is a risk or fire hazard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-839 Log #1825 **Final Action: Reject**
(6.32.11.3)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

6.32.11.3 Oxygen cylinder compartment shall not be utilized for storage of any other equipment that is electrical or is readily capable of producing a spark. If other items are store in this compartment it shall be separated from the cylinder by a fixed divider or shelf and shall be labeled “Oxygen Storage Only”.

Substantiation: Allows better utilization of space without adding a explosive condition.

Committee Meeting Action: Reject

Committee Statement: Isolation of O2 cylinder is necessary for safety. The possibility of storing equipment with contamination of oils or other materials is a risk or fire hazard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-840 Log #1850 **Final Action: Reject**
(6.32.11.3)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

6.32.11.3 Oxygen cylinder compartment shall not be utilized for storage of any other equipment that is electrical or is readily capable of producing a spark. If other items are store in this compartment it shall be separated from the cylinder by a fixed divider or shelf and shall be labeled “Oxygen Storage Only”.

Substantiation: Allows better utilization of space without adding a explosive condition.

Committee Meeting Action: Reject

Committee Statement: Isolation of O2 cylinder is necessary for safety. The possibility of storing equipment with contamination of oils or other materials is a risk or fire hazard.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 24 Negative: 3**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

COLE, D.: This log should be accepted. The O2 compartment is used throughout the industry to store other items. If this standard was realistic it would provide this log as a means to improve safety. I also challenge the committee to suggest when a fire was reported because of this O2 issue

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-841 Log #723 **Final Action: Accept in Principle**
(6.32.12.6)

Submitter: Andrew J. Alger, Progressive Engineering Inc.**Recommendation:** Revise text to read as follows:

6.32.12.6 Compliance of the oxygen tank retention shall be validated by testing a sample retention device using a substantially similar ambulance or body structure in accordance with section 9.x (see attached sheet) ~~AMD-003; Oxygen Tank Retention System Static Test~~.

Substantiation: I would like to have NFPA control the test methods.

Note: Supporting material is available for review at NFPA Headquarters.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-3 (Log #12).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-842 Log #724 **Final Action: Accept**
(6.32.13)

Submitter: Andrew J. Alger, Progressive Engineering Inc.**Recommendation:** Revise text to read as follows:

6.32.13 Oxygen System Integrity.

6.32.13.1 Each ambulance equipped with an oxygen system shall be tested prior to delivery.

6.32.13.1.1 The oxygen system shall lose no more than 5 psi (34 kPa) of pressure in a 2 hour period.

6.32.13.1.2 Oxygen flow through each outlet shall be capable of delivering at least 100 LPM of oxygen.

~~6.32.13.1.3 Compliance of the oxygen system integrity shall be validated by testing a sample system in a substantially similar ambulance in accordance with AMD 015, Ambulance Main Oxygen System Test.~~

Substantiation: There is a conflict with the way the draft was written. Take out section 6.32.13.1.3 and the conflict goes away.**Committee Meeting Action: Accept****Committee Statement:** See committee action on Proposal 1917-3 (Log #12).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-843 Log #72 **Final Action: Accept**
(6.32.13.1)

Submitter: William von Zehle, Jr., Wilton Emergency Medical Services**Recommendation:** Revise to read as follows:

The oxygen system of ~~each~~ ambulance ~~equipped with an oxygen system~~ shall be tested prior to delivery.

Substantiation: Paragraph 6.3.2.1 states that, "The ambulance shall have a piped medical oxygen system capable of storing and supplying a minimum of 3,000 liters of medical oxygen." Since all ambulances are required to carry oxygen, paragraph 6.32.13.1 needs to be revised.

Committee Meeting Action: Accept**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-844 Log #1643 **Final Action: Accept in Part**
(6.32.13.1.3 and 6.32.13.2)

Submitter: Carl E. Peterson, Hingham, MA**Recommendation:** Revise 6.32.13.1.3 to read as follows:

6.32.13.1.3 Compliance of the oxygen system integrity shall be validated by testing ~~a sample system in a substantially similar ambulance~~ in accordance with AMD 015, Ambulance Main Oxygen System Test.

Revise 6.32.13.2 to read as follows:

6.32.13.2 A label shall be provided near the oxygen tank stating: "The integrity of this oxygen system was tested in accordance with NFPA 1917 on (*tested date*) and meets the requirements thereof".

Substantiation: Paragraph 6.32.13.1 requires each ambulance equipped with an oxygen system to be tested prior to delivery.

The change to 6.32.13.2 is for clarification, as only the integrity is tested on each ambulance, not the other requirements of 6.32. Adding a date to the label required in 6.32.13.2 clarifies when the system integrity was tested. If the integrity is retested in the future, the persons who did the test can add a new date to the label with an adhesive backed label.

Committee Meeting Action: Accept in Part

Revise to read as follows:

6.32.13.2 A label shall be provided near the oxygen tank stating: "The integrity of this oxygen system was tested in accordance with NFPA 1917 on (*tested date*) and meets the requirements thereof".

Committee Statement: The committee accepted 6.32.13.2. The committee acted on 1917-3 (Log #12) which changed 6.32.13.1.3.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-845 Log #1094 **Final Action: Reject**
(6.32.13.1.3)

Submitter: Randy A. Hanson, American Emergency Vehicles**Recommendation:** Revise text to read as follows:

6.32.13.1.3 Compliance of the oxygen system integrity shall be validated by testing each ~~a sample system in a substantially similar ambulance~~ in accordance with AMD 015, Ambulance Main Oxygen System Test.

Substantiation: This testing must be completed on every ambulance, type testing is not applicable.**Committee Meeting Action: Reject****Committee Statement:** See committee action on Proposal 1917-3 (Log #12).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-846 Log #1539 **Final Action: Reject**
(6.32.13.1.3)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association**Recommendation:** Revise text to read as follows:

6.32.13.1.3 Compliance of the oxygen system integrity shall be validated by testing EACH ~~a sample system in a substantially similar ambulance~~ in accordance with AMD 015, Ambulance Main Oxygen System Test.

Substantiation: The O2 system for each ambulance is tested now under the K-Spec, and this should continue to be a requirement.**Committee Meeting Action: Reject****Committee Statement:** See committee action on Proposal 1917-3 (Log #12).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-847 Log #1546 **Final Action: Accept in Principle**
(6.33)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.33.4 The suction pump shall be located in an area that is accessible FOR SERVICE and insulated from the patient compartment. **6.33.5** The pump, when permanently mounted,

6.33.6 A vacuum control and a shut-off valve, or combination thereof, shall be provided to adjust vacuum levels.

6.33.4 The suction pump shall be located in an area that is accessible and insulated from the patient compartment.

Substantiation: It doesn't matter where the pump is - it just needs to be accessible. Keep it performance based so design isn't constrained.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-848 (Log #CP25).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-848 Log #CP25 **Final Action: Accept**
(6.33)

Submitter: Technical Committee on Ambulances,

Recommendation: Revise text to read as follows:

6.33.4 The suction pump shall be located in an area that is accessible and insulated from the patient compartment. Any permanently mounted suction pump shall be located in an area that is accessible for service.

6.33.5 The pump, when permanently mounted, shall be vented to the vehicle's exterior. Any permanently mounted suction pump shall be vented to the vehicles exterior.

Substantiation: Clarified the intent of the standard.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-849 Log #658 **Final Action: Reject**
(6.33.3)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Add new text to read as follows:

6.33.3 The aspirator system shall be wired in accordance with Figure 6.33.3 if permanently mounted.

Substantiation: This diagram would only need to be used for permanently mounted on board suction systems.

Committee Meeting Action: Reject

Committee Statement: Drawing reference in 6.33.3 is deleted in Proposal 1917-850 (Log #1095).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-850 Log #1095 **Final Action: Accept**
(6.33.3)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text as follows:

6.33.3 The aspirator system shall be wired in accordance with Figure 6.33.3: Figure 6.33.3 Aspirator System Wiring

Substantiation: A drawing does not reflect the aspirator system individually. The drawing shows general switching arrangements for components downstream from the battery switch.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-851 Log #1305 **Final Action: Accept**
(6.33.3)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

6.33.3 The aspirator system shall be wired in accordance with Figure 6.33.3:

Substantiation: There is no logical basis for prescribing the wiring configuration for this one among many electrical components on the ambulance.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-852 Log #1547 **Final Action: Accept**
(6.33.3)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Delete text to read as follows:

6.33.3 The aspirator system shall be wired in accordance with Figure 6.33.3: Figure 6.33.3 Aspirator System Wiring

Substantiation: Delete – the drawing doesn't make sense for the aspirator system.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-853 Log #659 **Final Action: Reject**
(6.33.4)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Revise text to read as follows:

6.33.4 The suction system shall be located in an area that is accessible in patient compartment.

Substantiation: Today we have new portable on board suction systems that can be used on or taken off the ambulance that has better performance and quieter than what has been used in the past. this gives the end user a choice as long as it meets the performance standard.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-848 (Log #CP25).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-854 Log #1096 **Final Action: Reject**
(6.33.4)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.33.4 The suction pump shall be located in an area that is accessible for service and insulated from the patient compartment.

Substantiation: The suction pump needs to be accessible for service but has no reason to be required inside the patient compartment.

In modular construction the pump can be isolated in an exterior compartment to minimize noise.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-848 (Log #CP25).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-855 Log #660 **Final Action: Reject**
(6.33.5 (New))

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Add new text to read as follows:

6.33.5 The pump, if portable shall be charged from shore power when plugged in and chassis 12 volt when off shore power.

Substantiation: Revise text to allow for portable combo suction units.

Committee Meeting Action: Reject

Committee Statement: Full time charging would create a parasitic load when the vehicle is not running.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-856 Log #238 **Final Action: Accept**
(6.33.7)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Revise text to read as follows:

6.33.7 A vacuum indicator gauge graduated at least every 100 mm Hg or 2 in Hg and a minimum total range of 0 to 760 mm Hg or 0 to 30 in Hg shall be provided.

Substantiation: There are many ways to read vacuum. Companies should be allowed to have either Metric or English readings of Vacuum.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-857 Log #1368 **Final Action: Reject**
(6.33.9)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Suction Aspirator / The minimum inside diameter for the suction tubing connectors shall be at least 1/4 in. (6.4 mm). The hose and fittings will be made conductive as the suction aspirator is often used in conjunction with oxygen.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: No substantiation & proposal is unclear.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-858 Log #1644 **Final Action: Accept**
(6.33.10)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 6.33.10.

Substantiation: The end user can provide any suctioning catheters they desired without it being stated in a minimum standard.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-859 Log #1548 **Final Action: Accept in Part**
(6.33.11)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

6.33.11.1 If an aspirator system is provided, it shall provide a free airflow of at least 30 Lpm.

6.33.11.2 If an aspirator system is provided, it shall achieve a minimum of 300 mm Hg vacuum within 4 seconds after the suction tube is closed.

6.33.11.3 Compliance of the aspirator system shall be validated by testing EACH a sample aspirator system installed in a substantially similar ambulance in accordance with AMD 021, Primary Patient Aspirator System Test.

Substantiation: This is a basic system that needs to go on each vehicle, with each vehicle having it's system tested during production.

Committee Meeting Action: Accept in Part

Revise text to read as follows:

6.33.11.1 If an aspirator system is provided, it shall provide a free airflow of at least 30 Lpm.

6.33.11.2 If an aspirator system is provided, it shall achieve a minimum of 300 mm Hg vacuum within 4 seconds after the suction tube is closed.

Committee Statement: The committee changed the reference to the AMD Standard in 1917-3 (Log #12) and did not accept the change in 6.33.11.3.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-860 Log #1097 **Final Action: Accept in Principle**
(6.33.11.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

6.33.11.1 If an aspirator system is provided, it shall provide a free airflow of at least 30 Lpm.

Substantiation: 6.33.1 requires an aspirator system.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-859 (Log #1548).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-861 Log #1242 **Final Action: Accept in Principle**
(6.33.11.1)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

6.33.11.1 If an aspirator system is provided, It shall provide a free airflow of at least 30 Lpm.

Substantiation: Section 6.33.1 states an "An electrically powered suction aspirator system shall be furnished." Thus mandatory, so why does section 6.33.11.1 state "If".

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-859 (Log #1548).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-862 Log #661 **Final Action: Accept in Principle**
(6.33.11.1 (New))

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Add new text to read as follows:

6.33.11.1 Aspirator system shall provide a free airflow of at least 30 Lpm.

Substantiation: In 6.33.1 it says a system shall be provided.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-859 (Log #1548).

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-863 Log #1098 **Final Action: Accept in Principle**
(6.33.11.2)

Submitter: Randy A. Hanson, American Emergency Vehicles**Recommendation:** Revise text to read as follows:

6.33.11.2 ~~Has~~ The aspirator system is provided, it shall achieve a minimum of 300 mm Hg vacuum within 4 seconds after the suction tube is closed.

Substantiation: 6.33.1 requires an aspirator system.**Committee Meeting Action: Accept in Principle****Committee Statement:** See committee action on Proposal 1917-859 (Log #1548).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-864 Log #662 **Final Action: Accept in Principle**
(6.33.11.2 (New))

Submitter: Fred Schimmel, SJC Industries Corporation**Recommendation:** Add new text to read as follows:

6.33.11.2 Aspirator system shall achieve a minimum of 300 mm Hg vacuum within 4 seconds after the suction tube is closed.

Substantiation: In 6.33.1 it says a system shall be provided.**Committee Meeting Action: Accept in Principle****Committee Statement:** See committee action on Proposal 1917-859 (Log #1548).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-865 Log #1099 **Final Action: Accept in Principle**
(6.33.11.3)

Submitter: Randy A. Hanson, American Emergency Vehicles**Recommendation:** Revise text to read as follows:

6.33.11.3 Compliance of the aspirator system shall be validated by testing each a sample aspirator system installed in a substantially similar ambulance in accordance with AMD 021, Primary Patient Aspirator System Test.

Substantiation: This is not a type test, each individual vehicle must be tested.**Committee Meeting Action: Accept in Principle****Committee Statement:** See committee action on Proposal 1917-859 (Log #1548).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-866 Log #1645 **Final Action: Accept in Principle**
(6.33.11.3)

Submitter: Carl E. Peterson, Hingham, MA**Recommendation:** Revise 6.33.11.3 to read as follows:

6.33.11.3 Compliance of the aspirator system shall be validated by testing the system after installation a sample aspirator system installed in a substantially similar ambulance in accordance with AMD 021, Primary Patient Aspirator System Test.

Substantiation: AMD 021 requires each system to be tested.**Committee Meeting Action: Accept in Principle****Committee Statement:** See committee action on Proposal 1917-859 (Log #1548).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-867 Log #1026 **Final Action: Reject**
(6.69.1)

Submitter: Jim Fingerhut, St. Charles County Ambulance District**Recommendation:** Delete text to read as follows:

A retro-reflective stripe or combination of stripes shall be affixed to the ambulance in the following propositions:

(1) 25 percent of the width of the front of the apparatus visible when approaching from the front.

(2) 50 percent of the over all ambulance length visible when approaching from each side

Substantiation: This is excessive since most ambulance accidents occur during daylight hours at intersection on clear dry days. How does this standard reduce the likelihood of that issue?

Committee Meeting Action: Reject**Committee Statement:** See committee action on Proposal 1917-782 (Log #CP24).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-868 Log #51 **Final Action: Reject**
(Chapter 7 and Chapter 8)

Submitter: Fred Morrison, Eagle County Ambulance District**Recommendation:** Add new text to read as follows:

All electrical components shall be certified for operation in oxygen rich environment.

Substantiation: No mention of being in an oxygen rich environment in either electrical chapter.

Committee Meeting Action: Reject**Committee Statement:** Rejected on basis that the proposal is overly broad.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-869 Log #1646 **Final Action: Reject**
(Chapter 7)

Submitter: Carl E. Peterson, Hingham, MA**Recommendation:** Add a chapter title to read “Low Voltage Electrical Systems and Warning Devices”**Substantiation:** There is no chapter title in the draft.**Committee Meeting Action: Reject****Committee Statement:** Title already there.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-870 Log #1369 **Final Action: Reject**
(7.1.1.1)

Submitter: Mark Spivey, Kinequip, Inc.**Recommendation:** Revise text to read as follows:

When printed circuits are utilized, they shall conform to IPC A-610D standards, “Acceptability of Electronic Assemblies.”

Substantiation: It should be verified that all circuit boards in the products used are also compliant or is a listed tested device.

Committee Meeting Action: Reject**Committee Statement:** Language already included.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-871 Log #42 **Final Action: Accept in Principle**
(7.1.1.2)

Submitter: Alexander Cook, Vanner, Inc.

Recommendation: Revise text to read as follows:

Where used in a critical applications Printed circuit assemblies provided shall qualify under Classification 1.4.1 as class 3 for “Life Support or other Critical Assemblies.” Where use in a non critical application printed circuit assemblies provided shall qualify under Classification 1.4.1 as class 2 “for commercial and industrial assemblies”.

Substantiation: Printed circuits are becoming ubiquitous, from high efficiency lighting to Engine ECUs and radios, they are made for broader consumption and are not made to critical assembly standards and so would violate the standard as written. I would suggest limiting the requirement to assemblies which are truly critical.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

7.1.1.2 Printed circuit assemblies provided shall qualify under Classification 1.4.1 as class 3 for “Life Support or other Critical Assemblies.” Class 2 “For Commercial and Industrial Assemblies”, or better.

Committee Statement: Revised text for clarity.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-872 Log #1243 **Final Action: Reject**
(7.1.1.2)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

7.1.1.2 Printed circuit assemblies provided shall qualify under Classification 1.4.1 as class 3 for “Life Support or other Critical Assemblies.” ALL Class 3 circuits must have switch operated overrides that can be accessed by the EMSP in the event of software or circuit failure.

Substantiation: With the current state of integrated circuitry, there needs to be a mandatory way to override the “software” glitch and turn the component on manually.

Committee Meeting Action: Reject

Committee Statement: Adding override switches for multiplexed circuits would be difficult if possible and would drive up the costs of the electrical system.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-873 Log #1370 **Final Action: Reject**
(7.1.1.2)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Printed circuit assemblies provided shall qualify under Classification 1.4.1 as class 3 for “Life Support or other Critical Assemblies.”

Substantiation: It should be verified that all circuit boards in the products used are also compliant or is a listed tested device.

Committee Meeting Action: Reject

Committee Statement: Language already there. See 1917-871 (Log #42).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-874 Log #1371 **Final Action: Reject**
(7.1.1.2)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Printed circuit board connections and components shall conform to all other specification requirements.

Substantiation: It should be verified that all other products with connectors are also compliant.

Committee Meeting Action: Reject

Committee Statement: No specification listed, not even sure what the proposal wants us to change.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-875 Log #1372 **Final Action: Reject**
(7.1.1.2)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Wire shall be stranded copper or ~~copper alloy~~.

Substantiation: Copper alloy allows for mixed materials to be used possibly reducing the wires performance. This has been an issue when importing wire from overseas. This will impede the ability to meet the voltage spec 7.2.1.2.

Committee Meeting Action: Reject

Committee Statement: The committee did not have enough time to do research to confirm these statements.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-876 Log #1100 **Final Action: Reject**
(7.2.1.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.2.1.1* The circuit feeder wire shall be stranded copper ~~or copper alloy~~ conductors of a gauge rated to carry 125 percent of the maximum current for which the circuit is protected.

Substantiation: The use of copper alloy wiring may impede the ability to meet the voltage drop spec. 7.2.1.2

Committee Meeting Action: Reject

Committee Statement: The committee did not have enough time to do research to confirm these statements.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-877 Log #1101 **Final Action: Reject**
(7.2.1.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text as follows:

7.2.1.2 Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent.

Substantiation: Voltage drops of 20% can occur with no adverse effects - we have a requirement for wiring to be capable of carrying 125% of the rated load.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-879 (Log #1413).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-878 Log #1373 **Final Action: Reject**
(7.2.1.2)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent.

Substantiation: The test setup needs to be defined. Is the vehicle running at high idle as most tests are? This requirement may eliminate the ability to daisy chain lighting circuits. It will be more difficult to meet this requirement if copper alloy wire is used instead of virgin copper.

Committee Meeting Action: **Reject**

Committee Statement: See committee action on Proposal 1917-879 (Log #1413).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-879 Log #1413 **Final Action: Accept**
(7.2.1.2)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

7.2.1.2: Voltage drops in all wiring from the power source to the using device shall not exceed ~~10%~~ 0.5 V DC.

Substantiation: Worldwide specification for automotive wiring voltage drop is from .25-.5 volts maximum. Having a 10% maximum limitation could allow for voltage drops from 1.2-1.4 VDC in a 12/14 VDC automotive electrical system.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-880 Log #1102 **Final Action: Reject**
(7.2.1.3)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text as follows:

7.2.1.3 The use of star washers for circuit ground connections shall not be permitted.

Substantiation: Why would we not use external tooth lock washers "star washers" for this purpose. This is an ideal use for the product application.

Committee Meeting Action: **Reject**

Committee Statement: Star washer use on the exterior of a vehicle can lead to corrosion that can not be seen. Industry standard is no star washers.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-881 Log #1374 **Final Action: Reject**
(7.2.1.3)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

The use of star washers for circuit ground connections shall not be permitted.

Substantiation: This is an example where it may not be clear if the ground being referred to is the protective ground or D/C return.

Committee Meeting Action: **Reject**

Committee Statement: Star washer use on the exterior of a vehicle can lead to corrosion that can not be seen. Industry standard is no star washers.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-882 Log #1103 **Final Action: Accept in Principle**
(7.2.1.5)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.2.1.5 Electrical wiring and components shall not terminate in the oxygen storage compartment except for the oxygen controlled solenoid, compartment light, and switch plunger or trigger device and 02 lifts.

Substantiation: Electrical powered 02 bottle lifts are a common option.

Committee Meeting Action: **Accept in Principle**

Revise text to read as follows:

~~7.2.1.5 Electrical wiring and components shall not terminate in the oxygen storage compartment except for the oxygen controlled solenoid, compartment light, and switch plunger or trigger device. Only electrical components directly related to the delivery of on-board oxygen shall terminate in the oxygen storage compartment.~~

Committee Statement: The committee rewrote to get in proper sequence with other logs.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-883 Log #1306 **Final Action: Accept in Principle**
(7.2.1.5)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

7.2.1.5 Electrical wiring and components shall not terminate in the oxygen storage compartment except for the oxygen controlled solenoid, oxygen pressure transducer, compartment light, and switch plunger or trigger device. **Substantiation:** The solenoid is not controlled by the oxygen; it controls the oxygen. It should therefore be referred to as the oxygen control solenoid.

Electric oxygen systems often use a pressure transducer to indicate cylinder content. Because this transducer must be connected on the high pressure side of the regulator, the spec should allow for wiring to the transducer.

Committee Meeting Action: **Accept in Principle**

Committee Statement: See committee action on Proposal 1917-882 (Log #1103).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-884 Log #1549 **Final Action: Accept in Principle**
(7.2.1.5)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

7.2.1.5 Electrical wiring and components shall not terminate in the oxygen storage compartment except for the oxygen controlled solenoid, oxygen pressure transducer, compartment light, and switch plunger or trigger device. **Substantiation:** Need to add pressure transducer to the list of exceptions.

Committee Meeting Action: **Accept in Principle**

Committee Statement: See committee action on Proposal 1917-882 (Log #1103).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-885 Log #1777 **Final Action: Accept in Principle**
(7.2.1.5)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Revise text to read as follows:

7.2.1.5 Electrical wiring and components shall not terminate in the oxygen storage compartment except for the oxygen ~~controlled~~ control solenoid, compartment light, and switch plunger or trigger device.

Substantiation: The current, draft verbiage suggests the solenoid is controlled by oxygen. It is believe the solenoid controls the oxygen flow. By changing to proposed verbiage, it is easily recognized the oxygen controls the solenoid.

Committee Meeting Action: **Accept in Principle**

Committee Statement: See committee action on Proposal 1917-882 (Log #1103).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-886 Log #1778 **Final Action: Accept in Principle**
(7.2.1.12)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Revise text to read as follows:

7.2.2.12 The ambulance patient module electrical system shall incorporate a master circuit breaker panel with circuit breakers or other electronic, non-disposable, current protection devices, in each circuit, which comply with SAE J553 Type I, or Type III (if circuit breaker is readily accessible for resetting by the driver or EMSP).

Substantiation: The current, draft verbiage suggests the entire electrical system requires a master circuit breaker panel with circuit breakers or other electronic, non-disposable, current protection devices in each circuit. In certain cases, (e.g. Engine ECM) the engine supplier may require disposable, single-use fuses and restricts the use of manual or auto reset circuit breakers. By keeping the draft verbiage, certain practices or requirements by an equipment manufacturer may be prohibited which does not allow for fair marketing. The electrical system of the patient module is protected as desired by the standard with the proposed verbiage.

Committee Meeting Action: **Accept in Principle**

Revise text to read as follows:

7.2.2.12 The ambulance electrical system patient compartment electrical system shall incorporate a master circuit breaker panel with circuit breakers or other electronic, non-disposable, current protection devices, in each circuit, which comply with SAE J553 Type I, or Type III (if circuit breaker is readily accessible for resetting by the driver or EMSP).

Committee Statement: The committee accepts the change, but “Patient Compartment”, rather than “Patient Module”, is in the definitions.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-887 Log #1779 **Final Action: Accept in Principle**
(7.2.1.14.2)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Revise text to read as follows:

17.2.1.14.2 The use of appliance mounting screws/hardware shall not be used for grounding purposes unless specifically designed that purpose.

Substantiation: The current, draft verbiage does not allow for mounting fasteners for grounding purposes even though they may be designed for that purpose, or suitable for such use. In the case of case grounding, the fastener(s) may be suitable, even approved for grounding. By adding the proposed verbiage, special use screws/hardware (casing) is allowed for grounding as long as it is approved or designed for that specific purpose.

Committee Meeting Action: **Accept in Principle**

Revise text to read as follows:

7.2.2.14.2 The use of appliance mounting screws/hardware shall not be used for grounding purposes, unless specifically designed for that purpose.

Committee Statement: Changed proposal text to make it more clear and to correct the paragraph numbering.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-888 Log #1780 **Final Action: Accept in Principle**
(7.2.1.17)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Delete text to read as follows:

7.2.2.1.7 ~~The ambulance body and accessory electrical equipment shall be served by circuit(s) separate and distinct from vehicle chassis circuits.~~

Substantiation: The verbiage as written in the draft isolates the body and accessory equipment from the chassis and/or cab. In certain cases, within the draft standard, seat belt warning indicators, for example, in the patient module would need to be identified by the driver. While the circuit may be independent, the communication link may be tied to the cab/vehicle harness. Further, in order for the brake lights to work on the back of the patient module, for example, they have to receive a signal from the brake pedal. Again, the communication link maybe between the chassis/cab harness and the module harness. The draft verbiage adds too much restriction as written.

Committee Meeting Action: **Accept in Principle**

Revised text to read as follows:

7.2.2.1.17 ~~The ambulance body and accessory patient compartment interior and exterior electrical circuits shall be served powered by circuits separate and distinct from vehicle chassis power circuits, unless specific chassis circuits are supplied for that purpose by the chassis manufacturer.~~

Committee Statement: Changed text to clarify submitters intentions.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-889 Log #1104 **Final Action: Reject**
(7.2.2.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.2.2.1 All insulated wire and cable shall conform to SAE J1127, Low Voltage Battery Cable, or SAE J1128, Low Voltage Primary Cable, type SXL, GXL, ~~or TXL.~~

Substantiation: TXL wiring is not as durable as SXL or GXL because of it's thinner insulation. Ambulances need the highest quality materials available for their severe duty cycles.

Committee Meeting Action: **Reject**

Committee Statement: Language is directly from NFPA 1901, *Standard for Automotive Fire Apparatus* and the committee does not have the time to research a better conclusion.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-890 Log #1375 **Final Action: Reject**
(7.2.2.1)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

All insulated wire and cable shall conform to SAE J1127, Low Voltage Battery Cable, or SAE J1128, Low Voltage Primary Cable, type SXL, GXL, ~~or TXL.~~

Substantiation: TXL has the thinner insulation jacket, is less flexible, and is often referenced to as trailer wire. This wire is less durable and difficult to work with and should be removed from the list.

Committee Meeting Action: **Reject**

Committee Statement: Language is directly from NFPA 1901, *Standard for Automotive Fire Apparatus*, and the committee does not have the time to research a better conclusion.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-891 Log #371 **Final Action: Accept in Principle**
(7.2.2.1.5)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Revise text to read as follows:

All switches, indicators, fuses, circuit breakers and controls shall be located and installed in a manner that facilitates easy removal.

Substantiation: Fuses and circuit breakers are part of the automotive ambulance electrical system and need to be included in proposed standard.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

7.2.2.15 All switches, indicators, fuses, circuit breakers and controls shall be located and installed in a manner that facilitates access easy removal.

Committee Statement: Committee reworded for style.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-892 Log #1105 **Final Action: Reject**
(7.2.2.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.2.2.2 The overall covering of conductors shall be moisture-resistant loom or braid that has a minimum continuous rating of 194°F (90°C) 300 degrees F except where good engineering practice dictates special consideration for loom installations exposed to higher temperatures.

Substantiation: KKK states the loom required must have a 300 degree F rating. This proposed change reduces the protection afforded. We want the protection loom ratings to be greater than the insulation on the wiring.

Committee Meeting Action: Reject

Committee Statement: Language is directly from NFPA 1901, *Standard for Automotive Fire Apparatus* and the committee does not have the time to research a better conclusion.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-893 Log #1376 **Final Action: Reject**
(7.2.2.2)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

The overall covering of conductors shall be moisture-resistant loom or braid that has a minimum continuous rating of 300°G (149°C) 194°F (90°C) except where good engineering practice dictates special consideration for loom installations exposed to higher temperatures.

Substantiation: KKK states that the loom must be 300°F . The reduction in temperature weakens the last defense to a catastrophic harness failure. The spec should stay at 300°F . Any potential cost savings in material is not worth a potential vehicle fire. Also, SAE J1128 requires the wire jacket to be rated at a minimum of 257°F (125°C). The loom should be rated higher so that in the event of a wire insulation failure due to heat or other reasons the loom can be effective in containing the failure.

Committee Meeting Action: Reject

Committee Statement: Language is direct from NFPA 1901, *Standard for Automotive Fire Apparatus*, and the committee does not have the time to research a better conclusion.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-894 Log #1106 **Final Action: Reject**
(7.2.2.3)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.2.2.3 The overall covering of jacketed cables shall be moisture resistant and have a minimum continuous temperature rating of 194°F (90°C) 300 degrees F, except where good engineering practice dictates special consideration for cable installations exposed to higher temperatures.

Substantiation: KKK states the loom required must have a 300 degree F rating. This proposed change reduces the protection afforded. We want the protection loom ratings to be greater than the insulation on the wiring.

Committee Meeting Action: Reject

Committee Statement: Language is directly from NFPA 1901, *Standard for Automotive Fire Apparatus* and the committee does not have the time to research a better conclusion.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-895 Log #1234 **Final Action: Reject**
(7.2.2.4)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

7.2.2.4 All wiring connections and terminations shall ~~use a method that be~~ ultrasonically welded, soldered, or crimped to ensure provides a positive mechanical and electrical connection.

Substantiation: Since many of these circuits are meant to provide for the safety and well being of the patient, there needs to be defined connection parameters, this will ensure that the quality of the circuits doesn't place the patient at risk.

Committee Meeting Action: Reject

Committee Statement: Language too restrictive and might eliminate an acceptable method of termination.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-896 Log #1377 **Final Action: Reject**
(7.2.2.6)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

A minimum 6 in. (152 mm) service loop of wire or harness shall be provided at all electrical components, terminals, and connection points.

Substantiation: The minimum length of the service loop was not defined in the KKK spec. This will add weight and cost to each vehicle and may want to be shortened to 2 in. or 3 in.

Committee Meeting Action: Reject

Committee Statement: 6 in. service loops must be the minimum and sometimes they are not long enough.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-897 Log #285 **Final Action: Reject**
(7.2.2.7)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Revise text to read as follows:

7.2.2.7 All ~~exterior~~ wiring connections ~~to exterior lights and fixtures~~ shall utilize sealed connectors or splices.

Substantiation: Some exterior lights and fixtures have connections that are not exposed to the exterior environment.

Committee Meeting Action: Reject

Committee Statement: The text change does not clarify the current text.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-898 Log #1107 **Final Action: Reject**
(7.2.2.7)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.2.2.7 ~~All Any exposed wiring connections connecting to~~ for exterior lights or and fixtures shall utilize sealed connectors or splices.

Substantiation: Many exterior lights have connections that are made inside the body of the ambulance and are not exposed to the elements. Only connections that are in contact with the elements require sealed connectors.

Committee Meeting Action: Reject

Committee Statement: The text change does not clarify the current text.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-899 Log #1307 **Final Action: Reject**
(7.2.2.7)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

7.2.2.7 All wiring connecting to on the exterior lights and fixtures of the module shall utilize sealed connectors or splices.

Substantiation: Sealed connectors/splices are needed on exterior connections (those made outside of the walls or ceiling of the ambulance) rather than on wiring leading to exterior devices. The spec as originally written would require sealed connectors/splices in the electrical cabinet for conductors leading to exterior lights, but would not require sealed connectors/splices on wiring outside the module serving backup alarms, air suspension, air horns, etc.

Committee Meeting Action: Reject

Committee Statement: The text change does not clarify the current text.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-900 Log #1414 **Final Action: Reject**
(7.2.2.7)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

7.2.2.7: All wiring connecting to exterior lights and fixtures shall utilize sealed connectors or splices rated to a minimum of IP65 with a preferable rating of IP67 (IEC 60529).

Substantiation: No water should penetrate exterior connectors to prevent corrosion or contamination of surrounding components.

Committee Meeting Action: Reject

Committee Statement: The committee does not have time to research into the specifications listed, but it may be too restrictive.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-901 Log #1550 **Final Action: Reject**
(7.2.2.7)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

7.2.2.7 All connectors exposed to the exterior ~~wiring connecting to exterior lights and fixtures~~ shall utilize sealed connectors or splices.

Substantiation: Don't need sealed connectors that are within a wall behind the lamps. Limit the requirement to the connectors that are actually exposed.

Committee Meeting Action: Reject

Committee Statement: The text change does not clarify the current text.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-902 Log #1415 **Final Action: Reject**
(7.2.2.8)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Add text to read as follows:

7.2.2.8: Appropriate mechanical and or thermal protection of all conductors, wiring and or harnesses must be provided to society of Automotive Engineers International Standards SAE J1292 and/or SAE 2174.

Substantiation: Conduit and electrical enclosures provide wiring protection from abrasion, heat, and other adverse mechanical disturbances.

Committee Meeting Action: Reject

Committee Statement: The committee did not have enough information on the SAE specifications. The submitter might wish to provide more substantiating information.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-903 Log #286 **Final Action: Accept**
(7.2.2.9.1)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Revise text to read as follows:

7.2.2.9.1 Wiring shall be uniquely identified at least every ~~2 ft (0.6 m)~~ 4 in. by color coding or permanent marking with a circuit function code.

Substantiation: Marking every 2 feet is too far apart. In section 7.2.2.6 a minimum 6 in. (152 mm) service loop of wire is required which if marked every 2 feet may not show what the circuit is.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-904 Log #1108 **Final Action: Accept in Principle**
(7.2.2.9.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.2.2.9.1 Wiring shall be uniquely identified at least every ~~2 ft (0.6 m)~~ 6 in. by color coding or permanent marking with a circuit function code.

Substantiation: Short runs of wire or confined spaces need marking at closer intervals.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-903 (Log #286).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-905 Log #1233 **Final Action: Accept in Principle**
(7.2.2.9.1)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

7.2.2.9.1 Wiring shall be uniquely identified at least every 2 ft (0.6 m) and shall have identification within 4 inches of termination on both ends by color coding or permanent marking with a circuit function code.

Substantiation: Identifying Wires near the terminations, ensures that repair and maintenance personnel are using the correct wire, since many of the ambulances being built today are getting increasingly more complex from a wiring perspective.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-903 (Log #286).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-906 Log #1378 **Final Action:** Accept in Principle
(7.2.2.9.1)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Wiring shall be uniquely identified at least every 2 ft (0.6 m) by color coding or permanent marking with a circuit function code.

Substantiation: KKK states "The wiring shall be permanently color coded or marked the entire length of the wire." Identification every 2 ft. is not sufficient in the tight confines of an ambulance to allow for wire identification. We currently mark the wire with text every 6 in. and stripe the wire continuously.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-903 (Log #286).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-907 Log #1232 **Final Action:** Accept in Principle
(7.2.2.9.2)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

7.2.2.9.2 The identification shall reference a wiring diagram, or wiring diagram shall have an alphabetical list of all identifiers and their location on the diagram. [See 4.17.2.3(6).]

Substantiation: People are conditioned to look for lists, alphabetically, by placing the coordinates on the list, it makes it more efficient for the end user.

Committee Meeting Action: Accept in Principle

Add new text to read as follows:

7.2.2.9.3 The wiring diagram shall have an alphabetical list of all identifiers and their location on the diagram.

Committee Statement: Revised text for clarity and made the requirement its own section.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-908 Log #1256 **Final Action:** Accept in Principle
(7.2.2.9.2)

Submitter: Rob Wilkey, Medtec Ambulance Corporation

Recommendation: None given.

Substantiation: Request clearer description in this section. Does the identification on the wiring refer to a specific diagram or vice versa.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-907 (Log #1232).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-909 Log #1416 **Final Action:** Reject
(7.2.2.11.2.1)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Add text to read as follows:

7.2.2.11.2.1: Automotive connections should be of a crimp type nature which promotes continuous conductor pre-load and should ideally have appropriate strain relief to prevent such conductor from unnecessary or undue mechanical stress or strain. Eyelet (Ring Terminals) to comply with SAE J163 Electrical terminal pins and receptacles to comply with SAE J928.

Substantiation: Screw terminals can become loose when subjected to vibration potentially causing arcing and/or fire.

Committee Meeting Action: Reject

Committee Statement: Screw terminals are an accepted method of terminating wires.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-910 Log #1231 **Final Action:** Reject
(7.2.2.12)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

7.2.2.12 The ambulance electrical system shall incorporate a master circuit breaker panel with Arc-Fault circuit breakers or other electronic, non-disposable, current protection devices, in each circuit, which comply with SAE J553 Type I, or Type III (if circuit breaker is readily accessible for resetting by the driver or EMSP).

Substantiation: With the increased complexity of Ambulance electrical systems, having Arc-Fault breakers will reduce the chance of inadvertent component damage.

Committee Meeting Action: Reject

Committee Statement: Arc-Fault circuit breakers are too restrictive for Ambulance use at this time.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-911 Log #1559 **Final Action:** Accept in Principle
(7.2.2.12)

Submitter: Peter Luhrs, Weldon (a Division of Akron Bradd

Recommendation: Delete text to read as follows:

7.2.2.12 The ambulance electrical system shall incorporate a master circuit breaker panel with circuit breakers or other electronic non-disposable, current protection devices, in each circuit, which comply with SAE J553 Type I, or Type III (if circuit breaker is readily accessible for resetting by the driver or EMSP).

Substantiation: The paragraph is outdated and should be removed, as Multiplexed ambulance may have no circuit breaker panels.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

7.2.2.12 The ambulance electrical system shall incorporate a master circuit breaker panel with circuit breakers or other electronic, non-disposable, current protection devices, in each circuit, which comply with SAE J553 Type I, or Type III (if circuit breaker is readily accessible for resetting by the driver or EMSP).

7.2.2.12 The ambulance Hard-wired patient compartment electrical systems shall incorporate a master circuit breaker panel with circuit breakers or other electronic non-disposable, current protection devices, in each circuit, which comply with SAE J553 Type I, or Type III (if circuit breaker is readily accessible for resetting by the driver or EMSP).

7.2.2.12.1 Multiplexed patient compartment electrical systems shall incorporate centralized circuit protection devices on each power circuit supplying the multiplexing system's components.

Committee Statement: Language modified to cover hard-wired and multiplexed ambulances.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-912 Log #1308 **Final Action: Accept in Principle**
(7.2.2.13)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

7.2.2.13 One extra 15 amp or 20 amp circuit breaker shall be provided for future use.

Substantiation: The spare circuit breaker should not be limited to 15 amp capacity.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

7.2.2.13 One extra circuit, minimum 15 amps, shall be provided for future use.

Committee Statement: Added minimum to clear up text.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-913 Log #1379 **Final Action: Reject**
(7.2.2.14)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Grounding.

Substantiation: This section should separate low voltage return (grounding) methods from high voltage grounding methods. The term ground is confused in several sections as to whether it is referring to d/c return of protective ground. The impossibility of providing an earth ground in a moving vehicle should also be discussed and resolved as it relates to inverters and generators. The only possibility is for a bonded protective ground.

Committee Meeting Action: Reject

Committee Statement: This is the low voltage chapter.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-914 Log #1109 **Final Action: Accept in Principle**
(7.2.2.14.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: 7.2.2.14.1 Dedicated grounds for all appliances, circuits, etc. shall be furnished.

Substantiation: Is this asking for a separate ground wire instead of local ground connections to the chassis or body?

Committee Meeting Action: Accept in Principle

REVISE text to read:

7.2.2.14.1 ~~Dedicated grounds for all appliances, circuits, etc. shall be furnished.~~
All electrical components or appliances shall be electrically grounded in accordance with the component manufacturer's recommendations.

Committee Statement: Rewrote text to clear up confusion.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-915 Log #1380 **Final Action: Accept in Principle**
(7.2.2.14.1)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Dedicated grounds for all appliances, circuits, etc., shall be furnished.

Substantiation: This practice will require that all running lights and many other low current components have two wires instead of the typical local connection to the chassis. This will add cost and weight to the vehicle. Is this referring to D/C return or protective ground?

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-914 (Log #1109).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-916 Log #1110 **Final Action: Reject**
(7.2.2.14.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text as follows:

~~7.2.2.14.2 The use of appliance mounting screws/hardware shall not be used for grounding purposes.~~

Substantiation: Several types of low current lighting are of self grounding types using the mounting screws as the point of contact.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-887 (Log #1779).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-917 Log #502 **Final Action: Accept in Principle**
(7.2.2.15)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Revise text to read as follows:

All switches, indicators, fuses, circuit breakers and controls shall be located and installed in a manner that facilitates easy removal.

Substantiation: Fuses and circuit breakers are part of the automotive ambulance electrical system and need to be included in proposed standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-891 (Log #371).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-918 Log #1417 **Final Action: Reject**
(7.3.1)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

~~7.3.1: A 12 V or greater An electrical alternator capable of charging a 12V DC battery shall be provided. Output of alternator shall be within a range of 13.5V DC to 14.5V DC. For 24 V DC systems, the alternator output shall be within a range of 27-29 V maximum.~~

Substantiation: Range of 13.5 -14.5V DC is necessary for efficient 12V DC battery charging.

Committee Meeting Action: Reject

Committee Statement: The required alternator output in the following requirements makes changing the text suggested in the proposal irrelevant.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-919 Log #1111 **Final Action: Accept in Principle**
(7.3.2.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.3.2.1 The alternator shall have a minimum output at low idle to meet the minimum continuous electrical load of the ambulance at 95°F (35° C) ambient temperature.

Substantiation: Minimum continuous electrical load must be redefined. “Basic Chassis Functions”

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-925 (Log #1114).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-920 Log #1309 **Final Action: Accept in Principle**
(7.3.2.1)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

7.3.2* Low Idle Alternator Output.

7.3.2.1 The alternator shall have a minimum output at low idle to meet the minimum continuous electrical load of the ambulance at 95°F (35° C) ambient temperature.

Substantiation: Whether intentional or not, this requirement may exclude potential chassis manufacturers based upon their charging system design.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

7.3.2* Low Idle Alternator Output.

7.3.2.1 The alternator shall have a minimum output at low idle to meet the Minimum Continuous Electrical Load Minimum Electrical Load Test Conditions of the ambulance at 95°F (35° C) ambient temperature.

7.3.2.1.1 “Minimum Electrical Load Test Conditions”, which are tested under low-idle conditions, consisting of:

(1) The propulsion engine and transmission;

(2) All legally required clearance and marker lights, headlights, and other electrical devices except windshield wipers and four-way hazard flashers;

(3) The radio(s) at a duty cycle of 10 percent transmit and 90 percent receive (for calculation and testing purposes, a default value of 5A continuous);

(4) Cab air conditioning (at coldest setting with highest blower speed);

(5) Patient compartment air conditioning (at coldest setting with highest blower speed);

(6) The lighting necessary to illuminate walking surfaces at entry points

Committee Statement: Committee defined low idle load requirements.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-921 Log #1418 **Final Action: Reject**
(7.3.2.1)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

7.3.2.1: The alternator shall have a minimum output-At low engine idle, (500-600 rpm) to meet the minimum continuous electrical load of the ambulance at 95 o F (35o C) ambient temperature plus possess 20 AMPS surplus to replenish (charge) batteries.

Substantiation: The alternator must be appropriately sized to handle all expected electrical loads when the engine is idling. The alternator should be designed in adherence to the Worldwide Automotive Generator (alternator) Standards.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-925 (Log #1114).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-922 Log #1647 **Final Action: Accept in Principle**
(7.3.2.1 and 7.3.4.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 7.3.2.1 to read:

7.3.2.1 The alternator shall have a minimum output at low idle to meet the minimum continuous electrical load of the ambulance at 95°F (35° C) 110°F (43° C) ambient temperature.

Revise 7.3.4.1 to read:

7.3.4.1 The alternator shall have a minimum output at high idle to power the full system electrical load at 95°F (35° C) 110°F (43° C) ambient temperature.

Substantiation: Ambulances will regularly see ambient temperatures greater than 95°F (35° C) in many areas. The electrical systems are too important to the function of the ambulance to fail. The systems should be designed to provide the minimum continuous electrical load and the full system electrical load at higher ambient temperatures. The 110°F (43° C) ambient temperature is consistent with the requirements of 4.12.3.

The committee should consider a measurement in the engine compartment rather than just ambient temperature. NFPA 1901 uses 200°F (93° C) ambient temperature within the engine compartment recognizing the effect of engine heat on the alternator performance.

Committee Meeting Action: Accept in Principle

Revise 7.3.2.1 to read:

7.3.2.1 The alternator shall have a minimum output at low idle to meet the minimum continuous electrical load Minimum Electrical Load Test Conditions of the ambulance at between 60°F 95°F (35° C) and 110°F (43° C) ambient temperature.

Revise 7.3.4.1 to read:

7.3.4.1 The alternator shall have a minimum output at high idle to power the full system electrical load Operational Electrical Load Test Conditions at between 60°F 95°F (35° C) and 110°F (43° C) ambient temperature.

Committee Statement: Changed text. The committee felt changing from 95 to 110° F. was an impractical jump but provided a range between 60 and 110°F.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-923 Log #1112 **Final Action: Accept in Principle**
(7.3.2.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.3.2.2 Compliance of the low idle alternator output shall be validated by testing each a substantially similar ambulance in accordance with 9.5.3.3.

Substantiation: Each individual ambulance must be tested and documented, no 9.5.3.3 is listed.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

7.3.2.2 Compliance of low idle alternator output Minimum Electrical Load Test Conditions shall be validated by testing a substantially similar ambulance in accordance with 9.5.3.3.

Committee Statement: Testing each ambulance would increase the cost and the time.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-924 Log #1113 **Final Action: Reject**
(7.3.4.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.3.4.2 Compliance of the high idle alternator output shall be validated by testing a substantially similar ambulance in accordance with 9.1.2.3.

Substantiation: 9.1.2.3 is the test for engines at low idle not at high idle. Each individual ambulance should have high idle output testing.

Committee Meeting Action: Reject

Committee Statement: This is a minimum standard should type test.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-925 Log #1114 **Final Action: Accept in Principle (7.4.1)**

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.4.1* The minimum ~~mandatory continuous~~ electrical load shall consist of the total amperage required to simultaneously operate the following in a stationary mode during emergency operations:

- (1) The propulsion engine and transmission
- (2) All legally required clearance and marker lights, headlights, and other electrical devices except windshield wipers and four-way hazard flashers
- (3) The radio(s) at a duty cycle of 10 percent transmit and 90 percent receive (for calculation and testing purposes, a default value of 5 A continuous)
- (4) The lighting necessary to illuminate walking surfaces at entry points and 50 compartment light load as required by this standard.
- (5) The minimum optical warning system required in Section 7.8, where the ambulance is blocking the right-of-way
- (6) The continuous electrical current required to simultaneously operate an additional 20 amp load
- (7) Cab air conditioning (at coldest setting with highest blower speed)
- (8) Patient module air conditioning (at coldest setting with highest blower speed)
- (9) Patient module dome lighting (in the high intensity setting)
- (10)* Other warning devices and electrical loads defined by the purchaser as critical to the mission of the ambulance.

Substantiation: Items 1 through 10 do not represent the minimum continuous electrical load. This is beyond the ability of the alternator system at low idle to maintain. This level of performance will require high idle alternator output.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

7.4 Minimum-Continuous Electrical Load: Operational Electrical Load Test Conditions

7.4.1* The ~~Minimum-Continuous-Electrical-Load~~ Operational Electrical Load Test Conditions minimum continuous electrical load shall consist of the total amperage required to simultaneously operate the following in a stationary mode during emergency operations:

- (1) The propulsion engine and transmission
- (2) All legally required clearance and marker lights, headlights, and other electrical devices except windshield wipers and four-way hazard flashers
- (3) The radio(s) at a duty cycle of 10 percent transmit and 90 percent receive (for calculation and testing purposes, a default value of 5 A continuous)
- (4) The lighting necessary to illuminate walking surfaces at entry points and 50 percent of the total compartment light load as required by this standard.
- (5) The minimum optical warning system required in Section 7.8, where the ambulance is blocking the right-of-way
- (6) The continuous electrical current required to simultaneously operate an additional 20 amp load.
- (7) Cab air conditioning (at coldest setting with highest blower speed).
- (8) Patient ~~module compartment~~ air conditioning (at coldest setting with highest blower speed).
- (9) Patient ~~module compartment~~ dome lighting (in the high intensity setting).
- (10)* Other warning devices and electrical loads defined by the purchaser as critical to the mission of the ambulance.

Committee Statement: The committee rewrote 7.3.4 to be consistent with Proposal 1917-920 (Log #1309).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-926 Log #288 **Final Action: Reject (7.4.1(10))**

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Delete text as follows:

10)* Other warning devices and electrical loads defined by the purchaser as critical to the mission of the...".

Substantiation: Alternators are in most cases OEM to the chassis and are not able to be modified based on purchaser added minimum electrical loads.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-925 (Log #1114).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-927 Log #1649 **Final Action: Reject (7.4.1(10) and A.7.4.1(10))**

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 7.4.1(10)

Renumber A.7.4.1(10) as A.7.4.1.

Substantiation: Paragraph 7.4.1(10) is not appropriate in a minimum standard as the intent of the standard is to define the minimum requirements, regardless of what the purchasers may want or need. The annex item provides guidance to a purchaser in preparing a purchase specification.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-925 (Log #1114).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-928 Log #1648 **Final Action: Accept (7.4.1(8) and 7.4.1(9))**

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 7.4.1(8) and 7.4.1(9) as follows:

(8) Patient ~~compartment module~~ air conditioning (at coldest setting with highest blower speed).

(9) Patient ~~compartment module~~ dome lighting (in the high intensity setting).

Substantiation: Patient compartment is defined and used through the document, patient module is not.

Also, are there any situations where the patient compartment heating rather than the cooling would require more electrical power?

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-929 Log #287 **Final Action: Reject (7.4.2)**

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Revise text to read as follows:

7.4.2 If the ambulance is equipped to tow a trailer, an additional 45-amps 15 amps shall be added to the minimum continuous electrical load to provide electrical power for the federally required clearance and marker lighting and the optical.

Substantiation: A 45 amp circuit for trailer clearance lights is in excess of actual requirements.

Committee Meeting Action: Reject

Committee Statement: 15 amp additional load for trailer might not be enough.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-930 Log #1115 **Final Action: Reject (7.4.2)**

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Delete text as follows:

~~7.4.2 If the ambulance is equipped to tow a trailer, an additional 45 amps shall be added to the minimum continuous electrical load to provide electrical power for the federally required clearance and marker lighting and the optical warning devices mounted on the trailer.~~

Substantiation: Ambulances are not allowed to tow trailers, please delete entire passage.

Committee Meeting Action: Reject**Committee Statement:** Some ambulances might be equipped to tow trailers.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-931 Log #1310 **Final Action: Reject**
(7.4.2)**Submitter:** Jerry Allen, Braun Northwest, Inc.**Recommendation:** Revise text to read as follows:

7.4.2 If the ambulance is equipped to tow a trailer, an additional 45 20 amps shall be added to the minimum continuous electrical load to provide electrical power for the federally required clearance and marker lighting and the optical warning devices mounted on the trailer.

Substantiation: 45 amps far exceeds the power needed to meet the federal lighting requirements. Even with incandescent lamps, an allowance of 20 amps is more reasonable.

Committee Meeting Action: Reject**Committee Statement:** 20 amp additional load for trailer might not be enough.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-932 Log #1826 **Final Action: Reject**
(7.4.2)**Submitter:** Glen Oliphant, La Farge, WI**Recommendation:** Delete text as follows:

7.4.2 If the ambulance is equipped to tow a trailer, an additional 45 amps shall be added to the minimum continuous electrical load to provide electrical power for the federally required clearance and marker lighting and the optical warning devices mounted on the trailer.

Substantiation: If towing, its primary purpose is not the care and transportation of the sick or injured.

Committee Meeting Action: Reject**Committee Statement:** Some ambulances might be equipped to tow trailers.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-933 Log #1851 **Final Action: Reject**
(7.4.2)**Submitter:** John Matthes, Kickapoo Valley Rescue Squad**Recommendation:** Delete text as follows:

7.4.2 If the ambulance is equipped to tow a trailer, an additional 45 amps shall be added to the minimum continuous electrical load to provide electrical power for the federally required clearance and marker lighting and the optical warning devices mounted on the trailer.

Substantiation: If towing, its primary purpose is not the care and transportation of the sick or injured.

Committee Meeting Action: Reject**Committee Statement:** Some ambulances might be equipped to tow trailers.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-934 Log #1381 **Final Action: Reject**
(7.4.3.2)**Submitter:** Mark Spivey, Kinequip, Inc.**Recommendation:** Add new text to read as follows:

Voltage Alarm.

Substantiation: The alarm should also work in the event of over voltage due to a failing alternator or inverter as this can cause serious damage to the vehicle systems.

Committee Meeting Action: Reject**Committee Statement:** Not specific as to what text he wanted changed.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-935 Log #1116 **Final Action: Accept in Principle**
(7.5.1)**Submitter:** Randy A. Hanson, American Emergency Vehicles**Recommendation:** Revise text to read as follows:

7.5.1* If the total continuous electrical load exceeds the ~~minimum continuous full system~~ electrical output rating of the installed alternator(s) operating under the conditions specified in 7.4.1, an automatic electrical load management system shall be required.

Substantiation: 7.4.1 should not be titled minimum continuous output.**Committee Meeting Action: Accept in Principle****Committee Statement:** See committee action on Proposal 1917-925 (Log #1114).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-936 Log #1117 **Final Action: Accept in Principle**
(7.5.2)**Submitter:** Randy A. Hanson, American Emergency Vehicles**Recommendation:** Revise text to read as follows:

7.5.2 The minimum ~~mandatory continuous~~ electrical loads defined in 7.4.1 shall not be subject to automatic load management.

Substantiation: Need to clarify the difference between minimum low idle chassis functions, and high idle minimum mandatory requirements listed in 7.4.1.

Committee Meeting Action: Accept in Principle**Committee Statement:** See committee action on Proposal 1917-925 (Log #1114).**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-937 Log #1013 **Final Action: Reject**
(7.5.3.2)**Submitter:** David Schimmel, Wayne Memorial First Aid Squad**Recommendation:** Revise text to read as follows:

7.5.3.2 The device shall operate only when switched to the "ON" position and the transmission is in "PARK" or "NEUTRAL," in accordance with the operating instructions of the manufacturer.

Substantiation: How will this work with engine driven pumps, hydraulic systems or very large generators. There are patient transport units that have 100KW generators that are direct drive. How does this impact the design of an ambulance in a negative way.

Committee Meeting Action: Reject**Committee Statement:** An ambulance, by definition, will not typically meet the conditions in the submitter's proposal.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-938 Log #1118 **Final Action: Accept in Principle**
(7.5.3.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.5.3.2 The device shall operate only when switched to the “ON” position and the transmission is in “PARK” or “NEUTRAL.”

Substantiation: Ford does not have an “on” switch, Ford uses the parking brake as the switch.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917- 940 (Log #1650).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-939 Log #1311 **Final Action: Accept in Principle**
(7.5.3.2)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

7.5.3.2 The device shall operate only when switched to the “ON” position and the transmission is in “PARK” or “NEUTRAL.”

Substantiation: The OEM auto throttle is typically not switch controlled. Because this needs to be an automatic (voltage sensing) function, it is inappropriate to add a manual switch function.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-940 (Log #1650).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-940 Log #1650 **Final Action: Accept in Principle**
(7.5.3.2, 7.5.3.3 and 7.5.3.4)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 7.5.3.2 through 7.5.3.4 to read as follows:

7.5.3.2 The high-idle speed control shall device shall prevent an increase of engine speed unless operate only when switched to the “ON” position and the transmission is in “PARK” or “NEUTRAL.”

7.5.3.3 The high-idle speed control shall prevent an increase of engine speed unless the parking brake is shall be applied at all times when the Engine High-Idle speed control is in use.

7.5.3.4 The high-idle speed control device shall disengage high idle operation according to the chassis manufacturer’s and/or engine manufacturer’s disablement strategy, or if not specified, when the operator depresses the service brake pedal, the parking brake is released or the transmission is placed in gear.

Substantiation: The changes standardize on the word “control” as a name rather than device and make the requirement in 7.5.3.3 more of a requirement than an instruction. Other changes are for clarification of the requirements.

Committee Meeting Action: Accept in Principle

Revise to read as follows:

7.5.3 An Engine High-Idle speed control shall be furnished.

7.5.3.1 The control shall be set to automatically increase the engine speed (RPM) to the engine manufacturer’s recommended setting to sustain the ambulance’s total continuous electrical load at the regulated voltage and provide maximum heating/air conditioning output.

7.5.3.2 The device shall operate only when switched to the “ON” position and the transmission is in “PARK” or “NEUTRAL.”

7.5.3.3 The parking brake shall be applied at all times when the Engine High-Idle speed control is in use.

7.5.3.4 The device shall disengage high idle operation according to the chassis manufacturer’s and/or engine manufacturer’s disablement strategy, or if not specified, when the operator depresses the service brake pedal, the parking brake is released or the transmission is placed in gear.

7.5.3 Engine Speed Auxiliary Control Device.

7.5.3.1 An engine speed auxiliary control device (high idle switch or throttle) shall be installed to allow an increase in the engine speed when the apparatus is parked.

7.5.3.2 An interlock shall prevent the operation of the engine speed auxiliary control device unless the parking brake is engaged and the transmission is in neutral or park, or the parking brake is engaged and the engine is disengaged from the drive wheels.

7.5.3.3 The engine shall be prevented from regulating its own engine speed during times when engine rpm control is critical for consistent ambulance functions.

Committee Statement: Used text from NFPA 1901, *Standard for Automotive Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-941 Log #1851a **Final Action: Reject**
(7.5.3.3)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

7.5.3.3 The parking brake shall should be applied at all times when the Engine High-Idle speed control is in use.

Substantiation: Parking brakes can freeze expressly when roads are slush covered.

Committee Meeting Action: Reject

Committee Statement: The word “shall” makes it a requirement and “should” does not.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-942 Log #1826a **Final Action: Reject**
(7.5.3.3)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

7.5.3.3 The parking brake shall should be applied at all times when the Engine High-Idle speed control is in use.

Substantiation: Parking brakes can freeze expressly when roads are slush covered.

Committee Meeting Action: Reject

Committee Statement: The word “shall” makes it a requirement and “should” does not.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-943 Log #1119 **Final Action: Reject**
(7.5.3.3 (New))

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.5.3.3 The parking brake shall be applied at all times when the Engine High-Idle speed control is in use.

Substantiation: Clarification needed - is this a suggestion to the end user or a design criteria? GM and Sprinter high idle will operate without the emergency brake applied.

Committee Meeting Action: Reject

Committee Statement: The whole document is a design criteria and if a chassis does not incorporate this feature it is simple to wire in a circuit to require the parking brake be set for the high idle to work.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-944 Log #1827 **Final Action: Reject**
(7.5.3.4)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

7.5.3.4 The device shall disengage high idle operation according to the chassis manufacturer's and/or engine manufacturer's disablement strategy, or if not specified, when the operator depresses the service brake pedal, ~~the parking brake is released or the transmission is placed in gear.~~

Substantiation: Parking brakes can freeze expressly when roads are slush covered.

Committee Meeting Action: Reject

Committee Statement: The substantiation regarding the parking brake freeze up does not eliminate the need for safety when the parking brake is set.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-945 Log #1852 **Final Action: Reject**
(7.5.3.4)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

7.5.3.4 The device shall disengage high idle operation according to the chassis manufacturer's and/or engine manufacturer's disablement strategy, or if not specified, when the operator depresses the service brake pedal, ~~the parking brake is released or the transmission is placed in gear.~~

Substantiation: Parking brakes can freeze expressly when roads are slush covered.

Committee Meeting Action: Reject

Committee Statement: The substantiation regarding the parking brake freeze up does not eliminate the need for safety when the parking brake is set.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-946 Log #73 **Final Action: Accept in Principle**
(7.6.1)

Submitter: William von Zehle, Jr., Wilton Emergency Medical Services

Recommendation: Revise text to read as follows:

7.6.1.1 With the engine off, the battery system shall be able to provide the minimum continuous electrical load for 10 minutes without discharging more than 50 percent of the reserve capacity and then be able to restart the engine.

Substantiation: Editorial cleanup.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

7.6.1.1 With the engine off, the battery system shall be able to provide the minimum continuous electrical load, Minimum Electrical Load Test Conditions as stated in 7.4.1, for 10 minutes, and then be able to restart the engine.

Committee Statement: The committee did not have data to support 50 percent reserve capacity requirement

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-947 Log #372 **Final Action: Accept in Principle**
(7.6.1.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~With the engine off, the battery system shall be able to provide the minimum continuous electrical load for 10 minutes without discharging more than 50 percent of the reserve capacity and then to restart the engine~~

Substantiation: The proposed standard lacks data to support standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-946 (Log #73).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-948 Log #568 **Final Action: Accept in Principle**
(7.6.1.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~With the engine off, the battery system shall be able to provide the minimum continuous electrical load for 10 minutes without discharging more than 50 percent of the reserve capacity and then to restart the engine~~

Substantiation: The proposed standard lacks data to support standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-946 (Log #73).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-949 Log #1120 **Final Action: Accept in Principle**
(7.6.1.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.6.1.1 With the engine off, the battery system shall be able to provide the minimum continuous electrical load for 10 minutes without discharging more than 50 percent of the reserve capacity and then to restart the engine.

Substantiation: Clarification needed - if minimum continuous is redefined as minimal. Chassis features this is possible to accomplish as written.

This standard can't be achieved using the current 7.4.1 definition.

7.4.1 requires the engine running so the A/C unit will function, 7.4.1 should be retitled as minimum mandatory functions.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-946 (Log #73).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-950 Log #1121 **Final Action: Accept in Principle**
(7.6.1.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.6.1.2 Compliance of the battery system shall be verified on every ambulance prior to delivery in accordance with 9.5.2.2.

Substantiation: No 9.5.2.2. Passage does not exist.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

7.6.1.2 Compliance of the battery system shall be verified on every ambulance prior to delivery in accordance with 9.5.3.2.

Committee Statement: This has been corrected by action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-951 Log #1744 **Final Action: Accept in Principle**
(7.6.1.2)

Submitter: Patrick Egan, Allina Medical Transportaiton

Recommendation: Revise text to read as follows:

Compliance of the battery system shall be verified on every ambulance prior to delivery in accordance with 9.5.2.2.

Substantiation: The 9.5.2.2 standard was not found in the proposal.

Committee Meeting Action: Accept in Principle

Committee Statement: This has been corrected by action on 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-952 Log #311 **Final Action: Reject**
(7.6.3.1)

Submitter: Charles D. Drake, SJC Industries Corporation

Recommendation: Revise text to read as follows:

7.6.3.1 The batteries shall be readily accessible for examination, testing, and maintenance. Batteries on Type II ambulances may remain in the chassis OEM location.

Substantiation: Batteries on Type II transport ambulances are not subjected to the same cycling issues as those experienced by 911 emergency call Type I and Type III ambulances. Therefore they do not require access for constant maintenance.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-953 (Log #1122).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-953 Log #1122 **Final Action: Accept**
(7.6.3.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.6.3.1 The batteries shall be readily accessible for examination, testing, and maintenance.

Substantiation: Several modules have OEM batteries in locations not readily accessible - Ford mounts batteries on the frame rails under the vehicle and Sprinter use a recess in the cab floor.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-954 Log #1123 **Final Action: Reject**
(7.6.4)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.6.4 A means shall be provided for jump-starting the engine if the batteries are not accessible, ~~without lifting the cab of a tilt-cab ambulance~~.

Substantiation: A means to jump start needs to be present on every ambulance.

Committee Meeting Action: Reject

Committee Statement: The committee feels the language allows for all ambulances to be jump started.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-955 Log #373 **Final Action: Accept**
(7.6.7)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Revise text to read as follows:

A master load disconnect switch shall be provided between the starter solenoid(s) and the patient compartment electrical loads.

Substantiation: Use of the word "switch" confusing. Propose a solenoid operation.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-956 Log #567 **Final Action: Accept in Principle**
(7.6.7)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Revise text to read as follows:

A master load disconnect switch shall be provided between the starter solenoid(s) and the patient compartment electrical loads.

Substantiation: Use of the word "switch" confusing. Propose a solenoid operation.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-955 (Log #373).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-957 Log #1551 **Final Action: Reject**
(7.6.7)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

7.6.7* If the ambulance is not equipped with a multiple batteryies bank and a batteryies isolator, a master load disconnect switch shall be provided between the starter solenoid(s) and the patient compartment electrical loads.

Substantiation: Clarification.

Committee Meeting Action: Reject

Committee Statement: The committee feels a disconnect is still required.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-958 Log #1552 **Final Action: Accept**
(7.6.8.1)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

7.6.8.1 The starter solenoids shall be connected directly to the chassis batteries.

Substantiation: Clarification.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-959 Log #1419 **Final Action: Reject**
(7.6.9)

Submitter: Tim Schroeder, Ferno-Washington, Inc.

Recommendation: Revise text to read as follows:

7.6.9: The alternator shall be wired directly to the batteries through the ammeter shunt(s); if one is provided, and not through the master load disconnect switch. ~~All current sensing devices shall be inductive.~~
Substantiation: Current sensing shunts cause voltage drops which reduces charging system efficiency. Inductive devices do not cause the voltage drops associated with shunts and provide better current measurements.

Committee Meeting Action: Reject

Committee Statement: Makes the standard too restrictive.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-960 Log #1553 **Final Action: Reject**
(7.6.9)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

7.6.9 If the ambulance is not using a battery isolator, The alternator shall be wired directly to the batteries through the ammeter shunt(s), if one is provided, and not through the master load disconnect switch.

Substantiation: Clarification.

Committee Meeting Action: Reject

Committee Statement: Battery isolators are being used less frequently.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-961 Log #289 **Final Action: Accept in Principle**
(7.6.11.1)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Revise text to read as follows:

7.6.11.1 The "Power Point" circuits shall prevent discharge of chassis batteries by only permitting the charging of portable devices when the vehicle is either running ignition on or the Automatic charger/Conditioner is connected to shore.

Substantiation: Not all chassis provide a engine running signal.

Committee Meeting Action: Accept in Principle

Revise text as follows:

7.6.11.1 The "Power Point" circuits shall prevent discharge of chassis batteries by only permitting the charging of portable devices when the vehicle is either running, ignition on or the Automatic charger/Conditioner is connected to shore power.

Committee Statement: Corrected text omission "power".

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-962 Log #1124 **Final Action: Reject**
(7.6.11.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.6.11.1 The "Power Point" circuits shall prevent discharge of chassis batteries by only permitting the charging of portable devices when the vehicle is either running or the Automatic charger/Conditioner is connected to shore power.
Substantiation: Customers will need some provision for constant hot circuits to keep critical equipment supplied with power.

Please note - KKK required 2 separate circuits for 12V outlets and portable equipment at 20 AMP.

Committee Meeting Action: Reject

Committee Statement: See Proposal 1917-961 (Log #289). The committee feels battery hot (non-ignition) loads create too much battery drain.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-963 Log #1382 **Final Action: Reject**
(7.6.11.2)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

The "Power Point" circuits shall be protected by a minimum 10 amp circuit breaker.

Substantiation: KKK required the circuits to be 20 AMP. This could be a cost reduction but may lead to repeated overload in the field if the outlets are not labeled.

Committee Meeting Action: Reject

Committee Statement: The standard is minimum. The purchaser may ask for 20 amp circuits.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-964 Log #1383 **Final Action: Reject**
(7.6.11.2)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Electromagnetic Interference. Electromagnetic interference suppression shall be provided, as required, to satisfy the radiation limits specified in SAE J551/1, Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz).

Substantiation: SAE J551/1 does not specify what the acceptable limits are. There are products that meet this standard but at a much higher cost. Inverters, alternators, solenoids, generators, etc. were not designed with this in mind. FCC Part 15 would be more achievable and applicable to the concern of interference.

Committee Meeting Action: Reject

Committee Statement: Language is direct from NFPA 1901, *Standard for Automotive Fire Apparatus*, and the committee does not have the time to research a better conclusion.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-965 Log #1312 **Final Action: Reject**
(7.6.11.3)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Delete text as follows:

~~**7.6.11.3** The "Power Point" circuits shall include a (low voltage drop) "Schottky" diode to isolate medical equipment batteries from any electrical loads that the remainder of the ambulance electrical system may impose.~~

Substantiation: The Schottky diode adds cost that is no longer justified. We are unaware of any medical equipment battery chargers that do not have diodes for reverse polarity / reverse current protection. The Schottky diode played a useful role before solid-state chargers became the norm, but it is no longer needed in ambulance electrical systems.

Committee Meeting Action: Reject

Committee Statement: Equipment other than medical devices might be plugged into power points.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-966 Log #1554 **Final Action: Accept in Principle**
(7.6.11.3)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Revise text to read as follows:

7.6.11.3 The “Power Point” circuits shall include a (low voltage drop) “Schottky” diode or other solid state equivalent devices to isolate medical equipment batteries from any electrical loads that the remainder of the ambulance electrical system may impose.

7.6.11.3.1 If used, The “Schottky” diode shall be heat-sink mounted, have an inverse voltage rating of at least 45 volts and also be rated to carry the maximum short circuit current, until the circuit breaker opens.

7.6.11.3.2 If used, The diode shall be physically located in an accessible location and be electrically connected between the circuit breaker and the “Power Point” connectors.

Substantiation: Clarification.

Committee Meeting Action: Accept in Principle

Revise text as follows:

7.6.11.3 The “Power Point” circuits shall include a (low voltage drop) “Schottky” diode or other solid state equivalent devices to isolate medical equipment batteries from any electrical loads that the remainder of the ambulance electrical system may impose.

7.6.11.3.1 The If a “Schottky” diode is used, it shall be heat-sink mounted, have an inverse voltage rating of at least 45 volts and also be rated to carry the maximum short circuit current, until the circuit breaker opens.

7.6.11.3.2 The If a “Schottky” diode is used, it shall be physically located in an accessible location and be electrically connected between the circuit breaker and the “Power Point” connectors.

Committee Statement: The committee modified grammar.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-967 Log #290 **Final Action: Reject**
(7.6.12)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Revise text to read as follows:

7.6.12 An additional tagged, identified 15 amp 12 VDC pwr/ground lead, ignition hot or when the automatic charger/conditioner is connected to shore power, shall be furnished in both.

Substantiation: No amperage rating listed or power source listed.

Committee Meeting Action: Reject

Committee Statement: The committee feels the section is too extensive for a minimum standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-968 Log #1651 **Final Action: Reject**
(7.6.12)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 7.6.12 to read as follows:

7.6.12 An additional tagged, identified lead meeting the requirements of 7.6.11 shall be furnished in both the cab and patient compartment module for connection of additional (future) portable equipment that requires recharging.

Substantiation: Without a requirement to meet 7.6.11, the manufacturer is just required to install some wire. Also, the correct wording for the termination area of the second lead is the patient compartment, not module.

Committee Meeting Action: Reject

Committee Statement: The committee feels the section is too extensive for a minimum standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-969 Log #1125 **Final Action: Reject**
(7.8)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.8* Electromagnetic Interference.

Electromagnetic interference suppression shall be provided, as required, to satisfy the radiation limits specified in FCC Part 15 SAE J551/1, Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz).

Substantiation: This is a standard that better meets the customers needs at a lower cost for compliance.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-964 (Log #1383).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-970 Log #374 **Final Action: Reject**
(7.9.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Revise text to read as follows:

The optical warning system shall consist of an upper-primary and a lower secondary warning level.

Substantiation: Automotive ambulance warning levels are referred to as “primary” and “secondary”

Committee Meeting Action: Reject

Committee Statement: NFPA 1901, *Standard for Automotive Fire Apparatus*, package option references upper and lower.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-971 Log #566 **Final Action: Reject**
(7.9.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Revise text to read as follows:

The optical warning system shall consist of an upper primary and a lower secondary warning level.

Substantiation: Automotive ambulance warning levels are referred to as “primary” and “secondary”

Committee Meeting Action: Reject

Committee Statement: NFPA 1901, *Standard for Automotive Fire Apparatus*, package option references upper and lower.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-972 Log #375 **Final Action: Reject**
(7.9.6)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: The optical warning system on the ambulance shall be capable of two separate signaling modes during emergency operations. Delete this section in its entirety.

Substantiation: The proposed standard is arbitrary. This is an operational policy issue not a standard.

Committee Meeting Action: Reject

Committee Statement: Two signaling methods has been common practice.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-973 Log #565 **Final Action: Reject**
(7.9.6)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete text to read as follows:

~~The optical warning system on the ambulance shall be capable of two separate signaling modes during emergency operations.~~ Delete this section in its entirety.

Substantiation: The proposed standard is arbitrary. This is an operational policy issue not a standard.

Committee Meeting Action: Reject

Committee Statement: Two signaling methods has been common practice.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-974 Log #52 **Final Action: Reject**
(7.9.6 through 7.9.6.3)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Delete text to read as follows:

~~7.9.6 The optical warning system on the ambulance shall be capable of two separate signaling modes during emergency operations:~~

~~7.9.6.1 One mode shall signal to drivers and pedestrians that the ambulance is responding to an emergency and is calling for the right of way.~~

~~7.9.6.2 One mode shall signal that the ambulance is stopped and is blocking the right of way.~~

~~7.9.6.3 The use of some or all of the same warning lights shall be permitted for both modes provided the other requirements of this chapter are met.~~

Substantiation: The motoring public has no idea of these “modes.” The public safety officials in our area have never heard of this and would not recognize one mode versus another. Delete for unnecessary complexity and cost.

Committee Meeting Action: Reject

Committee Statement: Two signaling methods has been common practice.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-975 Log #1686 **Final Action: Reject**
(7.9.6.1)

Submitter: Peter I. Dworsky, Monoc

Recommendation: What is the purpose of having two modes of lighting? This will confuse the public as they have not been educated to the differences.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: Two signaling methods has been common practice.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-976 Log #1126 **Final Action: Reject**
(7.9.7.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.9.7.1 When the master optical warning system switch is closed and the parking brake is released or the automatic transmission is not in park, the warning devices signaling the primary lighting call for the right-of-way shall be energized.

Substantiation: Suggest that the verbiage be changed back to the primary or secondary flash patterns.

These are the terms ambulance providers have used for 30 years.

Committee Meeting Action: Reject

Committee Statement: NFPA 1901, *Standard for Automotive Fire Apparatus*, package option references Blocking and Calling modes

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-977 Log #1127 **Final Action: Reject**
(7.9.7.2)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.9.7.2 When the master optical warning system switch is closed and the parking brake is on or the automatic transmission is in park, the warning devices signaling the secondary lighting blockage of the right-of-way shall be energized.

Substantiation: Suggest that the verbiage be changed back to primary or secondary flash patterns.

These are the terms ambulance providers have used for 30 years.

Committee Meeting Action: Reject

Committee Statement: NFPA 1901, *Standard for Automotive Fire Apparatus*, package option references Blocking and Calling modes

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-978 Log #1128 **Final Action: Accept in Principle**
(7.9.9)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

7.9.9 The front optical warning devices shall be placed so as to maintain the maximum possible separation from the headlights.

Substantiation: Maximum possible is too subjective given all the different chassis types available.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

7.9.9 The front optical warning devices shall be placed so as to maintain the maximum possible practical separation from the headlights.

Committee Statement: revised text from “possible” to “practical”.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-979 Log #707 **Final Action: Reject**
(7.9.10)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: flasher output in relation to optical zones

Substantiation: This function is dependent on the design of the flasher unit.

Committee Meeting Action: Reject

Committee Statement: Submitter did not give a recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-980 Log #1230 **Final Action: Reject**
(7.9.11.1)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

7.9.11.1 The minimum flash rate of any optical source shall be 75 flashes per minute, and the ~~minimum~~ Maximum number of flashes at any measurement point shall be 150 flashes per minute.

Substantiation: Since the word “Minimum” had already been used in this sentence, it stood to reason that the second word minimum was intended to me “Maximum”.

Committee Meeting Action: Reject

Committee Statement: Language is direct from NFPA 1901, *Standard for Automotive Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-981 Log #1704 **Final Action:** Reject
(7.9.11.1)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Question: Is there a limit to the number or position of steadily burning, non-flashing optical sources?

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: Not a proposal.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-982 Log #725 **Final Action:** Reject
(7.9.11.1 and 7.9.17.3.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

7.9.11.1 The minimum flash rate of any optical source shall be 75 flashes per minute, and the minimum number of flashes at any measurement point shall be 150 flashes per minute.

7.9.17.3.1 Each emergency light shall flash 75 to 125 times per minute.

Substantiation: Conflict between the maximum flash rate 150 or 125. Pick one.

Committee Meeting Action: Reject

Committee Statement: Submitter compared one approved lighting system to the other

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-983 Log #78 **Final Action:** Reject
(Table 7.9.12.1)

Submitter: Christopher S. Schultz, Mountain Ambulance Service

Recommendation: Revise text to read as follows:

Red Any zone Any zone

Blue Any zone Any zone

Yellow Any zone Any zone except A Any zone

White Any zone except C Not permitted

Substantiation: State of Wisconsin prohibits ambulances from using blue lights at all and amber lights must only be used when the vehicle is in park and not moving. Not allowing white lights in the rear of an ambulance is a safety issue, since we cannot legally in Wisconsin utilize any other color but red and white. Red colors will drown out at certain times, white offsets the red identifying the vehicle as an emergency vehicle. Wisconsin State Statutes 347.25 identifies the colors.

Committee Meeting Action: Reject

Committee Statement: Local and State laws supersede this standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-984 Log #1828 **Final Action:** Reject
(7.9.13)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Delete text as follows:

7.9.13* Requirements for Large ambulances:

7.9.13.1 If the ambulance has a bumper-to-bumper length of 25 ft (7.6 m) or more or has an optical center on any optical warning device greater than 8 ft (2.4 m) above level ground, the requirements of 7.9.13.2 through 7.9.13.6 shall apply.

7.9.13.2 Upper-Level Optical Warning Devices:

7.9.13.2.1 The upper-level optical warning devices shall be mounted as high and as close to the corner points of the ambulance as is practical to define the clearance lines of the ambulance.

7.9.13.2.2 The upper-level optical warning devices shall not be mounted above the maximum height, specified by the device manufacturer, that gives an intensity value at 4 ft (1.2 m) above level ground and at 100 ft (30.5 m) from the optical warning device of less than 50 percent of that required at the optical center.

7.9.13.3 Lower-Level Optical Warning Devices:

7.9.13.3.1 To define the clearance lines of the ambulance, the optical center of the lower-level optical warning devices in the front of the vehicle shall be mounted on or forward of the front axle center line and as close to the front corner points of the ambulance as is practical.

7.9.13.3.2 The optical center of the lower-level optical warning devices at the rear of the vehicle shall be mounted on or behind the rear axle center line and as close to the rear corners of the ambulance as is practical.

7.9.13.3.3 The optical center of any lower-level device shall be between 18 in. and 62 in. (460 mm and 1600 mm) above level ground.

7.9.13.4 Midship Optical Warning Devices:

7.9.13.4.1 A midship optical warning device shall be mounted on both the right and the left sides of the ambulance if the distance between the front and rear lower-level optical devices exceeds 25 ft (7.6 m) at the optical center.

7.9.13.4.2 Additional midship optical warning devices shall be required, where necessary, to maintain a horizontal distance between the centers of adjacent lower-level optical warning devices of 25 ft (7.6 m) or less.

7.9.13.4.3 The optical center of any midship-mounted optical warning device shall be between 18 in. and 62 in. (460 mm and 1600 mm) above level ground.

7.9.13.5* For each operating mode, the combined optical power of all the optical sources shall meet or exceed the zone total optical power requirements shown in Table 7.9.13.5.

See Table 7.9.13.5 on the next page

Substantiation: Large ambulances are going to be type I-AD or type III-AD and should be in a separate standard.

Committee Meeting Action: Reject

Committee Statement: NFPA 1917 will be the standard for all ambulances.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-985 Log #1853 **Final Action:** Reject
(7.9.13)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Delete text as follows:

7.9.13* Requirements for Large ambulances:

7.9.13.1 If the ambulance has a bumper-to-bumper length of 25 ft (7.6 m) or more or has an optical center on any optical warning device greater than 8 ft (2.4 m) above level ground, the requirements of 7.9.13.2 through 7.9.13.6 shall apply.

7.9.13.2 Upper-Level Optical Warning Devices:

7.9.13.2.1 The upper-level optical warning devices shall be mounted as high and as close to the corner points of the ambulance as is practical to define the clearance lines of the ambulance.

7.9.13.2.2 The upper-level optical warning devices shall not be mounted above the maximum height, specified by the device manufacturer, that gives an intensity value at 4 ft (1.2 m) above level ground and at 100 ft (30.5 m) from the optical warning device of less than 50 percent of that required at the optical center.

7.9.13.3 Lower-Level Optical Warning Devices:

7.9.13.3.1 To define the clearance lines of the ambulance, the optical center of the lower-level optical warning devices in the front of the vehicle shall be mounted on or forward of the front axle center line and as close to the front corner points of the ambulance as is practical.

7.9.13.3.2 The optical center of the lower-level optical warning devices at the rear of the vehicle shall be mounted on or behind the rear axle center line and as close to the rear corners of the ambulance as is practical.

Table 7.9.13.5 Minimum Optical Power Requirements for Large Ambulance

Calling for Right-of-Way				Mode of Operation Blocking Right-of-Way			
Zone	Level	H Total	At Any H Point	At Any Point 5 Degrees Up or 5 Degrees Down from H	H Total	At Any H Point	At Any Point 5 Degrees Up or 5 Degrees Down from H
A	Upper	1,000,000	10,000	3,500	400,000	10,000	3,500
B	Upper	400,000	10,000	3,500	400,000	10,000	3,500
C	Upper	400,000	10,000	3,500	800,000	10,000	3,500
D	Upper	400,000	10,000	3,500	400,000	10,000	3,500
A	Lower	150,000	3,750	1,300	150,000	3,750	1,300
B	Lower	150,000	3,750	1,300	150,000	3,750	1,300
C	Lower	150,000	3,750	1,300	150,000	3,750	1,300
D	Lower	150,000	3,750	1,300	150,000	3,750	1,300

Notes:

1. All values are in candela-seconds/minute.
2. *H* = Horizontal plane passing through the optical center.
3. The values in the *H* Total columns are the total of 19 data point values for each light, with data points on the boundary between zones counted in both zones.

7.9.13.3.3 The optical center of any lower-level device shall be between 18 in. and 62 in. (460 mm and 1600 mm) above level ground.

7.9.13.4 Midship Optical Warning Devices:

7.9.13.4.1 A midship optical warning device shall be mounted on both the right and the left sides of the ambulance if the distance between the front and rear lower-level optical devices exceeds 25 ft (7.6 m) at the optical center.

7.9.13.4.2 Additional midship optical warning devices shall be required, where necessary, to maintain a horizontal distance between the centers of adjacent lower-level optical warning devices of 25 ft (7.6 m) or less.

7.9.13.4.3 The optical center of any midship mounted optical warning device shall be between 18 in. and 62 in. (460 mm and 1600 mm) above level ground.

7.9.13.5* For each operating mode, the combined optical power of all the optical sources shall meet or exceed the zone total optical power requirements shown in Table 7.9.13.5:

See Table 7.9.13.5 above

Substantiation: Large ambulances are going to be type I-AD or type III-AD and should be in a separate standard.

Committee Meeting Action: Reject

Committee Statement: NFPA 1917 will be the standard for all ambulances.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-986 Log #1760 **Final Action:** Reject
(7.9.13.3.3 and 7.9.13.4.3)

Submitter: John Killeen, Ambulance Visibility

Recommendation: Revise text to read as follows:

7.9.13.3.3 The optical center of any lower-level device shall be between 18 in. and 62 in. 30 in. (460 mm and 1600 mm 760mm) above level ground.

7.9.13.4.3 The optical center of any midship mounted optical warning device shall be between 18 in. and 62 in. 30 in. (460 mm and 1600 mm 760mm) above level ground.

Substantiation: There is a growing worldwide trend to place high-intensity light-heads along the sides or on the wing mirrors of emergency vehicles. This places the waist height lamps exactly at the eye-level of drivers in average

sedans. At night the lamp is flashing and may pass alongside less than 3 feet away from the eyes of other drivers. Any driver looking sideways at the lamp while stopped or being overtaken will have his night vision adaptation eliminated in less than a second along with secondary short-term after-flash effects. It may take up to 20 minutes for the driver to regain their night vision. Older drivers are particularly susceptible to bright light sensitivity and loss of night-vision.

Promoting eye-level lights along the vehicle waistline will be a magnet for litigation following Wake effect type accidents where the driver is temporarily blinded by the warning lamp at flashing at close range through the car window. Accidents or collisions occurring after the ambulance passes may be the result of the lamps being fitted at low-level on the ambulance. In fact most lamps are delivered with a written warning stating that eye damage will occur if the lamp is viewed at close range. The maximum height for these low-level lamps should be no more than 30 inches above ground level. If wing mirrors have a small LED warning lamp fitted then this is even closer to other driver's eye-lines and the lamp should be removed from the mirror.



Figure #1 Light-heads located at eye level on an ACT Fire appliance

Committee Meeting Action: Reject

Committee Statement: Language comes from NFPA 1901, *Standard for Automotive Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-987 Log #1229 **Final Action: Reject**
(7.9.15.1.1)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

7.9.15.1.1 All optical warning devices shall be tested to accompanied by certification documentation stating that the manufacturer has tested them and that they comply with the requirements of...

Substantiation: This will ensure that all ambulance manufacturers are using materials and components that have been tested and comply with this regulation.

Committee Meeting Action: Reject

Committee Statement: Language comes from NFPA 1901, *Standard for Automotive Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-988 Log #709 **Final Action: Reject**
(7.9.16)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Make this a type test

Substantiation: Have this as a type test. It can be certified to a longer, taller body. End users add-subtract-move-change brands of lighting every unit.

Committee Meeting Action: Reject

Committee Statement: Language comes from NFPA 1901, *Standard for Automotive Fire Apparatus*.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-989 Log #1421 **Final Action: Reject**
(7.9.17)

Submitter: Robert Spangler, Federal Signal Corp.

Recommendation: Added text from GSA KKK.

EMERGENCY LIGHTING SYSTEM CONFIGURATION.

The ambulance standard emergency warning light system shall contain twelve fixed red lights, one fixed clear light and one fixed amber light. These lights shall function in a dual mode system as shown in Table I below and meet the physical and photometric requirements. The upper body warning lights shall be mounted at the extreme upper corner areas of the ambulance body, below the horizontal roofline. The single clear light shall be centered between the two front facing, red, upper corner lights or in a dedicated housing mounted forward of the body on the cab roof. If due to limited body dimensions and physical size of the outboard forward facing lights, the lights may also be mounted in dedicated housings on the cab roof. Doors or other ancillary equipment shall not obstruct the standard warning lights. The amber light shall be symmetrically located between the two rear facing red lights. The red "grille" lights shall be located at least 30 in. above the ground and below the bottom edge of the windshield and be laterally separated by at least 18 in., measured from centerline to centerline of each lamp. The lateral facing intersection lights shall be mounted as close as possible to the front upper edge of each front fender and may be angled forward a maximum of 30 degrees. All warning lights furnished shall be mounted to project their highest intensity beams on the horizontal plane.

Alternate approved lighting systems are NFPA 1901 compliant or SAE J2498 compliant.

Substantiation: We could not find this text from the GSA KKK spec included in the draft of NFPA 1917. Without the requirement for compliance with NFPA 1901 or SAE J2498, there is no minimum light measurement required BETWEEN measurement points. This may allow the light levels to fall off to unacceptable levels if the alternative system is selected.

Committee Meeting Action: Reject

Committee Statement: Both NFPA 1901, *Standard for Automotive Fire Apparatus*, and KKK-1822 lighting systems are permitted in NFPA 1917.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-990 Log #1652 **Final Action: Accept in Principle**
(7.9.17)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 7.9.17 Alternate Approved Lighting Systems.

Substantiation: The title of 7.9.17 is "Alternate Approved Lighting Systems." This is not an approval document and NFPA does not approve systems. The requirements in 7.9 through 7.9.16 are based on a lot of research and are consistent with SAE J2498, Minimum Performance of the Warning Light System Used on Emergency Vehicles. 7.9.17 appears to be a collection of things, some having to do with a lighting system and other dealing with mounting lights and other issues. Issues that may be common to all emergency lighting should not be in 7.9.17 but in a separate section and the committee should provide justification for needing or allowing an alternative system including the research to show it is effective and provides an equal level of safety to the users of the ambulance. Some of the requirements may be in conflict with the legal requirements in some jurisdictions such as light colors. Also, other than an implication in the title, there is nothing in the standard as written to make the requirements in 7.9.17 an allowable alternative. It is confusing as written. Is 7.9.17 a standalone set of requirements for do some of the requirements in 7.9 through 7.9.16 also apply?

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

7.9.17 Alternate approved Lighting System.

Committee Statement: Took out "approved" and changed to "system".

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-991 Log #1781 **Final Action: Reject**
(7.9.17)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Delete text to read as follows:

~~7.9.17 Alternate Approved Lighting Systems and its supporting subsections.~~

Substantiation: This section, as written in the draft, insinuates two standards within one. In the interest of consistency and/or standardization, we propose 7.9.17 and its supporting subsections be removed from the draft. The information taken from NFPA 1901 should suffice in this case and bring consistency that is needed across emergency vehicles.

Committee Meeting Action: Reject

Committee Statement: Both NFPA 1901, *Standard for Automotive Fire Apparatus*, and KKK-1822 lighting systems are permitted in NFPA 1917.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-992 Log #1653 **Final Action: Accept in Principle**
(7.9.17.1.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 7.9.17.1.3 to read as follows:

7.9.17.1.3 The warning light systems shall not impair the effectiveness of the legally required ambulance's exterior lighting on the ambulance, with conformity to the requirements of FMVSS No. 108.

Substantiation: NFPA standards are international standards and need to accommodate legal requirements if used outside the United States.

Committee Meeting Action: Accept in Principle

Revise 7.9.17.1.3 to read as follows:

7.9.17.1.3 The warning light systems shall not impair the effectiveness of the legally required ambulance's exterior lighting on the ambulance, with conformity to the requirements of FMVSS No. 108.

Committee Statement: Changed text, but left FMVSS statement.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-993 Log #376 **Final Action: Reject**
(7.9.17.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: ~~The ambulance standard emergency warning light system shall contain twelve fixed red lights, one fixed clear light and one or more fixed amber light(s).~~Delete this section in its entirety.

Substantiation: The proposed standard is arbitrary. Lack of data to determine appropriate amps.

Committee Meeting Action: Reject

Committee Statement: KKK light standard text.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-994 Log #564 **Final Action: Reject**
(7.9.17.2)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete text to read as follows:

~~The ambulance standard emergency warning light system shall contain twelve fixed red lights, one fixed clear light and one or more fixed amber light(s).~~Delete this section in its entirety.

Substantiation: The proposed standard is arbitrary. Lack of data to determine appropriate amps.

Committee Meeting Action: Reject

Committee Statement: KKK light standard text.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-995 Log #1829 **Final Action: Reject**
(7.9.17.2)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

7.9.17.2 The ambulance standard emergency warning light system shall contain twelve fixed red lights, one fixed clear light and may include one or more fixed amber light(s).

Substantiation: Some states do not allow flashing yellow except for highway department vehicles or for directional control.

Committee Meeting Action: Reject

Committee Statement: State or local law supersedes NFPA.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-996 Log #1854 **Final Action: Reject**
(7.9.17.2)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

7.9.17.2 The ambulance standard emergency warning light system shall contain twelve fixed red lights, one fixed clear light and may include one or more fixed amber light(s).

Substantiation: Some states do not allow flashing yellow except for highway department vehicles or for directional control.

Committee Meeting Action: Reject

Committee Statement: State or local law supersedes NFPA.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-997 Log #239 **Final Action: Reject**
(Table 7.9.17.2.1)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Delete Table 7.9.17.2.1.

Substantiation: Delete table. Let companies decide how they want to set their light flash patterns. Having all the body lights flash at one time is not very effective at drawing attention. We have found that if we flash one upper level and one lower level light together then flash the other upper level and the other lower level light is very effective on the side of the ambulance. On the rear of the ambulance we have both flashing lights that will flash through the windows of the rear doors. Those lights flash in an “x” pattern. On the front of the ambulance the grill lights flash independent of the body lights. The body lights on the front of the ambulance, one is on the other is off. On the side, towards the front of the body, when the front light is off the side body light is on. When the side body light is on the front is off. We have found having vehicles in this flash pattern is very effective visually to get noticed by other vehicles either parked or moving.

Committee Meeting Action: Reject

Committee Statement: The NFPA alternate lighting spec allows for the submitter’s proposition.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-998 Log #240 **Final Action: Reject**
(7.9.17.2.4)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Revise text to read as follows:

7.9.17.2.4 Doors or other ancillary equipment shall ~~should~~ not obstruct the standard warning lights. The exception would be for the lower-level warning device on the rear of the unit when patient loading doors are open.

Substantiation: The lower-level warning lights on the rear are going to be covered when placing the cot with patient in the back of the ambulance.

Committee Meeting Action: Reject

Committee Statement: “Shall” is required “should” is not.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-999 Log #1830 **Final Action: Reject**
(7.9.17.2.5 and 7.12)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

7.9.17.2.5 The amber light if used shall be symmetrically located between the two rear facing red lights.

7.12 Door ajar and compartment ajar indicators or a Do-Not-Move Ambulance Light shall be used.

7.12.1 If ajar indicators are used they shall be visible to the driver. The indicators shall flash for a minimum of 1 second and a maximum of 3 seconds then shall remain lighted. When the indicators are flashing an audible warning shall also sound. The indicators will be activated whenever the vehicle transmission is not in park

7.12.1-2 *If a Do-Not-Move Ambulance Light is used it shall comply with the following: A red flashing or rotating light or electronic display within the forward view of the driver, shall be illuminated automatically whenever the ambulance’s parking brake is not fully engaged and any of the following conditions exist:

(1) Any passenger, patient entry or equipment compartment door is not closed.

(2) Any equipment rack is not in the stowed position

(3) Any other device permanently attached to the ambulance is open, extended, or deployed in a manner that is likely to cause damage to the ambulance if the ambulance is moved.

Substantiation: Added cost without much benefit over a door ajar light.

Committee Meeting Action: Reject

Committee Statement: Two different proposals in one, removing the amber light from the KKK spec would change the lighting package.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1000 Log #1855
(7.9.17.2.5 and 7.12)

Final Action: Reject

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

7.9.17.2.5 The amber light if used shall be symmetrically located between the two rear facing red lights.

7.12 Door ajar and compartment ajar indicators or a Do-Not-Move Ambulance Light shall be used.

7.12.1 If ajar indicators are used they shall be visible to the driver. The indicators shall flash for a minimum of 1 second and a maximum of 3 seconds then shall remain lighted. When the indicators are flashing an audible warning shall also sound. The indicators will be activated whenever the vehicle transmission is not in park

7.12.1-2*If a Do-Not-Move Ambulance Light is used it shall comply with the following: A red flashing or rotating light or electronic display within the forward view of the driver, shall be illuminated automatically whenever the ambulance's parking brake is not fully engaged and any of the following conditions exist:

(1) Any passenger, patient entry or equipment compartment door is not closed.

(2) Any equipment rack is not in the stowed position

(3) Any other device permanently attached to the ambulance is open, extended, or deployed in a manner that is likely to cause damage to the ambulance if the ambulance is moved.

Substantiation: Added cost without much benefit over a door ajar light.

Committee Meeting Action: Reject

Committee Statement: Two different proposals in one, removing the amber light from the KKK spec would change the lighting package.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1001 Log #1742
(7.10.2)

Final Action: Reject

Submitter: Christopher Anderson, Bell Ambulance, Inc.

Recommendation: Add new text to read as follows:

7.10.2 Where furnished, air horns, electric siren(s), and electronic siren speaker(s) shall be mounted as low and as far forward on the ambulance as is practical.

Substantiation: The requirement to have the air horns as low and as far forward on the ambulance as is practical, is not practical in northern states such as Wisconsin and Minnesota. In the winter, the air horns would quickly become packed with snow and ice, rendering them useless.

Committee Meeting Action: Reject

Committee Statement: Warning devices must be as low as possible for maximum effectiveness and driver safety.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1002 Log #377 **Final Action: Accept in Principle**
(7.10.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: The siren, with the exception of cancellation effects due to dual speakers, when tested in a full anechoic chamber with test equipment and methods, shall conform to California Administrative Code, Title 13, Article 8. Delete this section in its entirety.

Substantiation: The proposed standard sites a specific state environmental standard not a national standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1005 (Log #1654).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1003 Log #563 **Final Action: Accept in Principle**
(7.10.4)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete text to read as follows:

The siren, with the exception of cancellation effects due to dual speakers, when tested in a full anechoic chamber with test equipment and methods, shall conform to California Administrative Code, Title 13, Article 8. Delete this section in its entirety.

Substantiation: The proposed standard sites a specific state environmental standard not a national standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1005 (Log #1654).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1004 Log #1423 **Final Action: Accept in Principle**
(7.10.4)

Submitter: Robert Spangler, Federal Signal Corp.

Recommendation: Delete this paragraph and all sub-paragraphs.

Substantiation: NFPA 1901 and NFPA 1907 have been requiring the same siren compliance since 1995. The specific standards for compliance are detailed in SAE J1849, and the added wording is redundant and possibly conflicting. This is a minimum standard and if two speakers are desired then the end user may specify same.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1005 (Log #1654).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1005 Log #1654 **Final Action: Accept**
(7.10.4 through 7.10.4.7)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 7.10.4 through 7.10.4.7

Substantiation: Paragraph 7.10.1.1 requires the siren meet the requirements of SAE J1849. Adding all the additional requirements in 7.10.4 through 7.10.4.7 sounds like the committee is limiting the selection to an electronic siren without stating it. This is design restrictive. More important, it can create conflicts in requirements. The requirement in California Administrative Code, Title 13, is too broad as it covers many things other than sirens.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1006 Log #1490 **Final Action: Accept in Principle**
(7.10.4.1)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Revise text to read as follows:

7.10.4.1 The siren shall be capable of producing a continuous warning sound at a minimum level of 123 dB, A weighted, at 3 m (10 ft) on axis in the "wail mode" with "yelp" falling within 1 dB with 13.6 volts +/- 1% input, at a fundamental frequency in the range of 500 Hz to 2000 Hz maximum.

Substantiation: A study conducted by Robert Faugh (NYSP, retired) has demonstrated that the wail siren is the only sound to have reasonable penetration into cars the ambulance is approaching. As such, yelp, phaser, taser,

and such should not be incorporated into an ambulance siren.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1005 (Log #1654).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1007 Log #1422 **Final Action: Accept in Principle**
(7.10.4.2 and 7.9.17.6.2)

Submitter: Robert Spangler, Federal Signal Corp.

Recommendation: Delete both paragraphs.

Substantiation: NFPA 1901 and NFPA 1907 have been requiring the same lighting and siren compliance since 1995. There has been, to our knowledge, no issues with non-complying warning systems for vehicles that respond to similar, if not, the same emergency situations as an ambulance. Short of elimination, then other testing agencies exist that could provide similar independent compliance certifications if NFPA.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1005 (Log #1654).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1008 Log #726 **Final Action: Reject**
(7.10.4.7)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

7.10.4.7 The electronic siren shall be tested, approved and listed with the Automotive Manufacturers Equipment Compliance Agency (AMECA) accredited laboratory independent from the Siren manufacturer's own labs and listed with the AMECA for compliance with the requirements in this specification.

Substantiation: I don't think you would want the manufacturer of the siren testing / listing their own product. It needs to be tested independently.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-1005 (Log #1654).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1009 Log #1384 **Final Action: Reject**
(7.11.1)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Add new text to read as follows:

Exterior and Interior Lighting.

Substantiation: Cabinet/storage lighting levels should be specified. Light levels in the cabinets where medical devices and medications are stored should be at a level sufficient to ensure the proper device or medication is chosen.

Committee Meeting Action: Reject

Committee Statement: No specific recommendation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1010 Log #124 **Final Action: Reject**
(7.11.2)

Submitter: Greg Schuessler, Sedgwick County EMS

Recommendation: Add new text to read as follows:

7.11.2.4 Scene lights shall incorporate 15-26 degree downward internal optics.

Substantiation: Scene lights need to project lighting down on the scene of a call to give providers the best lighting to work on patients. A 15-26 degree downward projection will illuminate the scene at 10-30 feet more effectively than a non-downward projected light. This is bore out of 30 years experience in a suburban EMS system. Furthermore, rural system rely on this downward illumination at the scene of most outdoor calls when the ambulance is within the 30 foot distance to the victim(s).

Committee Meeting Action: Reject

Committee Statement: Purchaser shall decide with manufacturer how scene lights are focused.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1011 Log #727 **Final Action: Reject**
(7.11.2 and 7.11.3)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

7.11.2 Scene Lighting.

7.11.2.1 Scene lights shall be located on both the sides of the ambulance.

7.11.2.2 Scene lights shall be not less than 75 in. (1.9 m) above the ground and unobstructed by open doors.

7.11.2.3 Scene light switches shall be located on the cab console and control each side independently.

~~7.11.3 Load Lighting.~~

7.11.3.1 The ~~perimeter~~ loading area shall be illuminated to a level of at least 1 fc at a distance of ~~within the first 5 ft (1.5 m) from the vehicle and 0.3 fc at a distance of up to 10 ft (3 m) from the vehicle.~~

7.11.3.2 Compliance of the ~~scene~~ load lighting illumination shall be validated by testing a substantially similar ambulance in accordance with AMD 024, Perimeter Illumination Test.

~~7.11.3.3 Load lights shall be not less than 75 in. (1.9 m) above the ground and unobstructed by open doors.~~

7.11.3.4 The rear scene ~~Load~~ lights shall turn on whenever the rear patient entry doors are opened.

7.11.3.5 The right side scene lights shall turn on whenever the right patient entry doors are opened.

~~7.11.3.5 Load light switches shall allow for manual operation when the doors are closed.~~

Substantiation: Lots of changes in these two sections.

First. Scene lights and Load lights can be combined. Basically they are perimeter illumination devices (AMD 024 Test). Renumber to NFPA sections and reword "Load" with "Scene"

Second. The changes in (former) section 7.11.3.1 say measure at 5 and 10 feet. Before it could be construed to measure at 0-5 feet and 5-10 feet. For obvious reasons, not one would pass the 1 F.C. requirement at zero feet.

Third. The test should be tested with the compartment/entry doors open. With the doors in the open position it is possible they will cast a shadow at the measuring points.

Committee Meeting Action: Reject

Committee Statement: Load and Scene are commonly used to describe the side and rear lighting.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1012 Log #1655 **Final Action: Reject**
(7.11.3.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 7.11.3.1 to read as follows:

7.11.3.1 The loading area shall be illuminated to a level of at least 2 fc (20 lx) ±fe within the first 5 ft (1.5 m) from the vehicle and 0.3 fc (30 lx) up to 10 ft (3 m) from the vehicle.

Substantiation: This will make the requirement consistent with NFPA 1901 for fire apparatus. Tripping while getting into and out of emergency vehicles is a common cause of injuries and better illumination of the ground area will increase the chances of seeing a tripping hazard at night. Lighting needs to be consistent in these transition areas.

Committee Meeting Action: Reject

Committee Statement: Full committee feels that 1 fc is adequate.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1013 Log #378 **Final Action: Reject**
(7.11.3.6 (New))

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Add new text to read as follows:

Rear load lights auto-activate when vehicle is placed in reverse.

Substantiation: The proposed standard sites a specific state environmental standard not a national standar The document should include a national standard addressing rear load lights auto-activating when the vehicle is placed in reverse.

Committee Meeting Action: Reject

Committee Statement: Purchaser shall work that out with manufacturer.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1014 Log #562 **Final Action: Reject**
(7.11.3.6 (New))

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Add text to read as follows:

Rear load lights auto-activate when vehicle is placed in reverse.

Substantiation: The proposed standard sites a specific state environmental standard not a national standard. The document should include a national standard addressing rear load lights auto-activating when the vehicle is placed in reverse.

Committee Meeting Action: Reject

Committee Statement: Purchaser shall work that out with manufacturer.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1015 Log #1782 **Final Action: Reject**
(7.11.4 through 7.11.4.2)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Delete text to read as follows:

7.11.4 Ambulance Exterior DOT Lighting:

7.11.4.1 The exterior ambulance lighting shall include running lights and all required FMVSS 108 lighting.

7.11.4.2 The lower front and rear side marker lights shall flash in conjunction with the directional signals.

Substantiation: This section, as written in the draft, appears to have redundancy with Section 7.14 and its subsections up to 7.14.4. The DOT lighting is required by FMVSS 108 and the vehicle must be completed in accordance will, the incomplete vehicle document as required by Federal law. We propose 7.11.4 be removed but keep 7.14 and its subsections up to 7.14.4.

Committee Meeting Action: Reject

Committee Statement: Stating a requirement two times does not create a conflict.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1016 Log #1656 **Final Action: Accept in Principle**
(7.11.4.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 7.11.4.1.

Substantiation: This paragraph is not needed and is ambiguous. The term running lights is not defined.

Section 4.5 as revised in a proposal requires the ambulance to meet all applicable federal and state or provincial laws and regulations.

NFPA standards are international standards and need to accommodate legal requirements if used outside the United States.

Committee Meeting Action: Accept in Principle

Revise 7.11.4.1 to read:

7.11.4.1 The exterior ambulance lighting shall include ~~running lights~~ and all required FMVSS 108 lighting.

Committee Statement: The committee deleted the reference to running lights.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1017 Log #1657 **Final Action: Reject**
(7.11.5.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 7.11.5.1 to read as follows:

7.11.5.1 The ambulance shall be equipped with lighting that is capable of providing illumination at a minimum level of 2 fc (20 lx) 0.3 fc on ground areas within 30 in. (800 mm) of the edge of the ambulance in areas designed for personnel to climb into or onto the ambulance or descend from the ambulance to the ground level.

Substantiation: This will make the requirement consistent with NFPA 1901 for fire apparatus. Tripping while getting into and out of emergency vehicles is a common cause of injuries and better illumination of the ground area will increase the chances of seeing a tripping hazard at night. The proposal to add a new paragraph 7.11.6.3.4.4 using requirements from AMD 016 requires 2 fc (20 lx) in the side door step area. Lighting needs to be consistent in these transition areas.

Committee Meeting Action: Reject

Committee Statement: The committee feels that 1 fc is adequate.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1018 Log #729 **Final Action: Reject**
(7.11.6.x (New))

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

7.11.6.x.x Open door entry illumination

7.11.6.x.x when either the rear or side door opens on the patient compartment, the low level lighting provided by the overhead dome lights shall be illuminated.

7.11.6.x.x the illumination provided for entry shall provide 3.5 FC along the center line of the patient compartment.

7.11.6.x.x Compliance of the open door entry illumination...

Substantiation: It seems the open door entry illumination has been discarded

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

The revised Section 7.11.6.3.5 requires lights automatically activated in the low setting when the side entry or rear entry patient compartment doors are opened.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1019 Log #728 **Final Action: Reject**
(7.11.6.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

7.11.6.1* The ambulance shall have sufficient lighting to provide an average level of 1 fc at each seating surface in the driving compartments.

7.11.6.1.1 The average shall be of three measurements.

7.11.6.1.2 All measurements are to be taken on the forward edge of the seat, on the seating surface, with a calibrated light meter.

7.11.6.1.3 One measurement shall be at the center of the measuring area, the other measurements are to be a minimum of 8" away from the center location on each side.

Substantiation: If you are going to state a requirement you need to have a standard test method.

Committee Meeting Action: Reject

Committee Statement: Cab lighting is provided by the chassis manufacturer.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1020 Log #1659 **Final Action: Accept in Principle**
(7.11.6.3.4.1 through 7.11.6.3.5 (misnumbered as 7.11.6.2.5))

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 7.11.6.3.4.1 through 7.11.6.3.5 (misnumbered as 7.11.6.2.5) to read as follows:

7.11.6.3.4.1 In the high setting, the patient compartment floor shall have a minimum of not be less than 15 foot candles of illumination intensity, measured along the centerline of the clear floor.

~~(A) Compliance of the patient compartment floor illumination shall be validated by testing a substantially similar ambulance in accordance with AMD 016, Patient Compartment Lighting Test.~~

7.11.6.3.4.2 ~~7.11.6.2.4.2*~~ In the high setting, the primary cot, in the high setting, shall be provided with a minimum of 35 foot candles of illumination measured on at least 90 percent of the cot's surface area.

~~(A) Compliance of the patient cot illumination shall be validated by testing a substantially similar ambulance in accordance with AMD 016, Patient Compartment Lighting Test.~~

7.11.6.3.4.3 In the low setting, the patient compartment floor shall have a minimum of 3.5 foot candles of illumination measured along at least 85% of the centerline length

7.11.6.3.4.4 In the low setting the side entry step shall be illuminated to a minimum of 2.0 foot candles measured in the center of the step area.

7.11.6.3.4.5 Compliance of the requirements in 7.11.6.3.4.1 through 7.11.6.3.4.4 shall be validated by testing a substantially similar ambulance in accordance with AMD 016, Patient Compartment Lighting Test.

7.11.6.3.5 ~~7.11.6.2.4.3~~ The patient compartment lighting (in the low setting) shall be automatically activated in the low setting when the side entry or rear entry patient compartment doors are opened.

~~7.11.6.2.5 Compliance of lights activated by the side entry door and rear entry door shall be validated by testing a substantially similar ambulance in accordance with AMD 016, Patient Compartment Lighting Test.~~

Substantiation: The change standardizes wording within the requirements and adds wording for requirements of the low settings of the lighting which is consistent with AMD 016. Rearrangement of text allows for one reference to AMD 016.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12). References to AMD were changed.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1021 Log #1385
(7.11.6.3.3)

Final Action: Reject

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Patient Compartment Illumination - All interior lighting fixture shall not protrude more than 1.5 in. (38 mm) from the mounting surface.

Substantiation: 1.5 in. of protrusion is not necessary with the lights in the industry now. This should be lowered to 1/2 in. to avoid head collisions and scalp burns.

Committee Meeting Action: Reject

Committee Statement: Too restrictive of incandescent and halogen dome lamps.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1022 Log #1491
(7.11.6.3.3)

Final Action: Reject

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Revise text to read as follows:

7.11.6.3.3 All interior lighting fixtures shall not protrude more than 1.5 in. (38 mm) from the mounting surface.

Substantiation: With the availability of flush mounted lighting, there should be no need for any light in the patient compartment to protrude.

Committee Meeting Action: Reject

Committee Statement: Too restrictive of incandescent and halogen dome lamps.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1023 Log #1228
(7.11.7.2)

Final Action: Reject

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

7.11.7.2 Switches for all compartment lighting shall be readily accessible, except when the compartment lighting system is designed so that the lighting is automatic when the door is opened.

Substantiation: Many of the ambulance manufacturers utilize automatic lighting for compartments, this section needs to take that into account.

Committee Meeting Action: Reject

Committee Statement: Door switches are typically readily accessible.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1024 Log #1658
(7.11.8)

Final Action: Reject

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 7.11.8 to read as follows:

7.11.8 Each step well shall be illuminated ~~when door is open~~ to a minimum of 2 fc (20 lx) +fc on 90 percent of the step surface ~~when the door to that step area is open.~~

Substantiation: The standard is currently inconsistent with lighting on step areas and ground lighting around those step areas. A consistent minimum of 2 fc (20 lx) is needed to provide sufficient lighting and to reduce stepping injuries. This is one of the changes needed for consistency.

Committee Meeting Action: Reject

Committee Statement: The committee felt that 1 fc was adequate.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1025 Log #1227 **Final Action: Reject**
(7.11.9)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

7.11.9 Testing. All interior and exterior lights mounted in wet locations shall be tested by the component manufacturer to ensure in conformance with SAE J575.

Substantiation: Again, the burden of testing needs to fall on the Manufacturer of the component, since they and only they know the engineering requirements and limits of the component.

Committee Meeting Action: Reject

Committee Statement: This is already addressed in 7.9.17.5.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1026 Log #379 **Final Action: Reject**
(7.12)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: ~~Do Not Move Ambulance Light~~ Delete this section in its entirety.

Substantiation: The proposed standard is not necessary.

Committee Meeting Action: Reject

Committee Statement: The committee feels this section is necessary.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1027 Log #545 **Final Action: Reject**
(7.12)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Revise the following text:

~~Do Not Move Ambulance Light~~ Delete this section in its entirety.

Substantiation: The proposed standard is not necessary

Committee Meeting Action: Reject

Committee Statement: The committee feels this section is necessary.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1028 Log #291 **Final Action: Accept**
(7.12.1)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Revise text to read as follows:

7.12.1* A red flashing or rotating light or electronic display within the forward view of the driver, shall be illuminated automatically whenever the ambulance's ignition is in the run position, parking brake is not fully engaged and any of the following...

Substantiation: This feature does not need to be constant hot since OEM chassis have a park pawl to prevent the unit from moving when the transmission is in park.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1029 Log #711 **Final Action: Reject**
(7.12.1)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: ambulance's parking brake

Substantiation: ambulance's transmission is not in park, or the parking brake

Committee Meeting Action: Reject

Committee Statement: This requirement would be too restrictive.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1030 Log #1216 **Final Action: Reject**
(7.12.1)

Submitter: Mark D. Meijer, Life EMS Ambulance

Recommendation: Delete the following text:

A red flashing or rotating light or electronic display within the forward view of the driver, shall be illuminated automatically whenever the ambulance's parking brake is not fully engaged and any of the following conditions exist:

(1) Any passenger, patient entry or equipment compartment door is not closed.

(2) Any equipment rack is not in the stowed position.

(3) Any other device permanently attached to the ambulance is open, extended, or deployed in a manner that is likely to cause damage to the ambulance if the ambulance is moved.

Substantiation: The proposed standard is not necessary.

Committee Meeting Action: Reject

Committee Statement: The committee feels this section is necessary.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1031 Log #1783 **Final Action: Reject**
(7.12.1)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Revise text to read as follows:

7.12.1* A red flashing or rotating light or electronic display optical warning device within the forward view of the driver, shall be illuminated automatically whenever the ambulance IS parking brake is not fully engaged and any of the following conditions exist:

(1) Any passenger, patient entry or equipment compartment door is not closed.

(2) Any equipment rack is not in the stowed position.

(3) Any other device permanently attached to the ambulance is open, extended, or deployed in a manner that is likely to cause damage to the ambulance if the ambulance is moved.

Substantiation: The proposed draft verbiage requires a red warning light for the scenarios presented in the supporting text. Given the number of red lights already required on the vehicle, we propose an optical warning device. This does not restrict the customer to a red light but rather lets them choose an alternate color light or other means.

Committee Meeting Action: Reject

Committee Statement: The committee believes the standard section is acceptable.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1032 Log #10 **Final Action: Accept**
(7.12.2)

Submitter: Dan O'Brien, Malley Industries, Inc.

Recommendation: Revise text to read as follows:

From the requirements of 7.13.1 7.12.1.

Substantiation: To correct the reference.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1033 Log #20 **Final Action: Accept**
(7.12.2)

Submitter: Brendan Kearney, Boston EMS

Recommendation: 7.12.2 Compartments meeting all of the following conditions shall be permitted to be exempt from the requirements of 7.13.1: (7.12.1) [there is no “7.13.1” – this should be referring to 7.12.1.]

Substantiation: 7.12.2 Compartments meeting all of the following conditions shall be permitted to be exempt from the requirements of 7.13.1: (7.12.1) [there is no “7.13.1” – this should be referring to 7.12.1.]

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1034 Log #710 **Final Action: Accept**
(7.12.2)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Reference to 7.13.1.

Substantiation: Wrong reference point. Should be 7.12.1

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1035 Log #1226 **Final Action: Accept**
(7.12.2)

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

7.12.2 Compartments meeting all of the following conditions shall be permitted to be exempt from the requirements of 7.12.1 7.13.1.

Substantiation: This should be 7.12.1 since 7.13.1 would fall under backup alarm, and doesn't exist.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1036 Log #1492 **Final Action: Accept**
(7.12.2)

Submitter: Ken Beers, Canandaigua Emergency Squad, Inc.

Recommendation: Revise text to read as follows:

7.12.2 Compartments meeting all of the following conditions shall be permitted to be exempt for the requirements of 7.12.1 7.13.1.

Substantiation: The reference is to the wrong section of the document.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1037 Log #1784 **Final Action: Accept**
(7.12.2)

Submitter: Wesley D. Chestnut, Spartan Motors, Inc.

Recommendation: Revise text to read as follows:

7.12.2 Compartments meeting all of the following conditions shall be permitted to be exempt from the requirements of 7.13.1 7.12.1.

Substantiation: The proposed draft verbiage refers to 7.13.1. In the draft, there is no 7.13.1 written. We believe the intent is to exempt items from the requirements identified in 7.12.1.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1038 Log #1831 **Final Action: Accept in Principle**
(7.12.2 and 7.12.3)

Submitter: Glen Oliphant, La Farge, WI

Recommendation: Revise text to read as follows:

7.12.2 3 Compartments meeting all of the following conditions shall be permitted to be exempt from the requirements of 7.13.1 7.12.2.

(1) The volume is less than or equal to 4 ft3 (0.1 m3).

(2) The compartment has an opening less than or equal to 144 in.2 (92,900 mm2).

(3) The open door does not extend sideways beyond the mirrors or up above the top of the ambulance.

7.12.3 4 If equipped with a do-not-move ambulance light it shall be labeled to read "Do Not Move Ambulance When Light Is On."

Substantiation: To correct typo.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1036 (Log #1492).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1039 Log #1856 **Final Action: Accept in Principle**
(7.12.2 and 7.12.3)

Submitter: John Matthes, Kickapoo Valley Rescue Squad

Recommendation: Revise text to read as follows:

7.12.2 3 Compartments meeting all of the following conditions shall be permitted to be exempt from the requirements of 7.13.1 7.12.2.

(1) The volume is less than or equal to 4 ft3 (0.1 m3).

(2) The compartment has an opening less than or equal to 144 in.2 (92,900 mm2).

(3) The open door does not extend sideways beyond the mirrors or up above the top of the ambulance.

7.12.3 4 If equipped with a do-not-move ambulance light it shall be labeled to read "Do Not Move Ambulance When Light Is On."

Substantiation: To correct typo.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1036 (Log #1492).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1040 Log #292 **Final Action: Accept**
(7.12.3)

Submitter: Paul Holzapfel, Wheeled Coach Industries, Inc.

Recommendation: Revise text to read as follows:

7.12.3 If equipped with a do-not-move ambulance light it shall be labeled to read "Do Not Move Unit Ambulance When Light Is On"

Substantiation: Label verbiage was too long to put on a small label.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1041 Log #1006 **Final Action: Reject**
(7.13)

Submitter: Thomas Lenart, CT Dept of Public Health Office of Emergency Medical Services

Recommendation: New text to read as follows:

7.13* Backup Alarm.

An electric or electronic backup alarm shall be provided that meets the Type D (87 dBA) requirements of SAE J994, *Alarm—Backup—Electric, Laboratory Performance Testing*. Additionally there shall be a video monitoring system visible to the operator activated when backing the vehicle.

Substantiation: 7.13 Back-up alarm – it was felt that the vehicle in addition to a back up alarm should be outfitted with a camera for the operator to view what is in the rear, this is not to supplant a spotter if one is available however if it is a two person crew, one is tending the patient while the other is backing the vehicle.

Committee Meeting Action: Reject

Committee Statement: The committee feels this would be too restrictive.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1042 Log #1687 **Final Action: Reject**
(7.13)

Submitter: Peter I. Dworsky, Monoc

Recommendation: There should be a section requiring a back camera.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: The committee feels this would be too restrictive.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1043 Log #380 **Final Action: Accept in Principle**
(7.13.1 (New))

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Add new text to read as follows:

Back up alarm should not have capacity to be turned off or disconnected-
Substantiation: FMVSS Standard. Reference Pinellas County (FL) death from disconnected back up alarm.

Committee Meeting Action: Accept in Principle

Add text to read as follows:

7.13.1 Back up alarm shall not have capacity to be turned off or disconnected.

Committee Statement: Changed “should” to “shall” for mandatory requirement.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1044 Log #544 **Final Action: Accept in Principle**
(7.13.1 (New))

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Add text to read as follows:

Back up alarm should not have capacity to be turned off or disconnected

Substantiation: FMVSS Standard. Reference Pinellas County (FL) death from disconnected back up alarm.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1043 (Log #380).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1045 Log #1386 **Final Action: Reject**
(7.14)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Add new text to read as follows:

Stop, Tail and Directional Lights.

Substantiation: This should also require a DOT 3rd brake light. Most ambulances already have them but are not in a spec.

Committee Meeting Action: Reject

Committee Statement: This is a DOT FMVSS-108 issue.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1046 Log #1660 **Final Action: Reject**
(7.14.1 and 7.14.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 7.14.1 and 7.14.2.

Substantiation: These paragraphs are not needed. Section 4.5 as revised in a proposal requires the ambulance to meet all applicable federal and state or provincial laws and regulations.

NFPA standards are international standards and need to accommodate legal requirements if used outside the United States.

Committee Meeting Action: Reject

Committee Statement: The committee does feel they are necessary.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1047 Log #381 **Final Action: Reject**
(7.14.4.1 (New))

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Add text to read as follows:

Equipment should not be mounted where contact by door or step is possible.

Substantiation: Equipment can be mounted in a way that allows the door or the step to come in contact when opened or activated.

Committee Meeting Action: Reject

Committee Statement: The proposal is not about low voltage electrical.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1048 Log #543 **Final Action: Reject**
(7.14.4.1 (New))

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Add text to read as follows:

Equipment should not be mounted where contact by door or step is possible.

Substantiation: Equipment can be mounted in a way that allows the door or the step to come in contact when opened or activated.

Committee Meeting Action: Reject

Committee Statement: The proposal is not about low voltage electrical.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1049 Log #1661 **Final Action: Accept**
(8.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 8.1 to read as follows:

8.1 General Application. The ambulance shall be furnished with an alternating current (AC) line voltage electrical system consisting of a power source and a 2-wire plus ground line voltage (AC) wiring system which shall meet; the applicable requirements of this chapter.

Substantiation: If it is the intent of the committee that the line voltage wiring system and power source on the ambulance be AC, then it need to be stated as such. There is no where that states the power source needs to produce AC power. See 3.3.36 for the definition of line voltage which allows DC current.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1050 Log #714 **Final Action: Reject**
(8.2.1)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Line Voltage Utility Power

Substantiation: Ambulance builders have no way of controlling final users power supply system or regulating it. Utility power is at the ambulance working location. This is END USER responsibility.

Committee Meeting Action: Reject

Committee Statement: Submitter's recommendation is unclear

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1051 Log #1662 **Final Action: Accept in Principle**
(8.2.1, 8.2.1.1 and 8.2.1.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 8.2.1.

8.2.1 Line Voltage Utility Power Listing shall be by a nationally recognized testing laboratory, recognized by OSHA under Appendix A to 29 CFR 1910.7. Revise 8.2.1.1 and 8.2.1.2 to read as follows:

8.2.1.1 The line voltage electrical AC system shall be designed is to be utilized while the vehicle is stationary for powering maintenance devices, medical equipment and battery chargers.

8.2.1.2 The line voltage electrical AC system shall not be the source of power utilized for operational ambulance interior lighting, such as patient compartment lights.

Substantiation: 8.2.1 makes no sense. It is titled utility power where the chapter deals with ambulance onboard line voltage power generation and the associated wiring. What is required to be listed? Also OSHA is an agency of the U.S. government and this standard should not restrict international users of this standard to using U.S. government regulations.

8.2.1.1 as written is an operational issue, and not even stated as a requirement for ambulances. Other changes are to clarify the requirements.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

8.2.1 Line Voltage Utility Power Listing shall be by a nationally recognized testing laboratory, recognized by OSHA under Appendix A to 29 CFR 1910.7.

8.2.1.1 The AC system is to be utilized while the vehicle is stationary for powering maintenance devices, medical equipment and battery chargers.

8.2.1.2 The AC system shall not be utilized for operational ambulance interior lighting, such as patient compartment lights.

8.2.1 Conformance with National Electrical Code. All components, equipment, and installation procedures shall conform to NFPA 70, National Electrical Code, except where superseded by the requirements of this chapter.

8.2.1.1 Where the requirements of this chapter differ from those in NFPA 70, the requirements in this chapter shall apply.

8.2.1.2 Where available, line voltage electrical system equipment and materials included on the apparatus shall be listed and used only in the manner for which they have been listed.

8.2.1.3 All equipment and materials shall be installed in accordance with the manufacturer's instructions.

Committee Statement: Replaced Section 8.2.1 with wording from NFPA1901-22.2.3 Conformance with National Electrical Code.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1052 Log #53 **Final Action: Accept in Principle**
(8.2.1.2)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Delete text to read as follows:

8.2.1.2 The AC system shall not be utilized for operational ambulance interior lighting, such as patient compartment lights.

Substantiation: While doing vehicle checks, training, maintenance, cleaning or other functions when the vehicle is parked, AC powered lights will save vehicle battery life an allow the crew to work in a well lit environment.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1051 (Log #1662).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1053 Log #1663 **Final Action: Accept in Principle**
(8.2.2.1 and 8.2.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Break 8.2.2.1 into three separate paragraphs as follows:

8.2.2.1* The ambulance shall be equipped with a line voltage fixed power inlet (shoreline inlet).

8.2.2.2 The shoreline inlet it shall be a permanently mounted inlet (male – recessed-type receptacle having with cover), with a minimum rating of 15 amperes and conforming to the NEMA configuration appropriate for the voltage rating, and

8.2.2.3 The shoreline inlet shall be wired directly to the system or device to be powered or wired to a transfer switch where required by 8.8.2.

Renumber 8.2.2.2 through 8.2.2.4 as 8.2.2.4 through 8.2.2.6

Revise 8.2.3 as follows:

8.2.3 Receptacle:

8.2.2.7 8.2.3.1 When an external power source (utility power) is connected to the shoreline receptacle, it shall energize the vehicle's internal line voltage circuit from an external power source (utility power).

8.2.2.8 8.2.3.2 A proper mating, weatherproof, minimum 15 ampere female connector body conforming to the NEMA configuration provided in 8.2.2.2 shall also be furnished without cable and tagged specifying the size, type of wire necessary, and the polarity of the future hookup.

Substantiation: As written, 8.2.2.1 is confusing and rambling. Breaking the requirement into three paragraphs clarifies the understanding. Current 8.2.2.2 requires a spring loaded cover so it is not necessary to mention a cover in 8.2.2.1.

8.2.3.1 and 8.2.3.2 are being renumbered as they are part of 8.2.2, Line Voltage Supplied from an External Source.

In 8.2.3.1, it is the external power source that energizes the internal circuits not the receptacle.

In 8.2.3.2, the changes insure that the connector provided matches to the inlet required in 8.2.2.2.

Committee Meeting Action: Accept in Principle

Revise 8.2.2.1 into three separate paragraphs as follows:

8.2.2.1* The ambulance shall be equipped with a line voltage fixed power inlet ("shoreline inlet").

8.2.2.2 The shoreline inlet it shall be a permanently mounted (male – recessed-type receptacle with cover), with having a minimum rating of 15 amperes and conforming to the NEMA configuration appropriate for the voltage rating and

8.2.2.3 The shoreline inlet shall be wired directly to the system or device to be powered or wired to a transfer switch where required by 8.8.2.

8.2.2.4 When an external power source is connected to the shoreline receptacle, it shall energize the vehicle's internal line voltage circuit. from an external power source (utility power).

8.2.2.5 A proper mating, weatherproof, ~~minimum 15-ampere female~~ connector body conforming to the NEMA configuration provided in 8.2.2.2 shall also be furnished without cable and tagged specifying the size, type of wire necessary, and the polarity of the future hookup.

8.2.2.6 ~~8.2.2.3~~ The connection shall be permanently labeled as shown in Figure 8.2.2.6.

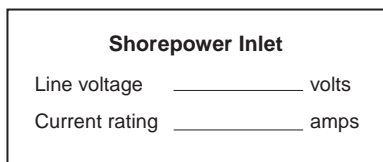


Figure 8.2.2.6 Shore Inlet Label

8.2.2.7 ~~8.2.2.4~~ The protective ground from the shoreline inlet shall be bonded to the vehicle frame.

RE-NUMBER SUBSEQUENT SECTIONS

Committee Statement: The committee modified text to meet intent.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1054 Log #1387

Final Action: Reject

(8.2.2.4)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

The protective ground from the shoreline inlet shall be bonded to the vehicle frame.

Substantiation: It is unclear what kind of ground this is in reference to.

Committee Meeting Action: Reject

Committee Statement: The committee feels standard is clear.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1055 Log #41

Final Action: Accept in Principle

(8.2.4.3)

Submitter: Alexander Cook, Vanner, Inc.

Recommendation: Revise text to read as follows:

The maximum voltage supplied to portable equipment shall not exceed ~~±25~~ 132 volts to ground.

Substantiation: The tolerance on the AC voltage is defined in several places in the document as 10 percent, for a 120VAC source this makes the maximum voltage 132VAC which would be in violation of 8.2.4.3 as written, therefore I suggest increasing the limit to 132VAC.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

~~8.2.4.3 The maximum voltage supplied to portable equipment shall not exceed ±25 volts to ground.~~

8.2.4.3 Any fixed line voltage power source shall produce a maximum voltage output of no more than 10% of the power source's full rated voltage.

Committee Statement: The committee used the 10 percent source voltage maximum rather than setting a max voltage.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1056 Log #241

Final Action: Reject

(8.3)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Add new text to read as follows:

8.3 Vehicles equipped with 120 volt or higher voltage operating at 60 Hz.

Substantiation: At section 8.2.6 start 8.3 above then renumber from that point forward.

Everything from that point forward discusses vehicle mounted systems. The way Chapter 8 reads it is hard to tell if the requirements is there or not for all vehicles to have 120 volt power supplies. By separating shoreline power from on-board generator power, cleans this up. Not all ambulances or transport vehicles have on board power supplies. Most ambulances do have shore line 120 volt charging lines.

Committee Meeting Action: Reject

Committee Statement: The committee is not sure of the intent of the submitter's proposal.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1057 Log #1664

Final Action: Accept in Principle

(8.3.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 8.3.2 to read as follows:

8.3.2 Interior Equipment Grounding.

8.3.2.1 In the line voltage electrical system, all exposed metal parts, enclosures, frames, fixtures, and canopies, etc., shall be effectively bonded to the grounding terminals or enclosure of the distribution panel board.

8.3.2.2 Grounding of electrical equipment shall be done by as required in ~~8.3.2.2.1 through 8.3.2.2.6.~~

~~8.3.2.2.1~~ **1)** Connection to a ~~of~~ metal raceway, i.e., conduit or electrical metallic tubing.

~~8.3.2.2.2~~ **2)** A connection between the one or more equipment grounding conductors and a metal box by means of a grounding screw that is ~~(which shall be used for no other purpose)~~ or a listed grounding device.

~~8.3.2.2.3~~ **3.2.2.1** The equipment grounding conductor shall be permitted to be secured under a screw threaded into the fixture canopy other than a mounting screw or cover screw

~~8.3.2.2.2~~ **2.2.2** The equipment grounding conductor and fixture attachment screws shall be permitted to be or attached to a listed grounding means (plate) in a nonmetallic outlet box for fixture mounting. ~~(grounding means shall also be permitted for fixture attachment screws).~~

~~8.3.2.2.4~~ **3.2.2.3** A connection between the one or more equipment grounding conductors brought into a nonmetallic outlet box shall be so arranged that a connection can be made to any fitting or device in that box which requires grounding.

~~8.3.2.2.5~~ **3.2.2.4** Where more than one equipment grounding conductor or branch circuit enters a box, all such conductors shall be in good electrical contact with each other and the arrangement shall be such that the disconnection or removal of a receptacle, fixture, or other device fed from the box will not interfere with or interrupt the grounding continuity.

~~8.3.2.2.6~~ **3.2.2.5** Cord-connected appliances shall be grounded by means of an approved cord with equipment grounding conductor and grounding attachment plug.

Substantiation: The text as currently presented is not grammatically parallel.

Paragraphs 8.3.2.2.1 and 8.3.2.2.2 are not complete thoughts or sentences whereas 8.3.2.2.3 through 8.3.2.2.6 are. Lists need to be consistently one or the other. 8.3.2.2.3 is difficult to figure out and has been split into 2 paragraphs to aid understanding. The word "good" is and ambiguous word in a standard.

While I have attempted to clarify what I think the committee intended, I am not sure I got it all correct.

Committee Meeting Action: Accept in Principle

Revise 8.3.2 to read as follows:

8.3.2 Interior Equipment Grounding.

8.3.2.1 In the line voltage electrical system, all exposed metal components enclosures, frames, fixtures, canopies, etc., shall be effectively bonded to the grounding terminals or enclosure of the distribution panel board.

8.3.2.2 Grounding of electrical equipment shall be done by as required in ~~8.3.2.2.1 through 8.3.2.2.6.~~

~~8.3.2.2.1~~ **1)** Connection to a ~~of~~ metal raceway, i.e.: conduit or electrical metallic tubing.

~~8.3.2.2.2~~ **2)** A connection between the one or more equipment grounding conductors and a metal box by means of a grounding screw that is ~~(which shall be used for no other purpose)~~ or a listed grounding device.

~~8.3.2.2.3~~ **3.2.2.1** The equipment grounding conductor shall be permitted to be secured under a screw threaded into the fixture canopy other than a mounting screw or cover screw

~~8.3.2.2.2~~ **2.2.2** The equipment grounding conductor and fixture attachment screws shall be permitted to be attached to a listed grounding means (plate) in a nonmetallic outlet box for fixture mounting. ~~(grounding means shall also be permitted for fixture attachment screws).~~

~~8.3.2.2.4~~ **3.2.2.3** A connection between the one or more equipment grounding conductors brought into a nonmetallic outlet box shall be so arranged that a connection can be made to any fitting or device in that box which requires grounding.

~~8.3.2.2.5~~ **3.2.2.4** Where more than one equipment grounding conductor or

branch circuit enters a box, all such conductors shall be in good electrical contact with each other and the arrangement shall be such that the disconnection or removal of a receptacle, fixture, or other device fed from the box will not interfere with or interrupt the grounding continuity.

8.3.2.2.6 8.3.2.2.5 Cord-connected appliances shall be grounded by means of an approved cord with equipment grounding conductor and grounding attachment plug.

Committee Statement: The committee revised text to be more clear.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1058 Log #21 **Final Action: Accept in Principle**
(8.3.2.2.1)

Submitter: Brendan Kearney, Boston EMS

Recommendation: 8.3.2.2.1 appears to be an incomplete sentence – makes no sense in present form.

Substantiation: 8.3.2.2.1 appears to be an incomplete sentence – makes no sense in present form.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1057 (Log #1664).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1059 Log #1129 **Final Action: Reject**
(8.3.3.1)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

8.3.3.1 The neutral conductor of the power source shall be bonded to the vehicle frame.

Substantiation: This statement seems to contradict the grounding information contained in Section 8.3.1.1 through 8.3.1.7 clarification is needed.

Has this bonding method been proven compliant with our current GFI and high POT testing requirement from KKK.

Committee Meeting Action: Reject

Committee Statement: This is covered elsewhere in the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1060 Log #1313 **Final Action: Reject**
(8.3.3.1)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

8.3.3.1 The neutral conductor of the power source shall be bonded to the vehicle frame.

Substantiation: Normal practice is to bond the neutral to the ground at only one location—the service panel from which the load is supplied. Is there a sound basis for bonding neutral to the grounded vehicle frame such that neutral and ground are bonded at two locations when the ambulance is connected to shore power?

Committee Meeting Action: Reject

Committee Statement: This is covered elsewhere in the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1061 Log #1388 **Final Action: Reject**
(8.3.3.1 and 8.3.3.2)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Bonding - 8.3.3.1 The neutral conductor of the power source shall be bonded to the vehicle frame.

8.3.3.2 The neutral bonding connection shall occur only at the power source.

Substantiation: This bonding method should be tested to be ensure it is compliant with the GFI and High Pot testing.

Committee Meeting Action: Reject

Committee Statement: NFPA 70, *National Electrical Code*, dictates bonding method.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1062 Log #28 **Final Action: Accept**
(8.4)

Submitter: John F. Bender, Underwriters Laboratories Inc.

Recommendation: Revise text to read as follows:

8.4* Ground Fault Circuit Interrupters.

All line voltage AC circuits of the ambulance shall be protected by listed ground fault circuit interrupters in accordance with ANSI/UL 498, Standard for Safety Attachment Plugs and Receptacles.

Substantiation: Specify that “listed” ground fault circuit interrupters are required in accordance with the appropriate ANSI/UL standard to ensure the ground fault interrupter meets appropriate safety test standard.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1063 Log #712 **Final Action: Reject**
(8.4)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Revise the following text:

All line voltage AC circuits of

Substantiation: All female receptacle devices and their circuits that people interact with on.

Committee Meeting Action: Reject

Committee Statement: The committee is unclear of the submitter’s proposal.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1064 Log #1257 **Final Action: Reject**
(8.4)

Submitter: Scott Rusthoven, Medtec Ambulance Corp.

Recommendation: See attachment labeled 8.4 [not provided].

Substantiation: Wording, if left as is leads one to believe that all GFCI is 5mA. Trip and must be provided on the ambulance. Some circuits if powered through a 5mA GFCI will trip the circuit every time.

Committee Meeting Action: Reject

Committee Statement: The standard does not reflect 5 mA threshold.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1065 Log #1314 **Final Action: Reject**
(8.4)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

8.4* Ground Fault Circuit Interrupters.

All line voltage AC ~~circuits~~ receptacles of the ambulance shall be protected by ground fault circuit interrupters.

Substantiation: Except for underwater pool lights, standard electrical industry practice is to use GFCI protection only for receptacles. In homes built to comply with the National Electrical Code, GFCI protection is required for most outdoor receptacles (since 1973), bathroom receptacle circuits (since 1975), garage wall outlets (since 1978), kitchen receptacles (since 1987), and all receptacles in crawl spaces and unfinished basements (since 1990).

Committee Meeting Action: Reject

Committee Statement: The committee's intent is to protect all circuits with GFCI protection.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1066 Log #1677 **Final Action: Reject**
(8.4)

Submitter: David B. Cole, Life Line Emergency Vehicles

Recommendation: Delete text as follows:

All line voltage AC ~~circuits of the ambulance shall be protected by ground-fault circuit interrupters~~

Substantiation: The previous KKK document had this standard and I believe it was eliminated. The GFI on the incoming side was eliminated due to shoreline GFI system failure.

Committee Meeting Action: Reject

Committee Statement: The committee's intent is to protect all circuits with GFCI protection.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1067 Log #1665 **Final Action: Accept in Principle**
(8.5.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Review 8.5.3 and state what the requirement is that the committee wants.

8.5.3 Generators. If the power source is mechanically driven, it shall comply with Article 445, "Generators," of *NFPA 70*.

Substantiation: Line voltage systems derive their power from some type of generator, alternator or power converter. All are powered by a mechanically driven source of some type. A hydraulically driven generator is mechanically driven. Mechanically driven does not necessarily mean fossil fueled engine. Article 445 of NFPA 70 covers the installation of generators which should probably be independent of what is driving it.

Committee Meeting Action: Accept in Principle

Revise to read as follows:

8.5.3 Generators. If the power source is mechanically driven and mounted on the vehicle, it shall comply with Article 445, "Generators," of *NFPA 70*, *National Electrical Code*.

Committee Statement: Clarified intent.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1068 Log #1666 **Final Action: Accept**
(8.5.9.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 8.5.9.1 to read as follows:

8.5.9.1 Provisions shall be made for placing the generator drive system in operation using controls and switches that are identified and within reach of the operator while seated in the drivers seat or standing upright on the ground, position as designated by the purchaser.

Substantiation: Designations of what the purchaser wants are procurement specification issues and not appropriate in a minimum standard. As modified, the requirement prevents placement of the controls in some obscure place or requiring climbing onto the ambulance body to use the controls.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1069 Log #1315 **Final Action: Accept in Principle**
(8.6.1.2)

Submitter: Jerry Allen, Braun Northwest, Inc.

Recommendation: Revise text to read as follows:

8.6.1.2 The direct drive generator shall be mounted so that it does not ~~change cause~~ the ramp breakover angle, angle of departure, or angle of approach ~~as defined by other components, and it shall not extend into the ground clearance area to fall short of the requirements of Section 5.8.1.~~

Substantiation: It may not always be possible to fit the direct drive generator on the chassis without changing the clearance angles. The main interests are to ensure that the prescribed clearance angles are maintained and that the generator is properly protected.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

8.6.1.2 The direct drive generator shall be mounted so that it does not ~~change cause~~ the ramp breakover angle, angle of departure, or angle of approach to violate the requirements of Section 5.8.1.

Committee Statement: The committee changed text to clarify.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1070 Log #1705 **Final Action: Reject**
(8.6.3.8.2)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Problem: If the generator is going to shut down for lack of fuel when the tank reaches 25% there should be a warning label on the fuel gauge to advise the operator of this fact.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: The committee believes this is a training issue.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1071 Log #54 **Final Action: Reject**
(8.6.4.2)

Submitter: Fred Morrison, Eagle County Ambulance District

Recommendation: Revise text to read as follows:

8.6.4.2* The alternator and/or battery system shall be adequate to provide power for continuous operation for a minimum of 2 4 hours at full output.

Substantiation: Standard too low. Some critical transports are in excess of 3 hours.

Committee Meeting Action: Reject

Committee Statement: This is a minimum standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1072 Log #1667 **Final Action: Reject**
(8.6.6)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete 8.6.6.

Substantiation: What the purchaser wants or specifies in a procurement document is independent of what belongs in a minimum standard. A manufacturer has to be able to manufacture an ambulance that meets the minimum standard without even knowing who the purchaser will be and everything desired beyond that is a procurement issue.

Committee Meeting Action: Reject

Committee Statement: The committee believes the information is good to keep as part of the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1073 Log #1130 **Final Action: Reject**
(8.11)

Submitter: Randy A. Hanson, American Emergency Vehicles

Recommendation: Revise text to read as follows:

8.11* Wiring Methods.

Fixed wiring systems shall be limited to the following:

(1) Metallic or nonmetallic liquidtight flexible conduit rated at temperatures not less than 194°F (90°C) with stranded copper wire rated for wet locations and temperatures not less than 194°F (90°C)

(2) Type SOW, SOOW, SEOW, or SEOOW flexible cord rated at 600 V and at temperatures not less than 300 Degrees F +94°F (90°C)

Substantiation: The loom needs to be upgraded in this section to 300 degrees F.

Committee Meeting Action: Reject

Committee Statement: This is a minimum standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1074 Log #1389 **Final Action: Reject**
(8.11)

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Fixed wiring systems shall be limited to the following: (1) Metallic or nonmetallic liquidtight flexible conduit rated at temperatures not less than 194°F (90°C) with stranded copper wire rated for wet locations and temperatures not less than 194°F (90°C). (2) Type SOW, SOOW, SEOW, or SEOOW flexible cord rated at 600 V and at temperatures not less than 194°F (90°C).

Substantiation: The option of using stranded wire in high temperature loom could prove to be a significant cost reduction.

Committee Meeting Action: Reject

Committee Statement: This is a minimum standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1075 Log #713 **Final Action: Reject**
(8.11.7.2)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: delete

Substantiation: Adds to extra overhead expense of every unit. Every unit can be totally different than the last. Quite often these documents are lost as soon as end user takes possession.

Committee Meeting Action: Reject

Committee Statement: A wiring list is crucial to maintenance and repair.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1076 Log #1668 **Final Action: Reject**
(8.11.7.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise 8.11.7.3 to read as follows:

8.11.7.3 Where pre-wiring for future power sources or devices exists, the un-terminated ends shall be marked with a label showing their wire size and intended function.

Substantiation: Pre-wiring is done in anticipation of adding some power source or device, generally in the relatively near future. Add the intended function to the label does not add cost and can be helpful if more than one un-terminated wire is present in an area.

Committee Meeting Action: Reject

Committee Statement: The manufacturer might not know future intended function.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1077 Log #242 **Final Action: Reject**
(8.12.5.1)

Submitter: Nelson C. Smith, Brunswick, MD

Recommendation: Delete the following text:

8.12.5.1 The patient compartment shall be furnished with a minimum of three (3) line voltage duplex receptacles conforming to NEMA 5-15.

Substantiation: Delete section. Companies operating ambulances know how many and what types of outlets are needed to keep their equipment charged. They also know where they want to have these outlets. Not all ambulances have a need for electrical outlets inside the patient compartment. But instead have the outlets going to outside compartments where the equipment is stored.

Committee Meeting Action: Reject

Committee Statement: Outlets have been an integral ambulance component for a long time.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1078 Log #1555 **Final Action: Accept in Principle**
(Chapter 9)

Submitter: Steve Spata, AMD Technical Committee & National Truck Equipment Association

Recommendation: Use Chapter 9 material from July 2010 version of 1917 draft.

Substantiation: The AMD voted to allow the use of the material that was used for the original Chapter 9 that appeared in the July 2010 version of the draft that was balloted at that time, so this material should be incorporated back into the draft document.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1079 Log #1669
(9.1)

Final Action: Reject

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Move section 9.1 to become section 7.16.

Substantiation: There are testing requirements throughout the standard and those requirements are stated where the corresponding requirements are defined. There is no reason to single out the low voltage electrical system test for inclusion in a separate chapter.

Committee Meeting Action: Reject

Committee Statement: Trying to keep all testing procedures in one section.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1080 Log #730 **Final Action: Accept in Principle**
(9.1.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

9.1.1* The ambulance low voltage electrical system shall be tested as required by this section, the test results shall be certified by the ambulance manufacturer, and the certified test results shall be delivered with the ambulance.

9.1.1.1 The ambient temperature shall be between 32°F and 110°F during the testing.

9.1.1.1.1 The temperature variance while doing the individual testing shall not vary more than 5°F

Substantiation: Section 9 doesn't state any ambient conditions for the testing. A higher/lower temperature may mean the difference between pass/fail.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1081 Log #1225
(9.1.1)

Final Action: Accept in Principle

Submitter: Jacob Spiegel, Jessup, IA

Recommendation: Revise text to read as follows:

9.1.1* The ambulance low voltage electrical system shall be tested as required by this section, the test results shall be certified by the ambulance manufacturer, and the certified test results shall be delivered with the ambulance. All tests shall be performed at 32°F (0°C) and 95°F (35°C).

Substantiation: There needs to be a temperature specified for ambient testing, since the capacity of a battery will decrease as the temperature decreases, since section 6.17.4 uses 32°F (0°C) to 95°F (35°C), this would be a good number to use. Since 0°C is the number that is used to specify cold cranking amps in batteries.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1082 Log #731 **Final Action: Accept in Principle**
(9.1.2.2.2 and 9.1.2.3.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Revise text to read as follows:

9.1.2.2.2 The engine shall be shut off, and the minimum continuous electrical load found in section 7.4.1 shall be activated for 10 minutes.

9.1.2.3.1 The minimum continuous electrical load found in section 7.4.1 shall be activated with the engine running at idle speed.

Substantiation: I would like to see a reference to the minimum electrical load in these sections.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1083 Log #732 **Final Action: Accept in Principle**
(9.1.2.4.1)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

9.1.2.4.1 The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed (high idle).

9.1.2.4.1.1 For the purpose of this section the "total continuous electrical load" includes any device which will impose a load (voltage and amperage) on the electrical system

Substantiation: Is the governed speed the same as high idle? I would like to see a definition for "total continuous electrical load" spelled out in this section.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1084 Log #716 **Final Action: Accept in Principle**
(9.1.2.4.2)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: 2 hours

Substantiation: These chassis are engineered and certified with the alternator package factory installed. A 30 minute test would be sufficient.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1085 Log #733 **Final Action: Accept in Principle**
(9.1.3.5)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add text to read as follows:

9.1.3.5 With the minimum continuous electrical load applied to the system, The battery system shall then be able to restart the engine.

Substantiation: The test doesn't call for the minimum continuous electrical load to be on or not. I suggest it is on.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1086 Log #1670
(9.2)

Final Action: Reject

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Move section 9.2 to become section 8.16.

Substantiation: There are testing requirements throughout the standard and those requirements are stated where the corresponding requirements are defined. There is no reason to single out the line voltage electrical system test for inclusion in a separate chapter.

Committee Meeting Action: Reject

Committee Statement: See committee action on Proposal 1917-3 (Log #12).

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1087 Log #312 **Final Action: Reject**
 (9.2.7.1)

Submitter: Charles D. Drake, SJC Industries Corporation**Recommendation:** Revise text to read as follows:

9.2.7.2 Any power source greater than 3 KW shall be tested on a substantially similar ambulance and the results of the tests of the power source shall be certified by an independent third-party certification organization.

Substantiation: Type testing and documentation of the generator install process provides the necessary protection for the purchaser and retains the price effectiveness versus third party testing of every install. This testing structure mimics the other required third party certifications.

Committee Meeting Action: Reject

Committee Statement: Committee feels it is important to provide third party certification to ensure generator capacity.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1088 Log #717 **Final Action: Reject**
 (9.2.7.2)

Submitter: Jerry Fink, Life Line Emergency Vehicles**Recommendation:** independent third-party certification organization

Substantiation: Adds a great deal of expense to a unit to fly in an inspector to certify the generator system on an ambulance.

Committee Meeting Action: Reject

Committee Statement: Committee feels it is important to provide third party certification to ensure generator capacity.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1089 Log #1671 **Final Action: Reject**
 (9.2.7.2)

Submitter: Carl E. Peterson, Hingham, MA**Recommendation:** Revise 9.2.7.2 to read as follows:

9.2.7.2 The testing of any power source greater than 3 KW shall be witnessed by an organization that meets the requirements of 4.7 and the results of the tests of the power source shall be certified by an independent third-party certification organization.

Substantiation: Paragraphs 4.6.9.1 and 4.6.9.2 seems to indicate the committee wants to have these tests witnessed by an organization that meets ISO/IEC 17025. If that is so, it needs to be stated here.

Committee Meeting Action: Reject

Committee Statement: Committee feels it is important to provide third party certification to ensure generator capacity.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1090 Log #1678
 (9.2.7.2)

Final Action: Reject**Submitter:** David B. Cole, Life Line Emergency Vehicles**Recommendation:** Delete text as follows:

~~The testing of any power source greater than 3 KW shall be witnessed and the results of the tests of the power source shall be verified by an independent third-party certification organization.~~

Substantiation: While I agree that all power sources shall be tested no matter the power source. It is not necessary that an independent third party organization be involved. If the manufacturer tests and certifies the unit in cooperation with the power source and the test is valid - then the customer is protected as they would be with the entire ambulance.

Committee Meeting Action: Reject

Committee Statement: Committee feels it is important to provide third party certification to ensure generator capacity.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1091 Log #588 **Final Action: Accept in Principle**
 (10.5.1)

Submitter: Joshua Finke, Wisconsin State EMS**Recommendation:** Currently the document reads:

~~"...the ambulance shall be equipped with a stability control system the system shall have at a minimum a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer and individual wheel brake controls:~~

~~5.10.2 The vehicle shall be governed to limit the top speed to 60 MPH (97 km/h):~~

Consider inserting:

~~"...the ambulance shall be equipped with a vehicle stabilization system (such as the one you had referenced) change the top speed to 70 MPH.~~

Substantiation: The State of Wisconsin Emergency Medical Service Administration and Management committee took a moment to review the ambulance standard proposed in NFPA 1917. First we would like to commend you on this draft of the standard. We felt it was a well written document that had many good points and covered all necessary aspects of safety and functionality for ambulances. There was one concern that was brought forward by several members of the committee and the general audience at last weeks' meeting. The standard in question was 5.10.1 and 5.10.2 which refers to the allowed speed of ambulances. The committee felt that the governed speed of 72 MPH is a number that is both safe and allows for timely transport of patients. The standard of 60 MPH for ambulances not equipped with vehicles stability systems was felt to be a bit restrictive. As fire apparatus are allowed to travel at a speed of 67 MPH there was a question as to how the 60 MPH number was developed and what the research behind it was. There was also considerable discussion on the fact that limiting the top speed of an ambulance to 60 MPH may actually cause a traffic hazard on interstates where traffic is flowing at 70-75 MPH. We would like you to reconsider striking the entire section involved in 5.10.1 and 5.10.2 or modify that section to allow a greater speed.

Thank you for your time and consideration on this matter, feel free to contact me via email at jfinke@townoftribmountain.org

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1092 Log #163 **Final Action: Reject**
 (11.6.4)

Submitter: Timothy J. Crowley II, Crowley II Consulting, LLC

Recommendation: I am proposing a new section added to include the use of a mechanical CPR device. This will be a new section added on after oxygen and suction requirements. The heading should read as follows:

"6.4 Mechanical CPR Device" Following this heading should be the requirements and features of the device.

Substantiation: The purpose of my proposal is to add an additional factor of safety for personnel while transporting a critical patient to the hospital. My belief is that we have the framework in place with this draft document to initiate safe seating for attendants in many situations. CPR is one of those special situations that should be addressed. If mechanical CPR is in place as a standard, the personnel will be able to use the belt to avoid injury or death.

Committee Meeting Action: Reject

Committee Statement: Minimum Standard. Purchaser can specify if desired.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1093 Log #382 **Final Action: Reject**
(A.1.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Revise text to read as follows:

It is not intended that this standard be applied retroactively to existing and remounted ambulances. However, if major renovations are made to an existing ambulance, it is suggested that the ambulance be brought into line with this standard as closely as possible.

Substantiation: Include remounted. Lack of feasibility data to support proposed standard.

Committee Meeting Action: Reject

Committee Statement: Committee does not wish to exclude this standard from older vehicles whether remounts or not.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1094 Log #561 **Final Action: Reject**
(A.1.4)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Revise text to read as follows:

It is not intended that this standard be applied retroactively to existing and remounted ambulances. However, if major renovations are made to an existing ambulance, it is suggested that the ambulance be brought into line with this standard as closely as possible.

Substantiation: Include remounted. Lack of feasibility data to support proposed standard.

Committee Meeting Action: Reject

Committee Statement: Committee does not wish to exclude this standard from older vehicles whether remounts or not.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1095 Log #1672 **Final Action: Reject**
(A.1.6)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete all units of conversion that are not for units specified in this standard. Add any units that are used in the standard and not currently in A.1.6.

Substantiation: The purpose of A.1.6 is to provide accurate units of conversion for values specified in the standard. It is not just a general conversion table.

Committee Meeting Action: Reject

Committee Statement: Section is for reference only.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1096 Log #38 **Final Action: Reject**
(A.2.3.17)

Submitter: Philip Bonaiuto, Mass Dept. of Public Health

Recommendation: Revise text in Annex A as follows:

A.2.3.17 Use of the “Star of Life” symbol must be in accordance with the purpose and use criteria set forth in published guidelines by the National Highway Traffic Safety Administration, an operating administration of the U.S. Department of Transportation.

Reflective Emblems and Markings.

The material for the emblems and markings shall be applied using reflective material that has a coefficient of retroreflection measured in accordance with ASTM E 810 of 100 for White and 10 for Blue using 4° entrance angle and a 0.2° observation angle. The reflective color used shall be blue (color a) and white (color i) when applicable. The Blue in American National Standard Z535.1, Safety Color Code. They shall comply with the tolerances expressed in terms of Munsell hue, value (lightness), and chroma (saturation). The emblems and markings shall be of the type, size, color, and location as follows:

A. Front markings

1. The word “AMBULANCE,” mirror imaged, shall be in block, blue, die cut style letters, not less than 4 in. high, centered above the grille, on the orange or white background. The placement of the word ambulance on the curved surface of the hood or on a flat plastic type bugscreen is permitted.

2. A “Star of Life” in 3, blue, die cut style, with a white border; shall be located both to the right and left of the word “AMBULANCE.”

B. Side and rear markings

1. The word “AMBULANCE” shall be in block, blue, die cut style letters of not less than 6 in. in height, centered, with a white border, alongside or under the “Star of Life” on each side and rear of the vehicle body.

2. A “Star of Life,” not less than 16 in. in blue, die cut style, with a white border, on the right and left side panels. A “Star of Life” emblem shall be provided on each rear door.

C. Top markings

1. A “Star of Life,” of not less than 32 in. in blue, die cut style (may be without the white Staff of Aesculapius), shall be provided on the ambulance rooftop.

Substantiation: The Ambulance Regulation Program Staff felt the additional wording was needed to define the use of the Stars of Life as an important symbol to distinguish this vehicle as an Ambulance.

Committee Meeting Action: Reject

Committee Statement: This standard has no authority over the star of life program. Purchaser can refer to the appropriate documentation for this information.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1097 Log #383 **Final Action: Reject**
(A.3.2.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.~~

Substantiation: The proposed standard is not relevant to document or automotive ambulance.

Committee Meeting Action: Reject

Committee Statement: This definition is an official NFPA definition that appears in all published documents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1098 Log #560 **Final Action: Reject**
(A.3.2.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.
Recommendation: Delete the following text:

Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

Substantiation: The proposed standard is not relevant to document or automotive ambulance.

Committee Meeting Action: Reject

Committee Statement: This definition is an official NFPA definition that appears in all published documents.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

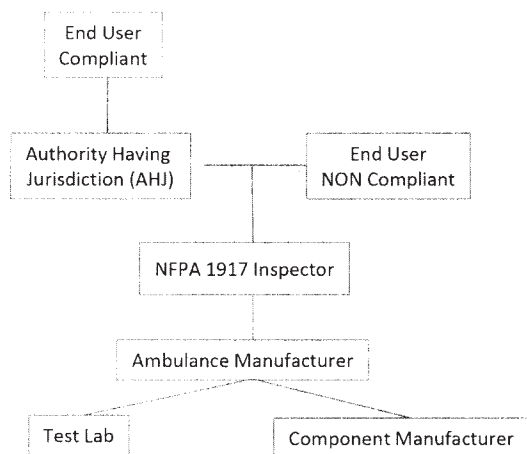
MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1099 Log #470 **Final Action: Reject**
(A.3.2.2)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Add new text to read as follows:

A.3.2.2 Authority Having Jurisdiction (AHJ).



Substantiation: This would clarify where the AHJ is and where end users, manufacturers, inspection bodies, and test labs fall.

Committee Meeting Action: Reject

Committee Statement: Not necessary to the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1100 Log #384 **Final Action: Reject**
(A.3.2.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

GAWR (Gross Axle Weight Rating). It is a requirement of the National Highway Traffic Safety Administration (NHTSA) that the GAWR be posted in the vehicle on a permanently affixed label. The axle system includes, but is not limited to, the axle, tires, suspension, wheels, frame, brakes, and applied engine

torque.

Substantiation: Lack of existing data to support the proposed definition.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1101 Log #480 **Final Action: Accept**
(A.3.2.4)

Submitter: Andrew J. Alger, Progressive Engineering Inc.

Recommendation: Delete the following text:

Turning Clearance Radius. An aerial fire apparatus might have a larger overall clearance diameter if measured at the forwardmost point of the aerial device.

Substantiation: This states aerial fire apparatus and should be removed.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1102 Log #559 **Final Action: Reject**
(A.3.2.4)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

GAWR (Gross Axle Weight Rating). It is a requirement of the National Highway Traffic Safety Administration (NHTSA) that the GAWR be posted in the vehicle on a permanently affixed label. The axle system includes, but is not limited to, the axle, tires, suspension, wheels, frame, brakes, and applied engine torque.

Substantiation: Lack of existing data to support the proposed definition.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1103 Log #1673 **Final Action: Accept in Principle**
(A.3.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: In the annex for Contractor, change the words “fire apparatus” to “ambulance” in 2 places.

Delete the annex for the definition of turning radius.

Substantiation: This standard is for ambulances, not fire apparatus. The annex to turning radius talks about aerial fire apparatus which is not appropriate in this standard.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1101 (Log #480).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1104 Log #385 **Final Action: Reject**
(A.4.12.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

The interior of the ambulance patient compartment should be maintained at a minimum temperature of 50°F (10°C) when the ambulance is prepared for

immediate response. The purchaser should consider how this will be accomplished. If the ambulance will not be housed in a heated facility, then other means may be required to ensure that this requirement is met. This requirement does not apply to ambulances that are fully operational but being held in reserve or ambulances that are not fully operational. The ambulance and all systems, components and equipment shall be capable of being stored at 32°F to 95°F (0°C to 35°C) without damage or deterioration.

Substantiation: The proposed standard is an operational policy issue not a standard.

Committee Meeting Action: Reject

Committee Statement: This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1105 Log #558 **Final Action:** Reject
(A.4.12.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

The interior of the ambulance patient compartment should be maintained at a minimum temperature of 50°F (10°C) when the ambulance is prepared for immediate response. The purchaser should consider how this will be accomplished. If the ambulance will not be housed in a heated facility, then other means may be required to ensure that this requirement is met. This requirement does not apply to ambulances that are fully operational but being held in reserve or ambulances that are not fully operational. The ambulance and all systems, components and equipment shall be capable of being stored at 32°F to 95°F (0°C to 35°C) without damage or deterioration.

Substantiation: The proposed standard is an operational policy issue not a standard.

Committee Meeting Action: Reject

Committee Statement: This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1106 Log #386 **Final Action:** Reject
(A.4.13.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Although this standard recognizes the need for the ambulance to be able to accelerate to a high speed while traveling on public roads, caution should be taken with regard to how fast the ambulance can travel. Where the ambulance has to operate off paved roads, all-wheel drive, a two-speed rear axle, an auxiliary transmission, an automatic transmission, or any combination of these might enhance the ambulance off-road capability.

Substantiation: The proposed standard is not relevant for an automotive ambulance.

Committee Meeting Action: Reject

Committee Statement: This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1107 Log #557 **Final Action:** Reject
(A.4.13.4)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Although this standard recognizes the need for the ambulance to be able to accelerate to a high speed while traveling on public roads, caution should be taken with regard to how fast the ambulance can travel. Where the ambulance has to operate off paved roads, all-wheel drive, a two-speed rear axle, an auxiliary transmission, an automatic transmission, or any combination of these might enhance the ambulance off-road capability.

Substantiation: The proposed standard is not relevant for an automotive ambulance.

Committee Meeting Action: Reject

Committee Statement: This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1108 Log #387 **Final Action:** Reject
(A.4.16)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

It is important for the purchaser and the contractor to agree on the format in which the documentation is to be delivered. It is also important that the purchaser consider the long-term ramifications of changing media technology if electronic format is used for delivery of the documentation. Software and hardware will need to be maintained over the years to utilize electronic documentation.

Substantiation: The proposed standard is a business practice and policy not a standard for automotive ambulances.

Committee Meeting Action: Reject

Committee Statement: This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1109 Log #556 **Final Action:** Reject
(A.4.16)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

It is important for the purchaser and the contractor to agree on the format in which the documentation is to be delivered. It is also important that the purchaser consider the long-term ramifications of changing media technology if electronic format is used for delivery of the documentation. Software and hardware will need to be maintained over the years to utilize electronic documentation.

Substantiation: The proposed standard is a business practice and policy not a standard for automotive ambulances.

Committee Meeting Action: Reject

Committee Statement: This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1110 Log #388 **Final Action: Reject**
(A.4.17.3.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

The label shown in Figure 4.17.3.1 is a suggested format. Deviations in dimensions are acceptable.

Substantiation: The proposed standard references figure not present in document.

Committee Meeting Action: Reject

Committee Statement: Figure 4.17.3.1 is present in the document. Submitter is mistaken.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1111 Log #555 **Final Action: Reject**
(A.4.17.3.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

The label shown in Figure 4.17.3.1 is a suggested format. Deviations in dimensions are acceptable.

Substantiation: The proposed standard references figure not present in document.

Committee Meeting Action: Reject

Committee Statement: Figure 4.17.3.1 is present in the document. Submitter is mistaken

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1112 Log #389 **Final Action: Reject**
(A.4.17.4.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

The form shown in Figure 4.17.4.1 is a suggested format. Deviations in dimensions are acceptable.

Substantiation: The proposed standard references figure not present in document.

Committee Meeting Action: Reject

Committee Statement: Figure 4.17.3.1 is present in the document. Submitter is mistaken.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1113 Log #554 **Final Action: Reject**
(A.4.17.4.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

The form shown in Figure 4.17.4.1 is a suggested format. Deviations in dimensions are acceptable.

Substantiation: The proposed standard references figure not present in document.

Committee Meeting Action: Reject

Committee Statement: Figure 4.17.3.1 is present in the document. Submitter is mistaken.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1114 Log #390 **Final Action: Accept in Principle**
(A.5.1.4.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

It is important for apparatus drivers to understand the height, length, and weight of the vehicle compared to their personally owned vehicles. It is also important that this information be accurate. Because the height of the apparatus could change PLEASE ADD FIGURE FROM 1906 DRAFT 1906:A.5.1.5.1 after delivery, depending on what equipment might be added, the department must note such changes on the plate. Suggested wording for the plate is shown in Figure A.5.1.4.2.

Substantiation: The proposed standard reference figure not present in document. Placed in document and highlighted is statement "PLEASE ADD FIGURE FROM 1906 DRAFT 1906:A.5.1.5.1." Appropriate terminology for an automotive ambulance is not "apparatus."

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1116 (Log #1674).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1115 Log #553 **Final Action: Accept in Principle**
(A.5.1.4.2)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

It is important for apparatus drivers to understand the height, length, and weight of the vehicle compared to their personally owned vehicles. It is also important that this information be accurate. Because the height of the apparatus could change PLEASE ADD FIGURE FROM 1906 DRAFT 1906:A.5.1.5.1 after delivery, depending on what equipment might be added, the department must note such changes on the plate. Suggested wording for the plate is shown in Figure A.5.1.4.2.

Substantiation: The proposed standard reference figure not present in document. Placed in document and highlighted is statement "PLEASE ADD FIGURE FROM 1906 DRAFT 1906:A.5.1.5.1." Appropriate terminology for an automotive ambulance is not "apparatus."

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1116 (Log #1674).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1116 Log #1674 **Final Action: Accept**
(A.5.1.4.2)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Revise A.5.1.4.2 to read as follows:

A.5.1.4.2 It is important for ambulance apparatus drivers to understand the height, length, and weight of the vehicle compared to their personally owned vehicles. It is also important that this information be accurate. Because the height of the apparatus could change after delivery If anything is added above the roof line height as delivered, depending on what equipment might be added, the department must note such changes on the plate should be changed to reflect the new height. Suggested wording for the plate is shown in Figure A.5.1.4.2.

Substantiation: This wording was lifted from NFPA 1901 and needs editing for this standard. The requirement does not require length to be on the plate.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1117 Log #391 **Final Action: Reject**
(A.5.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Weight Distribution Measurement and Calculation Methods Payload Determination~~

~~Subtract the total curb weight of the completed vehicle from the GVWR. Any permanently attached, optional items of equipment specified by the customer are to be included in the curb weight of the completed vehicle. Any other items of optional equipment (i.e., not permanently attached and/or removable) are to be included in the payload requirement. Delete this section in its entirety.~~

Substantiation: The proposed standard lacks data to support the standard.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1118 Log #552 **Final Action: Reject**
(A.5.2)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~Weight Distribution Measurement and Calculation Methods Payload Determination~~

~~Subtract the total curb weight of the completed vehicle from the GVWR. Any permanently attached, optional items of equipment specified by the customer are to be included in the curb weight of the completed vehicle. Any other items of optional equipment (i.e., not permanently attached and/or removable) are to be included in the payload requirement. Delete this section in its entirety.~~

Substantiation: The proposed standard lacks data to support the standard.

Committee Meeting Action: Reject

Committee Statement: The submitter provided no substantiation.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1119 Log #1676 **Final Action: Accept in Principle**
(A.5.7.3)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Delete the first sentence of A.5.7.3.

Substantiation: The sentence is not applicable to ambulances.

Committee Meeting Action: Accept in Principle

Committee Statement: Addressed in 1917-1120 (Log #1675).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1120 Log #1675 **Final Action: Accept**
(A.5.7.3, A.6.2.9, A.7.8, A.7.9.1, A.7.9.12, A.7.9.13, Figure A.7.9.13(A), Figure A.7.9.13(B) and A.8.2.2.1)

Submitter: Carl E. Peterson, Hingham, MA

Recommendation: Change the word "apparatus" to "ambulance" in A.5.7.3, A.6.2.9, A.7.8, A.7.9.1, A.7.9.12, A.7.9.13, Figure A.7.9.13(A), Figure A.7.9.13(B), and A.8.2.2.1.

Substantiation: These are needed editorial corrections.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1121 Log #392 **Final Action: Reject**
(A.5.8.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~The angle of approach or departure affects the road clearance of the vehicle going over short steep grades such as would be found in a driveway entrance, crossing a high crowned road at a right angle, or off-road service. Too low an angle of approach or departure will result in the vehicle scraping the ground. Figure A.5.8.1 shows the method of determining the angle of departure. The angle of approach (front of vehicle) is measured in the same fashion.~~

Substantiation: The standard should provide picture of all types of automotive ambulances to provide measurements of appropriate clearing and angles.

Committee Meeting Action: Reject

Committee Statement: Approach and departure angles are common vehicle measurements. This section is provided for reference only. Further pictures or explanation are not necessary.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1122 Log #551 **Final Action: Reject**
(A.5.8.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~The angle of approach or departure affects the road clearance of the vehicle going over short steep grades such as would be found in a driveway entrance, crossing a high crowned road at a right angle, or off-road service. Too low an angle of approach or departure will result in the vehicle scraping the ground. Figure A.5.8.1 shows the method of determining the angle of departure. The angle of approach (front of vehicle) is measured in the same fashion.~~

Substantiation: The standard should provide picture of all types of automotive ambulances to provide measurements of appropriate clearing and angles.

Committee Meeting Action: Reject

Committee Statement: Approach and departure angles are common vehicle measurements. This section is provided for reference only. Further pictures or explanation are not necessary.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1123 Log #393 **Final Action: Accept in Principle**
(A.5.10)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Electronic Stability Control (ESC) uses a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls in conjunction with the antilock brake system (ABS). The system tracks the direction that the driver intends to steer and uses brake application at individual wheels to help straighten out the vehicle. While the design and features of the vehicle are important to safe driving, the most important aspect of crash prevention is the skill and experience of the operator. The operator's attitude, training, experience, qualifications, and the application of those qualities are the most important elements in crash prevention. The operator must ensure that the physical limits of the vehicle are not exceeded. Driver skill is developed only through training and practice.~~

Substantiation: The proposed standard lacks data to support the standard. Suggests driver training is most important element of stability control.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1124 Log #550 **Final Action: Accept in Principle**
(A.5.10)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Electronic Stability Control (ESC) uses a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls in conjunction with the antilock brake system (ABS). The system tracks the direction that the driver intends to steer and uses brake application at individual wheels to help straighten out the vehicle. While the design and features of the vehicle are important to safe driving, the most important aspect of crash prevention is the skill and experience of the operator. The operator's attitude, training, experience, qualifications, and the application of those qualities are the most important elements in crash prevention. The operator must ensure that the physical limits of the vehicle are not exceeded. Driver skill is developed only through training and practice.

Substantiation: The proposed standard lacks data to support the standard. Suggests driver training is most important element of stability control.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-399 (Log #CP8).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1125 Log #394 **Final Action: Reject**
(A.5.11.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

The purchaser may wish to specify front and/or rear tow hooks or tow eyes be attached to the frame structure to allow towing (not lifting) of the ambulance without damage.

Substantiation: The proposed standard lacks data and significant evidence to implement. Follow current manufacturer recommendation.

Committee Meeting Action: Reject

Committee Statement: This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1126 Log #549 **Final Action: Reject**
(A.5.11.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

The purchaser may wish to specify front and/or rear tow hooks or tow eyes be attached to the frame structure to allow towing (not lifting) of the ambulance without damage.

Substantiation: The proposed standard lacks data and significant evidence to implement. Follow current manufacturer recommendation.

Committee Meeting Action: Reject

Committee Statement: This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1127 Log #395 **Final Action: Reject**
(A.6.17)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

MEASURING GUIDELINES: CABINETS & COMPARTMENTS [Consider making this a separate annex. The amount of info and level of detail would be best suited as an annex]

Cabinet Depth: The dimension from the cabinet inside back wall to the outside cabinet face.

Compartment Depth: The dimension from the compartment inside back wall to the outside compartment face.

Door OD: The door overall outside thickness (dimension).

Depth ID: The actual interior depth either measured or figured by subtracting the Door OD from the cabinet or compartment measured depth.

Height ID: The dimension from the interior bottom surface to the interior surface of the cabinet or compartment top.

Width ID: The dimension from one interior surface to the next interior surface of the cabinet or compartment.

Sliding Window Track: The track used for sliding cabinet windows.

Sliding Cabinet Windows: The sliding doors used on interior cabinets.

Substantiation: The proposed standard lacks data and significant evidence to implement. Follow current manufacturer recommendation.

Committee Meeting Action: Reject

Committee Statement: Committee believes that this is good information for the annex.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1128 Log #548 **Final Action: Reject**
(A.6.17)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

MEASURING GUIDELINES: CABINETS & COMPARTMENTS [Consider making this a separate annex. The amount of info and level of detail would be best suited as an annex]

Cabinet Depth: The dimension from the cabinet inside back wall to the outside cabinet face.

Compartment Depth: The dimension from the compartment inside back wall to the outside compartment face.

Door OD: The door overall outside thickness (dimension).

Depth ID: The actual interior depth either measured or figured by subtracting the Door OD from the cabinet or compartment measured depth.

Height ID: The dimension from the interior bottom surface to the interior surface of the cabinet or compartment top.

Width ID: The dimension from one interior surface to the next interior surface of the cabinet or compartment.

Sliding Window Track: The track used for sliding cabinet windows.

Sliding Cabinet Windows: The sliding doors used on interior cabinets.

Substantiation: The proposed standard lacks data and significant evidence to implement. Follow current manufacturer recommendation.

Committee Meeting Action: Reject

Committee Statement: Committee believes that this is good information for the annex.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1129 Log #396 **Final Action: Reject**
(A.6.24.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

It is not recommended that SCBA packs be stored in the patient compartment because of the risk of contamination. If the purchaser does specify SCBA storage in seat backs, then they should meet the requirements found in NFPA-1901.

Substantiation: The proposed standard is specific to the purchaser.

Committee Meeting Action: Reject

Committee Statement: This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.

Number Eligible to Vote: 32**Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1130 Log #547 **Final Action: Reject**
(A.6.24.2)

Submitter: Ronald W. Thackery, American Medical Response, Inc.**Recommendation:** Delete the following text:

It is not recommended that SCBA packs be stored in the patient compartment because of the risk of contamination. If the purchaser does specify SCBA storage in seat backs, then they should meet the requirements found in NFPA 1901.

Substantiation: The proposed standard is specific to the purchaser.**Committee Meeting Action: Reject****Committee Statement:** This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1131 Log #397 **Final Action: Reject**
(A.6.24.3.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Purchasers may wish to consider specifying seat belt colors such as bright red or bright orange.

Bright belt colors are easier to see on drive-cam videos or by observation through the window when enforcing seat belt use compliance. FMVSS 210-S4.3.1.1 requires that the lap portion of the belt in any Designated Seating Position does not constrain the occupant high across the belly. FMVSS 210-S5.1 requires that seat belt anchorages for side facing seatbelt assembly shall withstand a minimum of 1134 kg (2,500 lbs.) force.

Substantiation: The proposed standard increases the cost of the automotive ambulance design with any significant benefit.**Committee Meeting Action: Reject****Committee Statement:** This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1132 Log #546 **Final Action: Reject**
(A.6.24.3.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.**Recommendation:** Delete the following text:

Purchasers may wish to consider specifying seat belt colors such as bright red or bright orange.

Bright belt colors are easier to see on drive-cam videos or by observation through the window when enforcing seat belt use compliance. FMVSS 210-S4.3.1.1 requires that the lap portion of the belt in any Designated Seating Position does not constrain the occupant high across the belly. FMVSS 210-S5.1 requires that seat belt anchorages for side facing seatbelt assembly shall withstand a minimum of 1134 kg (2,500 lbs.) force.

Substantiation: The proposed standard increases the cost of the automotive ambulance design with any significant benefit.**Committee Meeting Action: Reject****Committee Statement:** This section is in the annex and thus is not part of the standard. This text is provided because the committee feels it is good information for a purchaser to consider.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1133 Log #398 **Final Action: Reject**
(A.6.29)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

The purchaser should specify whether the striping required under this standard will be provided by the manufacturer on delivery of the apparatus or will be installed by the purchaser or its designee following delivery. In any event, the required striping must be installed before the unit is placed in emergency service. Delete this section in its entirety.

Substantiation: The proposed standard is a business policy and practice not a standard. Purchaser specific to their preference.**Committee Meeting Action: Reject****Committee Statement:** No relevant substantiation.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1134 Log #542 **Final Action: Reject**
(A.6.29)

Submitter: Ronald W. Thackery, American Medical Response, Inc.**Recommendation:** Delete the following text:

The purchaser should specify whether the striping required under this standard will be provided by the manufacturer on delivery of the apparatus or will be installed by the purchaser or its designee following delivery. In any event, the required striping must be installed before the unit is placed in emergency service. Delete this section in its entirety.

Substantiation: The proposed standard is a business policy and practice not a standard. Purchaser specific to their preference.**Committee Meeting Action: Reject****Committee Statement:** No relevant substantiation.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1135 Log #399 **Final Action: Reject**
(A.7.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

This chapter defines the requirements for alternators, batteries, load management, and instrumentation to detect incipient electrical system failure. The intent is to require an electrical system that will operate the ambulance using power supplied by the alternator, shed nonessential electrical loads where necessary, and provide early warning of electrical failure in time to permit corrective action.

Substantiation: The proposed standard lacks data on how to accomplish appropriately.**Committee Meeting Action: Reject****Committee Statement:** The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.**Number Eligible to Vote: 32****Ballot Results:** Affirmative: 25 Negative: 2**Ballot Not Returned:** 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.**Explanation of Negative:**

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1136 Log #541 **Final Action: Reject**
(A.7.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~This chapter defines the requirements for alternators, batteries, load management, and instrumentation to detect incipient electrical system failure. The intent is to require an electrical system that will operate the ambulance using power supplied by the alternator, shed nonessential electrical loads where necessary, and provide early warning of electrical failure in time to permit corrective action.~~

Substantiation: The proposed standard lacks data on how to accomplish appropriately.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1137 Log #400 **Final Action: Reject**
(A.7.4.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~The unexpected shutdown of an ambulance during a response can place patients in mortal danger and seriously affect the life-saving ability of the crew. With computer-controlled engines and transmissions as well as other controls, an electrical system failure could result in an immediate and total shutdown of the ambulance. The low voltage monitoring system is intended to provide an early warning of an impending electrical failure and provide enough time to permit operator intervention.~~

Substantiation: The proposed standard is redundant. This type of electric system monitor currently exists; no need for standard.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1138 Log #540 **Final Action: Reject**
(A.7.4.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~The unexpected shutdown of an ambulance during a response can place patients in mortal danger and seriously affect the life-saving ability of the crew. With computer-controlled engines and transmissions as well as other controls, an electrical system failure could result in an immediate and total shutdown of the ambulance. The low voltage monitoring system is intended to provide an early warning of an impending electrical failure and provide enough time to permit operator intervention.~~

Substantiation: The proposed standard is redundant. This type of electric system monitor currently exists; no need for standard.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1139 Log #401 **Final Action: Reject**
(A.7.5.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Electrical loads on ambulances frequently exceed the alternator capacity. Exceeding alternator capacity will result in the deep discharge of the ambulance batteries. Automatic load management is intended to protect the batteries and electrical system from needless damage while maintaining the operation of essential devices. It is important that the priority of all managed loads be specified by the purchaser so that, as electrical loads are disconnected from the ambulance's electrical systems, they are shed in an order least likely to affect emergency operations. Optical warning devices in excess of the minimum required in this standard can and should be load managed.~~

Substantiation: The proposed document lack source for exceeding alternator capacity.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1140 Log #539 **Final Action: Reject**
(A.7.5.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~Electrical loads on ambulances frequently exceed the alternator capacity. Exceeding alternator capacity will result in the deep discharge of the ambulance batteries. Automatic load management is intended to protect the batteries and electrical system from needless damage while maintaining the operation of essential devices. It is important that the priority of all managed loads be specified by the purchaser so that, as electrical loads are disconnected from the ambulance's electrical systems, they are shed in an order least likely to affect emergency operations. Optical warning devices in excess of the minimum required in this standard can and should be load managed.~~

Substantiation: The proposed document lack source for exceeding alternator capacity.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1141 Log #715 **Final Action: Reject**
(A.7.6.5)

Submitter: Jerry Fink, Life Line Emergency Vehicles

Recommendation: Calls for GFI on shoreline origination point.

Substantiation: Ambulance manufacturer cannot control what is in the circuitry at the shore line origination point. This an END USER responsibility.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1142 Log #402 **Final Action: Reject**
(A.7.6.7)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Revise text to read as follows:

The purchaser shall ~~might want to add~~ an illuminated “Module Disconnect” switch which could control all electrical loads for the module. The illuminated switch could control a solenoid. If the switch is specified it should be located in the driver’s compartment, be legibly marked, illuminated when “ON,” and rated to carry at least 125 percent of the circuit’s maximum current, unless it operates a solenoid. If the switch operates a solenoid then the solenoid should be rated for 125 percent of the circuit’s maximum current. The module disconnect switch or device shall be different in feel from other switches, or be physically isolated from them.

Substantiation: A modular disconnect must be a standard design element.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1143 Log #538 **Final Action: Reject**
(A.7.6.7)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Revise text to read as follows:

The purchaser shall ~~might want to add~~ an illuminated “Module Disconnect” switch which could control all electrical loads for the module. The illuminated switch could control a solenoid. If the switch is specified it should be located in the driver’s compartment, be legibly marked, illuminated when “ON,” and rated to carry at least 125 percent of the circuit’s maximum current, unless it operates a solenoid. If the switch operates a solenoid then the solenoid should be rated for 125 percent of the circuit’s maximum current. The module disconnect switch or device shall be different in feel from other switches, or be physically isolated from them.

Substantiation: A modular disconnect must be a standard design element.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1144 Log #403 **Final Action: Reject**
(A.7.8)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

SAE J551/1 provides test procedures and recommended levels to assist engineers in the control of broadband electromagnetic radiation and in the control of radio interference resulting from equipment installed on the ambulance. Adherence to the recommended levels will minimize the degradation effects of potential interference sources in the communication equipment or other devices susceptible to electromagnetic interference. Procedures are included to measure the radiation from a single device or the entire ambulance. Compliance could be determined through actual tests on the completed ambulance or predictions based on tests previously conducted on similarly equipped apparatus. If compliance certification is required, it should be so indicated in the ambulance specifications.

Substantiation: The proposed standard is irrelevant and lacks feasibility.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1145 Log #537 **Final Action: Reject**
(A.7.8)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

SAE J551/1 provides test procedures and recommended levels to assist engineers in the control of broadband electromagnetic radiation and in the control of radio interference resulting from equipment installed on the ambulance. Adherence to the recommended levels will minimize the degradation effects of potential interference sources in the communication equipment or other devices susceptible to electromagnetic interference. Procedures are included to measure the radiation from a single device or the entire ambulance. Compliance could be determined through actual tests on the completed ambulance or predictions based on tests previously conducted on similarly equipped apparatus. If compliance certification is required, it should be so indicated in the ambulance specifications.

Substantiation: The proposed standard is irrelevant and lacks feasibility.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1146 Log #1025 **Final Action: Reject**
(A.7.9)

Submitter: Jim Fingerhut, St. Charles County Ambulance District

Recommendation: None given.

Substantiation: This section is not specific to any one type of ambulance body style. There for the specification will not meet the standards they are trying to attain. The Section subjects Type III AD to the same standard as a Type II. This is not only, not practical, but will cause one to miss the objectives set by this section.

Committee Meeting Action: Reject

Committee Statement: The Annex item refers to the alternate lighting system which described upper and lower level warning.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1147 Log #404 **Final Action: Reject**
(A.7.9.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

The upper-level optical warning devices provide warning at a distance from the ambulance and the lower-level optical warning devices provide warning in close proximity to the apparatus. (See Figure A.7.9.1.)

Substantiation: The proposed standard references Figure A.7.9.1. Highlighted below figures statement reads “We need to change this figure to an ambulance.”

Automotive ambulance warning levels are referred to as “primary” and “secondary”

Committee Meeting Action: Reject

Committee Statement: The Annex item refers to the alternate lighting system which described upper and lower level warning.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1148 Log #536 **Final Action: Reject**
(A.7.9.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

The upper-level optical warning devices provide warning at a distance from the ambulance and the lower-level optical warning devices provide warning in close proximity to the apparatus. (See Figure A.7.9.1.)

Substantiation: The proposed standard references Figure A.7.9.1. Highlighted below figures statement reads “We need to change this figure to an ambulance.”

Automotive ambulance warning levels are referred to as “primary” and “secondary”

Committee Meeting Action: Reject

Committee Statement: The Annex item refers to the alternate lighting system which described upper and lower level warning.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1149 Log #405 **Final Action: Reject**
(A.7.9.7.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Under typical conditions, the specified optical warning system provides effective, balanced warning. In some situations, however, the safety of the ambulance can be increased by turning off some warning devices. For example, if other vehicles need to pass within close proximity to the parked ambulance, the possibility of distracting other drivers can be reduced if the headlights and lower-level warning lights are turned off. In snow or fog, it might be desirable to turn off forward-facing strobes or oscillating lights to reduce visual disorientation of the ambulance driver. The intent of the warning light system is to provide full coverage signals through the operation of a single master switch when the ambulance is either responding or blocking the right-of-way. There is no intent to prevent the use of lower levels of warning when the ambulance driver believes such reductions are appropriate, given the vehicle's mission, the weather, or other operational factors. Additional switches downstream of the master switch can be specified by the purchaser to control individual devices or groups of devices. Purchasers might want to specify traffic flow-type lighting such as amber directional indicators for use in alerting approaching motorists of blocked or partially blocked highways.

Substantiation: The proposed standard is an operational policy issue not a standard.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1150 Log #535 **Final Action: Reject**
(A.7.9.7.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Under typical conditions, the specified optical warning system provides effective, balanced warning. In some situations, however, the safety of the ambulance can be increased by turning off some warning devices. For example, if other vehicles need to pass within close proximity to the parked ambulance, the possibility of distracting other drivers can be reduced if the headlights and lower-level warning lights are turned off. In snow or fog, it might be desirable to turn off forward-facing strobes or oscillating lights to reduce visual disorientation of the ambulance driver.

The intent of the warning light system is to provide full coverage signals through the operation of a single master switch when the ambulance is either responding or blocking the right-of-way. There is no intent to prevent the use of lower levels of warning when the ambulance driver believes such reductions are appropriate, given the vehicle's mission, the weather, or other operational factors. Additional switches downstream of the master switch can be specified by the purchaser to control individual devices or groups of devices. Purchasers might want to specify traffic flow-type lighting such as amber

directional indicators for use in alerting approaching motorists of blocked or partially blocked highways.

Substantiation: The proposed standard is an operational policy issue not a standard.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1151 Log #1706 **Final Action: Reject**
(A.7.9.12)

Submitter: Richard L. Dean, Mecklenburg EMS Agency

Recommendation: Revise text to read as follows:

Flashing high beam headlights may be the most effective warning system on the vehicle and should **not** be prohibited in night time operation.

Substantiation: None given.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1152 Log #406 **Final Action: Reject**
(A.7.9.13)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

The minimum optical warning system should require no more than an average of 40 A for the operation of the upper-level and lower-level devices in the blocking mode. On ambulance whose length requires midship lights, no more than 5 A of additional current should be required for the operation of each set of midship lights. Optical warning systems drawing more than 40 A might necessitate modification of the electrical system specified in Section 7.3 in order to supply the additional power required. See Figure A.7.9.13(a) and Figure A.7.9.13(b) for illustrations of an optical warning system on a large fire apparatus. Delete this section in its entirety.

Substantiation: The proposed standard lacks data to support the standard.

Increases cost of automotive ambulance design. Figure A.7.9.13(a) and Figure A.7.9.13(b) are large fire apparatus and highlighted statement under figure states “Larry please change diagrams to ambulances.” Standard is for automotive ambulance not large fire apparatus.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1153 Log #161 **Final Action: Accept**
(Figure A.7.9.13)

Submitter: Timothy J. Crowley II, Crowley II Consulting, LLC
Recommendation: Delete fine apparatus picture and replace with ambulance diagram.
Substantiation: Specifically, this document is for ambulance bodies. In keeping with less confusion, a diagram of an ambulance would be more appropriate.
Committee Meeting Action: Accept
Number Eligible to Vote: 32
Ballot Results: Affirmative: 25 Negative: 2
Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.
Explanation of Negative:
MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1154 Log #407 **Final Action: Reject**
(A.7.9.14)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:
The minimum optical warning system should require no more than an average of 35 A for the operation of the devices in the blocking mode.
Substantiation: The proposed standard lacks data to support the standard. Increases cost of automotive ambulance design.
Committee Meeting Action: Reject
Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.
Number Eligible to Vote: 32
Ballot Results: Affirmative: 25 Negative: 2
Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.
Explanation of Negative:
MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1155 Log #533 **Final Action: Reject**
(A.7.9.14)

Submitter: Ronald W. Thackery, American Medical Response, Inc.
Recommendation: Delete the following text:
The minimum optical warning system should require no more than an average of 35 A for the operation of the devices in the blocking mode.
Substantiation: The proposed standard lacks data to support the standard. Increases cost of automotive ambulance design.
Committee Meeting Action: Reject
Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.
Number Eligible to Vote: 32
Ballot Results: Affirmative: 25 Negative: 2
Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.
Explanation of Negative:
MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1156 Log #408 **Final Action: Reject**
(A.7.9.16)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:
In a few cases, a manufacturer might wish to type certify by actual measurement of the optical warning system on an ambulance. Certification of the actual measurement of the performance of the optical warning system is made with each optical source either mounted on the ambulance or on a frame duplicating the mounting of the device on the ambulance. The performance of the system can be directly measured along the perimeter of a circle with a 100-ft (30.5 m) radius from the geometric center of the ambulance. Each optical warning device used should be certified by its manufacturer as conforming to all the requirements of this standard pertaining to mechanical and environmental testing. Photometric testing of the system should be performed by qualified personnel in a laboratory for such optical measurements. The test voltages and other details should be as called for in this standard for the photometric testing of individual optical warning devices. The elevation of the photometer, however, could be set at the elevation that maximizes the

performance of the upper-level devices and at a second, different elevation that maximizes the performance of the lower-level devices. With the optical center of each device oriented as installed, the sum of the actual value of the optical power contributed by every optical source is then determined at each measurement point. The zone total is the sum of the optical power at the 19 measurement points in the zone. Measurements are made to determine all the optical requirements of this standard, including the optical power at each of the required measurement points, the zone totals at the horizontal plane passing through the optical center, and the zone totals at 5 degrees above and 5 degrees below the horizontal plane passing through the optical center. Any upper-level warning devices mounted above the maximum height specified by the manufacturer(s) should be tested to demonstrate that at 4 ft (1.2 m) above level ground and 100 ft (30.5 m) from the mounted device, the optical energy exceeds 50 percent of the minimum required at the horizontal plane passing through the optical center.
Substantiation: The proposed standard lacks data to support the standard. Increases cost of automotive ambulance design.

Committee Meeting Action: Reject
Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.
Number Eligible to Vote: 32
Ballot Results: Affirmative: 25 Negative: 2
Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.
Explanation of Negative:
MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1157 Log #532 **Final Action: Reject**
(A.7.9.16)

Submitter: Ronald W. Thackery, American Medical Response, Inc.
Recommendation: Delete the following text:
In a few cases, a manufacturer might wish to type certify by actual measurement of the optical warning system on an ambulance. Certification of the actual measurement of the performance of the optical warning system is made with each optical source either mounted on the ambulance or on a frame duplicating the mounting of the device on the ambulance. The performance of the system can be directly measured along the perimeter of a circle with a 100-ft (30.5 m) radius from the geometric center of the ambulance. Each optical warning device used should be certified by its manufacturer as conforming to all the requirements of this standard pertaining to mechanical and environmental testing. Photometric testing of the system should be performed by qualified personnel in a laboratory for such optical measurements. The test voltages and other details should be as called for in this standard for the photometric testing of individual optical warning devices. The elevation of the photometer, however, could be set at the elevation that maximizes the performance of the upper-level devices and at a second, different elevation that maximizes the performance of the lower-level devices. With the optical center of each device oriented as installed, the sum of the actual value of the optical power contributed by every optical source is then determined at each measurement point. The zone total is the sum of the optical power at the 19 measurement points in the zone. Measurements are made to determine all the optical requirements of this standard, including the optical power at each of the required measurement points, the zone totals at the horizontal plane passing through the optical center, and the zone totals at 5 degrees above and 5 degrees below the horizontal plane passing through the optical center. Any upper-level warning devices mounted above the maximum height specified by the manufacturer(s) should be tested to demonstrate that at 4 ft (1.2 m) above level ground and 100 ft (30.5 m) from the mounted device, the optical energy exceeds 50 percent of the minimum required at the horizontal plane passing through the optical center.
Substantiation: The proposed standard lacks data to support the standard. Increases cost of automotive ambulance design.

Committee Meeting Action: Reject
Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.
Number Eligible to Vote: 32
Ballot Results: Affirmative: 25 Negative: 2
Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.
Explanation of Negative:
MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1158 Log #534 **Final Action: Reject**
(A.7.9.24)

Submitter: Ronald W. Thackery, American Medical Response, Inc.
Recommendation: Delete the following text:

The minimum optical warning system should require no more than an average of 40 A for the operation of the upper-level and lower-level devices in the blocking mode. On ambulance whose length requires midship lights, no more than 5 A of additional current should be required for the operation of each set of midship lights. Optical warning systems drawing more than 40 A might necessitate modification of the electrical system specified in Section 7.3 in order to supply the additional power required. See Figure A.7.9.13(a) and Figure A.7.9.13(b) for illustrations of an optical warning system on a large fire apparatus. Delete this section in its entirety.

Substantiation: The proposed standard lacks data to support the standard. Increases cost of automotive ambulance design. Figure A.7.9.13(a) and Figure A.7.9.13(b) are large fire apparatus and highlighted statement under figure states “Larry please change diagrams to ambulances.” Standard is for automotive ambulance not large fire apparatus.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1159 Log #179 **Final Action: Accept**
(A.7.11.6.2.4.2)

Submitter: Steve Rowland, Weldon, a Division of Akron Brass

Recommendation: Revise text to read as follows:

A.7.11.6.2.4.2 The purchaser should consider light color temperatures when specifying interior lighting. Different temperature lights could effect the operation and diagnoses of patients. A temperature closer to daylight would give the best results, but might not be feasible with the available lights. A good range seems to be between 2500 and 4500 Kelvin, see Figure A.7.11.6.2.4.2 below:

A.7.11.6.2.4.2 The purchaser should be aware that, even if technically considered “white” through industry standard color tolerances, care should be taken to insure interior lighting fixtures, primarily patient dome lights, maintain a uniform color hue (measured by color temperature in degrees Kelvin), across all like installed light fixtures.

Experience indicates a color temperature nearest “daylight” (6,500° K) may be preferred, though commonly achievable only with LED or Fluorescent light sources. Lower cost incandescent and halogen patient dome lights typically fall within the “warmer” range of 2,500° K to 3,500° K. Care should be taken when selecting lighting fixtures to avoid wide variances in lighting temperature within the patient treatment area of the patient compartment.

Substantiation: The statement in A.7.11.6.2.4.2 conflicts within itself. It states that, “A temperature closer to daylight would give the best results...” and also that “A good range seems to be between 2500 and 4500 Kelvin”. Common sense leads us to agree with the daylight reference, but we contend that the later statement concerning “a good range” is arbitrary and is not substantiated. Further, the paragraph references a chart, “Figure A.7.11.6.2.4.2 Light Color Temperature Scale.”, which clearly shows the color temperature of “daylight” at 6,500°K.

We believe the purpose of the annex statement should be to alert the purchaser that there is a wide spectrum of “tints” or “hues” of white light, measured by a light photometer in degrees Kelvin, which LED dome lights may be supplied with and still be sold as “white” in compliance with industry standards. Care should be taken by the purchaser to insure the ambulance builder requires all patient dome lamps, within each particular ambulance, be of the same color. If a particular purchaser desires a “daylight” color of white (towards the blue spectrum) while another purchaser desires a “warmer” color of white (towards the yellow spectrum), that choice should be theirs to make.

A common illustration can be taken from any commercial office space with overhead fluorescent lighting. Because of the adaptability and compensation of the human eye, it is rare to notice any difficulty in discerning or distinguishing the colors on a photograph if the overhead fluorescent tubes are either all “daylight”, “bright white” or “warm white” in color. However, if the tubes are mixed throughout the ceiling – some warm, some daylight – one will see variances in perceived color on that same photograph depending on which color fixture they are positioned under.

Industry experience indicates Paramedics have been able to successfully establish a patient’s subcutaneous vascular structure or notice symptoms of cyanosis for years under not only warmer-colored incandescent and halogen lighting, but also cooler-colored fluorescent lighting and daylight-colored LED lighting.

Committee Meeting Action: Accept

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1160 Log #409 **Final Action: Accept in Principle**
(A.7.11.6.2.4.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

The purchaser should consider light color temperatures when specifying interior lighting. Different temperature lights could effect the operation and diagnoses of patients. A temperature closer to daylight would give the best results, but might not be feasible with the available lights. A good range seems to be between 2500 and 4500 Kelvin, see Figure A.7.11.6.2.4.2 below:

Substantiation: The proposed standard lacks data to support the standard. Increases cost of automotive ambulance design.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1159 (Log #179).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1161 Log #531 **Final Action: Accept in Principle**
(A.7.11.6.2.4.2)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

The purchaser should consider light color temperatures when specifying interior lighting. Different temperature lights could effect the operation and diagnoses of patients. A temperature closer to daylight would give the best results, but might not be feasible with the available lights. A good range seems to be between 2500 and 4500 Kelvin, see Figure A.7.11.6.2.4.2 below:

Substantiation: The proposed standard lacks data to support the standard. Increases cost of automotive ambulance design.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1159 (Log #179).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1162 Log #663 **Final Action: Accept in Principle**
(A.7.11.6.2.4.2)

Submitter: Fred Schimmel, SJC Industries Corporation

Recommendation: Add new text to read as follows:

A.7.11.6.2.4.2 The purchaser should consider light color temperatures when specifying interior lighting. Different temperature lights could affect the operation and diagnoses of patients. A temperature closer to daylight would give the best results; a good range between 4000 and 4500 Kelvin.

Substantiation: Currently lights are available to meet the above and the problem with such a broad range is trying to meet it.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1159 (Log #179).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1163 Log #1390
(A.7.11.6.2.4.2)

Final Action: Accept in Principle

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

The purchaser should consider light color temperatures when specifying interior lighting. Different temperature lights could effect the operation and diagnoses of patients. A temperature closer to daylight would give the best results, but might not be feasible with the available lights. A good range seems to be between 2500 and 4500 Kelvin.

Substantiation: It states for best results the color temp should be as close to daylight (6500 Kelvin) as possible, then identifies the range to be between 2500-4500 Kelvin. Our dome light is between 5500 and 7000 Kelvin. If daylight is best, the spec should allow for 6500 plus or minus 2000 Kelvin. In Berry and Kohn's operating room technique book the range is 3500 to 6700 Kelvin with the preferred level by most surgeons to be 5000 Kelvin.

Committee Meeting Action: Accept in Principle

Committee Statement: See committee action on Proposal 1917-1159 (Log #179).

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1164 Log #1391
(A.8.3.1)

Final Action: Reject

Submitter: Mark Spivey, Kinequip, Inc.

Recommendation: Revise text to read as follows:

Use of a ground rod on ambulance is not recommended. If one is used, the requirements of NFPA 70, Article 250, should be followed.

Substantiation: A ground rod would be considered an anchor and may not allow the vehicle to reach its 70 MPH passing speed requirement.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1165 Log #410 **Final Action: Reject**
(A.8.5.4.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

The 120°F (49°C) requirement is for air inlet temperature to the power source. The completed ambulance is required to operate at an ambient temperature of 110°F (43°C). This difference of only 10°F (6°C) is difficult to achieve due to heat produced by the ambulance. The installer should take this temperature into consideration in selecting a location for the power source. If the ambulance is intended to operate at high temperatures, the purchaser may want to specify a larger nameplate rating on the generator and derate it to allow for a higher temperature capability. Consult with the power source manufacturer for more information on extended temperature range operation. In the testing required in Chapter 9.9 the ambient and air inlet temperatures are recorded, giving a measure of the temperature difference in actual operation. The following factors could be relevant to power source testing, depending on the type of power source: (1) Sampling. The selection of test unit(s) should be representative of the construction and settings for units that will be supplied to the ambulance manufacturer. The standard does not require that all production units be tested; however, the power source manufacturer should test as needed to maintain confidence in its declaration of the continuous duty rating for all production.

(2) Clearances, cooling, and ventilation. Testing should be conducted at the worst-case clearance (usually minimum clearance or minimum compartment size) and worst-case ventilation conditions (minimum inlet/outlet dimensions and maximum inlet/outlet restrictions) specified in the literature. If not in the literature, the power source manufacturer's declaration should indicate the clearances, compartment size, and ventilation that are applicable to the declared continuous duty rating. (3) Test duration. "Continuous" ratings are usually established by tests run until thermal stabilization is achieved. A minimum test of 2 hours, matching the in-

ambulance test duration indicated in 9.9, is

recommended. (4) Air inlet temperature. Power sources should be tested in a chamber or room where the air temperature supplied to all inlet ducts (radiators, engine induction, windings, heat sinks, etc.), and the air surrounding the test unit, is maintained at 120°F (49°C).

(5) Barometric pressure. Pressure (air density) varies with changes in altitude and weather. Its effect is generally greatest on engines, where it affects combustion and cooling efficiency. There is a lesser effect on wound machines due to cooling only. To show compliance with the 2,000 ft (600 m) requirement, a test in a chamber simulating 2,000 ft (600 m) would be ideal, but it is not expected. Alternatively, connecting more or less than the rated load can be used to simulate/demonstrate that the engine is capable of the power required for rated output at 2,000 ft (600 m). (Several standards organizations, such as SAE and ISO, have standards that describe how to compute load/output correction factors for barometric pressure.) (6) Fuel temperature. Fuel supply for the test should be stabilized at 120°F (49°C) before testing.

Increases in fuel tank temperature that can occur as a result of fuel returned to the tank should be controlled so as to provide a result that is representative of expected fuel temperature conditions for the ambulance. (7) Intake and exhaust restrictions, accessories, hydraulic pumps, and reservoirs. Components and accessories that might reduce engine power available for electrical output or that consume electrical output from the power source should be installed and be of the type used for the model that will be ordered for ambulance use, or their effect should be separately determined and reflected in the certified output. (8) Break-in. Acceptance of a reduced output rating until completion of an in-use break-in period is

subject to the prior agreement of the ambulance manufacturer, who might request test evidence. When applicable, the reduced output amount and duration of the break-in period should be indicated in the power supply literature. (9) Voltage and frequency. Tests should be run while maintaining the ±10 percent voltage and ±3 Hz frequency required by 8.4.2.1. Furthermore, settings for voltage and frequency should be representative

of production units. (10) Engine speed and hydraulic flow/pressure. The engine speed and/or hydraulic flow and pressure ranges indicated in the power source's literature should be used to verify that the declared ratings are achievable. (11) Hydraulic fluid temperature. The entire hydraulic power supply system, including hydraulic fluid piping and reservoir, should be located within a test chamber where temperature is controlled to maintain 120°F (49°C). Hydraulic fluid reservoirs should be stabilized at the ambient air test temperature [120°F (49°C)] prior to the testing. (12) Component and material temperatures. Although not specified in the standard, when a power supply designed for light-duty use in open air is proposed for fixed ambulance use, the power source manufacturer should evaluate the components to determine whether they will operate within their rated or design temperature limits.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1166 Log #530 **Final Action: Reject**
(A.8.5.4.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

The 120°F (49°C) requirement is for air inlet temperature to the power source. The completed ambulance is required to operate at an ambient temperature of 110°F (43°C). This difference of only 10°F (6°C) is difficult to achieve due to heat produced by the ambulance. The installer should take this temperature into consideration in selecting a location for the power source. If the ambulance is intended to operate at high temperatures, the purchaser may want to specify a larger nameplate rating on the generator and derate it to allow for a higher temperature capability. Consult with the power source manufacturer for more information on extended temperature range operation. In the testing required in Chapter 9.9 the ambient and air inlet temperatures are recorded, giving a measure of the temperature difference in actual operation. The following factors could be relevant to power source testing, depending on the type of power source: (1) Sampling. The selection of test unit(s) should be representative of the construction and settings for units that will be supplied to the ambulance manufacturer. The standard does not require that all production units be tested; however, the power source manufacturer should test as needed to maintain confidence in its declaration of the continuous duty rating for all production.

(2) Clearances, cooling, and ventilation. Testing should be conducted at the worst-case clearance (usually minimum clearance or minimum compartment size) and worst-case ventilation conditions (minimum inlet/outlet dimensions and maximum inlet/outlet restrictions) specified in the literature. If not in the literature, the power-source manufacturer's declaration should indicate the clearances, compartment size, and ventilation that are applicable to the declared continuous-duty rating. (3) Test duration. "Continuous" ratings are usually established by tests run until thermal stabilization is achieved. A minimum test of 2 hours, matching the in-ambulance test duration indicated in 9.9, is recommended. (4) Air inlet temperature. Power sources should be tested in a chamber or room where the air temperature supplied to all inlet ducts (radiators, engine induction, windings, heat sinks, etc.), and the air surrounding the test unit, is maintained at 120°F (49°C). (5) Barometric pressure. Pressure (air density) varies with changes in altitude and weather. Its effect is generally greatest on engines, where it affects combustion and cooling efficiency. There is a lesser effect on wound machines due to cooling only. To show compliance with the 2,000 ft (600 m) requirement, a test in a chamber simulating 2,000 ft (600 m) would be ideal, but it is not expected. Alternatively, connecting more or less than the rated load can be used to simulate/demonstrate that the engine is capable of the power required for rated output at 2,000 ft (600 m). (Several standards organizations, such as SAE and ISO, have standards that describe how to compute load/output correction factors for barometric pressure.) (6) Fuel temperature. Fuel supply for the test should be stabilized at 120°F (49°C) before testing. Increases in fuel tank temperature that can occur as a result of fuel returned to the tank should be controlled so as to provide a result that is representative of expected fuel temperature conditions for the ambulance. (7) Intake and exhaust restrictions, accessories, hydraulic pumps, and reservoirs. Components and accessories that might reduce engine power available for electrical output or that consume electrical output from the power source should be installed and be of the type used for the model that will be ordered for ambulance use, or their effect should be separately determined and reflected in the certified output. (8) Break-in. Acceptance of a reduced output rating until completion of an in-use break-in period is subject to the prior agreement of the ambulance manufacturer, who might request test evidence. When applicable, the reduced output amount and duration of the break-in period should be indicated in the power supply literature. (9) Voltage and frequency. Tests should be run while maintaining the ± 10 percent voltage and ± 3 Hz frequency required by 8.4.2.1. Furthermore, settings for voltage and frequency should be representative of production units. (10) Engine speed and hydraulic flow/pressure. The engine speed and/or hydraulic flow and pressure ranges indicated in the power source's literature should be used to verify that the declared ratings are achievable. (11) Hydraulic fluid temperature. The entire hydraulic power supply system, including hydraulic fluid piping and reservoir, should be located within a test chamber where temperature is controlled to maintain 120°F (49°C). Hydraulic fluid reservoirs should be stabilized at the ambient air test temperature [120°F (49°C)] prior to the testing. (12) Component and material temperatures. Although not specified in the standard, when a power supply designed for light-duty use in open air is proposed for fixed ambulance use, the power source manufacturer should evaluate the components to determine whether they will operate within their rated or design temperature limits.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1167 Log #411 **Final Action: Reject**
(A.8.5.7.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

The instrumentation should be protected from vibration, which can lead to false readings.

Particular attention should be paid to reed-type frequency indicators. Digital electronic instrumentation should be selected that incorporates sample times and intervals that accurately report system performance under varying conditions

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1168 Log #529 **Final Action: Reject**
(A.8.5.7.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

The instrumentation should be protected from vibration, which can lead to false readings.

Particular attention should be paid to reed-type frequency indicators. Digital electronic instrumentation should be selected that incorporates sample times and intervals that accurately report system performance under varying conditions

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1169 Log #412 **Final Action: Reject**
(A.8.5.9)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

The indicator lights and interlocks specified in this section are minimums. Some manufacturers or users might choose to add additional indicator lights or interlocks. Delete this section in its entirety.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1170 Log #528 **Final Action: Reject**
(A.8.5.9)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: The indicator lights and interlocks specified in this section are minimums. Some manufacturers or users might choose to add additional indicator lights or interlocks. Delete this section in its entirety.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1171 Log #413 **Final Action: Reject**
(A.8.6.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

A PTO generator system typically consists of a propulsion engine, a controller to regulate the propulsion engine's speed (if required), an appropriate PTO arrangement, drivetrain components, a generator, and other miscellaneous parts. Where possible, the generator PTO system should be prevented from engaging if engine speed is above idle. PTO gear ratios and engine governor components should be selected and matched to provide an engine speed high enough to maintain rated performance of the alternator and air conditioning system (if provided). Engine speed should be high enough to maintain rated performance of the low voltage electrical system. Continuous excessive engine speed will result in premature generator drivetrain component failure and unnecessary fuel consumption. The purchaser should consider specifying a means to automatically disconnect the generator or reduce engine speed to idle in the event of engine overspeed.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1172 Log #527 **Final Action: Reject**
(A.8.6.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

A PTO generator system typically consists of a propulsion engine, a controller to regulate the propulsion engine's speed (if required), an appropriate PTO arrangement, drivetrain components, a generator, and other miscellaneous parts. Where possible, the generator PTO system should be prevented from engaging if engine speed is above idle. PTO gear ratios and engine governor components should be selected and matched to provide an engine speed high enough to maintain rated performance of the alternator and air conditioning system (if provided). Engine speed should be high enough to maintain rated performance of the low voltage electrical system. Continuous excessive engine speed will result in premature generator drivetrain component failure and unnecessary fuel consumption. The purchaser should consider specifying a means to automatically disconnect the generator or reduce engine speed to idle in the event of engine overspeed.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1173 Log #414 **Final Action: Reject**
(A.8.6.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

A hydraulic generator system generally consists of a variable displacement hydraulic pump deriving its power from the propulsion engine, a controller to regulate the hydraulic fluid flow rate, a hydraulic motor driving the generator, hydraulic fluid cooler, reservoir, and other miscellaneous parts. All hydraulic generator systems have a window of operation (speed range). When selecting the power output of the hydraulic generator system, its speed range should be compared to the operating window of the ambulance's engine and the PTO ratios available. By selecting the hydraulic generator system and PTO ratio to match the application, electrical power can be provided over a wide operating range. The selected PTO should have a gear ratio that will allow the widest possible range of engine speeds without overspeeding the hydraulic pump.

Where possible, engagement of the generator PTO system should be prevented if engine speed is above idle. Delete this section in its entirety.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1174 Log #526 **Final Action: Reject**
(A.8.6.2)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

A hydraulic generator system generally consists of a variable displacement hydraulic pump deriving its power from the propulsion engine, a controller to regulate the hydraulic fluid flow rate, a hydraulic motor driving the generator, hydraulic fluid cooler, reservoir, and other miscellaneous parts. All hydraulic generator systems have a window of operation (speed range). When selecting the power output of the hydraulic generator system, its speed range should be compared to the operating window of the ambulance's engine and the PTO ratios available. By selecting the hydraulic generator system and PTO ratio to match the application, electrical power can be provided over a wide operating range. The selected PTO should have a gear ratio that will allow the widest possible range of engine speeds without overspeeding the hydraulic pump. Where possible, engagement of the generator PTO system should be prevented if engine speed is above idle. Delete this section in its entirety.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1175 Log #416 **Final Action: Reject**
(A.8.6.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Engine-driven generator systems use an internal combustion engine closely coupled to a generator. Some installations are capable of producing power while the ambulance is in motion. Generators used in these applications should be specifically designed for mobile applications. Remote generator controls in the driving compartment should be considered and specified if desired. Delete this section in its entirety.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1176 Log #524 **Final Action: Reject**
(A.8.6.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Engine-driven generator systems use an internal combustion engine close-coupled to a generator. Some installations are capable of producing power while the ambulance is in motion. Generators used in these applications should be specifically designed for mobile applications. Remote generator controls in the driving compartment should be considered and specified if desired. Delete this section in its entirety.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1177 Log #415 **Final Action: Reject**
(A.8.6.3.9.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Emissions from exhaust discharge pipes should be directed away from any tools or equipment, because such emissions contain an oily substance that could make the tools difficult to handle and possibly dangerous to use.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1178 Log #525 **Final Action: Reject**
(A.8.6.3.9.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Emissions from exhaust discharge pipes should be directed away from any tools or equipment, because such emissions contain an oily substance that could make the tools difficult to handle and possibly dangerous to use.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1179 Log #417 **Final Action: Reject**
(A.8.6.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Brief descriptions of several different types of systems follow. All of these systems can overload the low voltage electrical system and cause the load-management system to terminate the generation of line voltage. As a result, the amount of line voltage power that can be supplied at any given time is totally dependent on the other, higher priority demands placed on the low voltage system. Dynamic Power Inverter. A dynamic power inverter converts alternator

output power to 120 volts ac (or 120/240 volts ac). Power is electronically inverted to ac. Usually the largest system of this type is 7,500 watts. Voltage and frequency control are typically very good. These types of systems may be suited to providing electric power while the ambulance is in motion. Static Power Inverter. A static power inverter converts 12 volt to 14 volt dc power to 120 volt ac (or 120/240 volts ac) power. Power is electronically inverted to ac. Usually the largest system of this type is 2000 watts. Voltage and frequency control are typically very good. These types of systems are suited to providing electric power while the ambulance is in motion.

Motor-Driven Generators. A motor-driven generator system converts 12 volt dc power to 120 volt ac (or 120/240 volts ac) power. The 12 volt dc motor drives an ac generator. Typical power ratings are less than 1600 watts. Voltage and frequency control are less precise than some of the other systems available. These types of systems are suited to providing electric power while the ambulance is in motion. Transformers. Transformer systems convert energy from the alternator, which is then rectified to 120 volt dc power. Typical installations provide 1000 watts. Output voltage is directly dependent on input voltage. Input voltage is dependent on engine and alternator speed. In most cases, other power sources that do not draw power from the low voltage system are preferable. Delete this section in its entirety.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1180 Log #523 **Final Action: Reject**
(A.8.6.4)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Brief descriptions of several different types of systems follow. All of these systems can overload the low voltage electrical system and cause the load-management system to terminate the generation of line voltage. As a result, the amount of line voltage power that can be supplied at any given time is totally dependent on the other, higher priority demands placed on the low voltage system. Dynamic Power Inverter. A dynamic power inverter converts alternator output power to 120 volts ac (or 120/240 volts ac). Power is electronically inverted to ac. Usually the largest system of this type is 7,500 watts. Voltage and frequency control are typically very good. These types of systems may be suited to providing electric power while the ambulance is in motion. Static Power Inverter. A static power inverter converts 12 volt to 14 volt dc power to 120 volt ac (or 120/240 volts ac) power. Power is electronically inverted to ac. Usually the largest system of this type is 2000 watts. Voltage and frequency control are typically very good. These types of systems are suited to providing electric power while the ambulance is in motion.

Motor-Driven Generators. A motor-driven generator system converts 12 volt dc power to 120 volt ac (or 120/240 volts ac) power. The 12 volt dc motor drives an ac generator. Typical power ratings are less than 1600 watts. Voltage and frequency control are less precise than some of the other systems available. These types of systems are suited to providing electric power while the ambulance is in motion. Transformers. Transformer systems convert energy from the alternator, which is then rectified to 120 volt dc power. Typical installations provide 1000 watts. Output voltage is directly dependent on input voltage. Input voltage is dependent on engine and alternator speed. In most cases, other power sources that do not draw power from the low voltage system are preferable. Delete this section in its entirety.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1181 Log #418 **Final Action: Reject**
(A.8.6.5.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

Operations in conjunction with any other component driven off the ambulance's engine could require special or alternate interlock systems.
Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1182 Log #522 **Final Action: Reject**
(A.8.6.5.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Operations in conjunction with any other component driven off the ambulance's engine could require special or alternate interlock systems.
Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1183 Log #419 **Final Action: Reject**
(A.8.6.6)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

Devices that produce modified sine waves may be less expensive than devices that produce pure sine waves. Power from electric utilities and most traditional mechanical generators are close to a pure sine wave. A modified sine wave output is satisfactory for many types of equipment but may cause problems with some types of equipment, including the following:

- (1) Some computer and electronic equipment
- (2) Some fluorescent lights with electronic ballasts
- (3) Some tools with variable speed motor controls
- (4) Some battery chargers
- (5) Some medical equipment
- (6) Some other equipment

The purchaser should identify what equipment is intended to be powered from the power source and verify with the equipment manufacturers that the equipment is compatible with modified sine wave power sources before specifying such a power source.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1184 Log #521 **Final Action: Reject**
(A.8.6.6)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Devices that produce modified sine waves may be less expensive than devices that produce pure sine waves. Power from electric utilities and most traditional mechanical generators are close to a pure sine wave. A modified sine wave output is satisfactory for many types of equipment but may cause problems with some types of equipment, including the following:

- (1) Some computer and electronic equipment
- (2) Some fluorescent lights with electronic ballasts
- (3) Some tools with variable speed motor controls
- (4) Some battery chargers
- (5) Some medical equipment
- (6) Some other equipment

The purchaser should identify what equipment is intended to be powered from the power source and verify with the equipment manufacturers that the equipment is compatible with modified sine wave power sources before specifying such a power source.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1185 Log #420 **Final Action: Reject**
(A.8.7)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

Portable generator systems are generally designed with an integral fuel tank and controls in one modular package. This allows the system to be picked up and transported to a remote location from the ambulance. Generators designed for portable use should be accessible for removal. These generators are generally not suited for "enclosed" compartment operation or should be mounted on a slide-out tray for adequate ventilation. Such installations require interlocks or a high temperature alarm to ensure that the generator is operated in slide-out condition. The generator performance specifications should be evaluated carefully to ensure that the required level of performance can be met. Article 445, "Generators," of NFPA 70, National Electrical Code, requires that overcurrent protection be provided on portable generators.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1186 Log #520 **Final Action: Reject**
(A.8.7)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Portable generator systems are generally designed with an integral fuel tank and controls in one modular package. This allows the system to be picked up and transported to a remote location from the ambulance. Generators designed for portable use should be accessible for removal. These generators are generally not suited for "enclosed" compartment operation or should be mounted on a slide-out tray for adequate ventilation. Such installations require interlocks or a high temperature alarm to ensure that the generator is operated in slide-out condition. The generator performance specifications should be evaluated carefully to ensure that the required level of performance can be met. Article 445, "Generators," of NFPA 70, National Electrical Code, requires that overcurrent protection be provided on portable generators.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1187 Log #421 **Final Action: Reject**
(A.8.9.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

~~Where the wire could be exposed to temperatures above 194°F (90°C), higher temperature rated wire should be used.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1188 Log #519 **Final Action: Reject**
(A.8.9.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~Where the wire could be exposed to temperatures above 194°F (90°C), higher temperature rated wire should be used.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1189 Log #422 **Final Action: Reject**
(A.8.10.3.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete A.8.10.3.4.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1190 Log #518 **Final Action: Reject**
(A.8.10.3.4)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete A.8.10.3.4.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1191 Log #424 **Final Action: Reject**
(A.8.11)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Where the wire could be exposed to temperatures above 194°F (90°C), higher temperature rated wire should be used.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1192 Log #516 **Final Action: Reject**
(A.8.11)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~Where the wire could be exposed to temperatures above 194°F (90°C), higher temperature rated wire should be used.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1193 Log #423 **Final Action: Reject**
(A.8.11.6.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~Locations in which flexible cord might be damaged include but are not limited to compartment walls and floors, exposed outside areas, and exposed interior areas near equipment or walkways.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1194 Log #517 **Final Action: Reject**
(A.8.11.6.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Locations in which flexible cord might be damaged include but are not limited to compartment walls and floors, exposed outside areas, and exposed interior areas near equipment or walkways.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1195 Log #425 **Final Action: Reject**
(A.8.12.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

Common connectors and terminations that comply with these requirements include but are not limited to the following:

- (1) Welded or brazed connectors
- (2) Crimped connectors
- (3) Soldered connections that are mechanically secured before soldering
- (4) Screw-type positive pressure connectors
- (5) Ring terminals
- (6) Hooks
- (7) Upturned spade
- (8) Crimped-on pins

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1196 Log #515 **Final Action: Reject**
(A.8.12.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Common connectors and terminations that comply with these requirements include but are not limited to the following:

- (1) Welded or brazed connectors
- (2) Crimped connectors
- (3) Soldered connections that are mechanically secured before soldering
- (4) Screw-type positive pressure connectors
- (5) Ring terminals
- (6) Hooks
- (7) Upturned spade
- (8) Crimped-on pins

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1197 Log #426 **Final Action: Reject**
(A.8.12.4)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

The following switch terminology can be helpful in understanding the different types of switches. One Pole (1P) or Single Pole (SP): A switch device that opens, closes, or changes connections in a single conductor of an electrical circuit. Two Pole (2P) or Double Pole (DP): A switch device that opens, closes, or changes connections in both conductors of the same circuit. Two Circuit (2-CIR): A switch device that opens, closes, or changes connections in a single conductor of two independent circuits. Single Throw (ST): A switch that opens, closes, or completes a circuit at only one of the extreme positions of its actuator. Double Throw (DT): A switch that opens, closes, or completes a circuit at both extreme positions of its actuator. Normally Open (NO): A switch in which one or more circuits are open when the switch actuator is at its normal or rest position. Normally Closed (NC): A switch in which one or more circuits are closed when the switch actuator is at its normal or rest position. Switches are rated for the type of load they are designed to control. Switch ratings include the following:

- (1) Resistive
- (2) Inductive
- (3) Horsepower (i.e., motor loads)
- (4) Tungsten (i.e., incandescent lamp loads)
- (5) Alternating current
- (6) Direct current

The ampere rating of a given switch is dependent on the type of load. In particular, switches used to control circuits should have the appropriate derating. Delete this section in its entirety.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1198 Log #514 **Final Action: Reject**
(A.8.12.4)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

The following switch terminology can be helpful in understanding the different types of switches. One Pole (1P) or Single Pole (SP): A switch device that opens, closes, or changes connections in a single conductor of an electrical circuit. Two Pole (2P) or Double Pole (DP): A switch device that opens, closes, or changes connections in both conductors of the same circuit. Two Circuit (2-CIR): A switch device that opens, closes, or changes connections in a single conductor of two independent circuits. Single Throw (ST): A switch that opens, closes, or completes a circuit at only one of the extreme positions of its actuator. Double Throw (DT): A switch that opens, closes, or completes a circuit at both extreme positions of its actuator. Normally Open (NO): A switch in which one or more circuits are open when the switch actuator is at its normal or rest position. Normally Closed (NC): A switch in which one or more circuits are closed when the switch actuator is at its normal or rest position. Switches are rated for the type of load they are designed to control. Switch ratings include the following:

- (1) Resistive
- (2) Inductive
- (3) Horsepower (i.e., motor loads)
- (4) Tungsten (i.e., incandescent lamp loads)
- (5) Alternating current
- (6) Direct current

The ampere rating of a given switch is dependent on the type of load. In particular, switches used to control circuits should have the appropriate derating. Delete this section in its entirety.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1199 Log #429 **Final Action: Reject**
(A.8.12.5)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

The purchaser should specify the number and location of receptacles that are needed to operate the devices to be powered by the system. The purchaser should specify the NEMA number (if applicable), manufacturer, and style of the receptacles desired. For other than NEMA-type receptacles, the purchaser should additionally specify the wiring configuration.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1200 Log #511 **Final Action: Reject**
(A.8.12.5)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

The purchaser should specify the number and location of receptacles that are needed to operate

the devices to be powered by the system. The purchaser should specify the NEMA number (if applicable), manufacturer, and style of the receptacles desired. For other than NEMA-type receptacles, the purchaser should additionally specify the wiring configuration.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1201 Log #427 **Final Action: Reject**
(A.8.12.5.6.3)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

If the off-road ambulance is to ford water, the receptacle distance should be increased above 30 in. (750 mm). The purchaser should review the proposed height for any receptacles on the ambulance and specify a higher mounting height if desired.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1202 Log #513 **Final Action: Reject**
(A.8.12.5.6.3)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

If the off-road ambulance is to ford water, the receptacle distance should be increased above 30 in. (750 mm). The purchaser should review the proposed height for any receptacles on the ambulance and specify a higher mounting height if desired.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1203 Log #428 **Final Action: Reject**
(A.8.12.5.11)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

While NEMA configurations as defined in NEMA WD 6, Wiring Devices—Dimensional Requirements, are recommended to promote compatibility of equipment during mutual aid operations, other configurations are in use and have been adopted by various ambulance services. Acceptable NEMA-type plug and receptacle configurations for various ac voltage and current ratings are shown in Figure 8-12.5.7.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1204 Log #512 **Final Action: Reject**
(A.8.12.5.11)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

While NEMA configurations as defined in NEMA WD 6, Wiring Devices—Dimensional Requirements, are recommended to promote compatibility of equipment during mutual aid operations, other configurations are in use and have been adopted by various ambulance services. Acceptable NEMA-type plug and receptacle configurations for various ac voltage and current ratings are shown in Figure 8-12.5.7.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1205 Log #430 **Final Action: Reject**
(A.8.13.5)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

A suggested minimum capacity of a reel is at least 100 ft (30 m) of cord rated to carry 20 amps at 120 volts ac. When sizing the reel, extra capacity should be provided when multiple receptacles are attached to the cord stored on the reel. A cord reel to supply a single 120-volt circuit requires three collector rings and three conductors in the cord, for line, neutral, and ground. If the power source has 120/240-volt outputs, as most power sources do, a second equivalent circuit with the same rating requires only one additional conductor, because the neutral and ground can be common to both circuits. Thus, with approximately 25 percent more reel space and cord cost, the cord reel can supply twice the number of lights or other loads.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1206 Log #510 **Final Action: Reject**
(A.8.13.5)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

A suggested minimum capacity of a reel is at least 100 ft (30 m) of cord rated to carry 20 amps at 120 volts ac. When sizing the reel, extra capacity should be provided when multiple receptacles are attached to the cord stored on the reel. A cord reel to supply a single 120-volt circuit requires three collector rings and three conductors in the cord, for line, neutral, and ground. If the power source has 120/240-volt outputs, as most power sources do, a second equivalent circuit with the same rating requires only one additional conductor, because the neutral and ground can be common to both circuits. Thus, with approximately 25 percent more reel space and cord cost, the cord reel can supply twice the number of lights or other loads.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1207 Log #431 **Final Action: Reject**
(A.8.13.6)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA
Recommendation: Delete the following text:

Table A.8.13.6 lists the suggested cord size for cord reels based on the desired circuit ampacity and the cord length. All cord reels with one or more outlets should be rated at 15 amps or greater. For heavy loads such as large smoke fans and hydraulic rescue tool power plants, the purchaser should consider 240-volt units instead of 120-volt units. This will allow the use of smaller cords and reels. For example, a 200 ft (60 m) reel to supply a hydraulic rescue tool (HRT) power plant that draws 15 amps at 240 volts would require 12-gauge wire. The same power unit in a version to run on 120 volts would draw 30 amps and would require 8-gauge wire. Cord reels for three-phase power or other specialized applications should be designed with the assistance of a qualified electrical engineer.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1208 Log #509 **Final Action: Reject**
(A.8.13.6)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

Table A.8.13.6 lists the suggested cord size for cord reels based on the desired circuit ampacity and the cord length. All cord reels with one or more outlets should be rated at 15 amps or greater. For heavy loads such as large smoke fans and hydraulic rescue tool power plants, the purchaser should consider 240-volt units instead of 120-volt units. This will allow the use of smaller cords and reels. For example, a 200 ft (60 m) reel to supply a hydraulic rescue tool (HRT) power plant that draws 15 amps at 240 volts would require 12-gauge wire. The same power unit in a version to run on 120 volts would draw 30 amps and would require 8-gauge wire. Cord reels for three-phase power or other specialized applications should be designed with the assistance of a qualified electrical engineer.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1209 Log #432 **Final Action: Reject**
(A.8.13.7)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

The purchaser may want to specify that the cord on the reel be provided with a disconnect means within 18 in. (457 mm) from the reel for cord removal if the cord is 8 AWG or smaller. A disconnect makes it easier to replace damaged cord or to use the cord to extend another cord, although it reduces the capacity of the reel and makes it harder to coil the cord on the reel.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
 THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1210 Log #508 **Final Action: Reject**
(A.8.13.7)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

The purchaser may want to specify that the cord on the reel be provided with a disconnect means within 18 in. (457 mm) from the reel for cord removal if the cord is 8 AWG or smaller. A disconnect makes it easier to replace damaged cord or to use the cord to extend another cord, although it reduces the capacity of the reel and makes it harder to coil the cord on the reel.

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1211 Log #433 **Final Action: Reject**
(A.8.13.8)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~The purchaser may want to specify that the cord on the reel be provided with a disconnect means within 18 in. (457 mm) from the reel for cord removal if the cord is 8 AWG or smaller. A disconnect makes it easier to replace damaged cord or to use the cord to extend another cord, although it reduces the capacity of the reel and makes it harder to coil the cord on the reel.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1212 Log #507 **Final Action: Reject**
(A.8.13.8)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~The purchaser may want to specify that the cord on the reel be provided with a disconnect means within 18 in. (457 mm) from the reel for cord removal if the cord is 8 AWG or smaller. A disconnect makes it easier to replace damaged cord or to use the cord to extend another cord, although it reduces the capacity of the reel and makes it harder to coil the cord on the reel.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1213 Log #434 **Final Action: Reject**
(A.8.13.9.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~It might be advantageous to specify a remote power distribution box that has a provision for hanging the unit from a door or ladder~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1214 Log #506 **Final Action: Reject**
(A.8.13.9.2)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~It might be advantageous to specify a remote power distribution box that has a provision for hanging the unit from a door or ladder~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1215 Log #435 **Final Action: Reject**
(A.8.13.9.5)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~It might be advantageous to specify a remote power distribution box that has a provision for hanging the unit from a door or ladder. Delete this section in its entirety.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1216 Log #505 **Final Action: Reject**
(A.8.13.9.5)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~It might be advantageous to specify a remote power distribution box that has a provision for hanging the unit from a door or ladder. Delete this section in its entirety.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1217 Log #436 **Final Action: Reject**
(A.9.1.1)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~The purchaser might wish to have the entire low-voltage electrical system and warning device system certified by an independent third-party certification organization.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: Reject

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).
THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1218 Log #504 **Final Action: Reject**
(A.9.1.1)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~The purchaser might wish to have the entire low voltage electrical system and warning device system certified by an independent third-party certification organization.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: **Reject**

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1219 Log #437 **Final Action: Reject**
(A.9.2)

Submitter: Patrick Moore, National Association of Emergency Medical Technicians (NAEMT) / Rep. American Ambulance Assn. (NAEMT, AAA), National EMS Managers Assn. (NEMSMA), and Steve Williamson, AAA

Recommendation: Delete the following text:

~~The purchaser should consider the range of temperatures in which the power source is to be operated. If extreme conditions are anticipated, the purchaser should specify the test conditions that are desired. Delete this section in its entirety.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: **Reject**

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

1917-1220 Log #503 **Final Action: Reject**
(A.9.2)

Submitter: Ronald W. Thackery, American Medical Response, Inc.

Recommendation: Delete the following text:

~~The purchaser should consider the range of temperatures in which the power source is to be operated. If extreme conditions are anticipated, the purchaser should specify the test conditions that are desired. Delete this section in its entirety.~~

Substantiation: The proposed standard lacks sufficient need. Limited number of automotive ambulances carry generators.

Committee Meeting Action: **Reject**

Committee Statement: The Annex item is not a requirement. Rather, it serves to clarify and explain the standard.

Number Eligible to Vote: 32

Ballot Results: Affirmative: 25 Negative: 2

Ballot Not Returned: 5 Freiburger, R., Johnston, J., Myers, J., Patrick, R., Peters, K.

Explanation of Negative:

MEIJER, M.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

THACKERY, R.: See my Explanation of Negative on Proposal 1917-1 (Log #2).

NFPA 1917

Standard for

Automotive Ambulances

2013 Edition

Chapter 1 Administration

1.1* Scope. This standard shall define the minimum requirements for the design, performance, and testing of new automotive ambulances used for out-of-hospital medical care and patient transport.

1.2 Purpose. The purpose of this standard shall be to establish the minimum requirements for new automotive ambulances that are safe and reliable when properly maintained and used within their design parameters.

1.3 Application.

1.3.1 This standard shall apply to new ambulances that are contracted for on or after January 1, 2013.

1.3.2 This standard shall not apply to the following:

- (1) Refurbished and re-mounted vehicles
- (2) Vehicles that are used for transport of more than two stretcher-bound patients at the same time
- (3) Mass casualty vehicles
- (4) Military field ambulances
- (5) Vehicles intended for use as fire apparatus as specified in NFPA 1901 or NFPA 1906
- (6) Wheeled chair transport vehicles

1.4* Retroactivity. This standard shall not be applied retroactively.

1.5 Equivalency. Nothing in this standard is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this standard.

1.5.1 Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.

1.5.2 The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

1.6* Units and Formulas.

1.6.1 In this standard, values for measurement in U.S. customary units shall be followed by equivalents in SI units.

1.6.2 Either set of values can be used, but the same set of values (either U.S. customary units or SI units) shall be used consistently.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471, www.nfpa.org.

NFPA 70[®], *National Electrical Code*[®], 2011 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus*, 2009 edition.

NFPA 1906, *Standard for Wildland Fire Apparatus*, 2006 edition.

2.3 Other Publications.

2.3.1 AMECA Publications. Automotive Manufacturers Equipment Compliance Agency, 1025 Connecticut Avenue, NW, Suite #1012, Washington, DC 20036.

AMECA Compliance Handbook for GSA and SAE Warning Lamp Systems, 2010.

2.3.2 ANSI Publications. American National Standards Institute, Inc., 25 West 43rd Street, 4th Floor, New York, NY 10036, www.ansi.org.

ANSI Z535.4, *Product Safety Signs and Labels*, 2007.

2.3.3 ASTM Publications. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, www.astm.org.

ASTM D 4956, *Standard Specification for Retroreflective Sheeting for Traffic Control*, 2009.

ASTM D 5010, *Standard Guide for Testing Printing Inks and Related Materials*, ____.

ASTM E 661, *Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads*, 2009.

2.3.4 ECE Publications. UN Economic Commission for Europe, Palais des Nations, CH-1211 Geneva 10, Switzerland.

ECE R29, *Uniform Provisions Concerning the Approval of Vehicles with Regard to the Protection of the Occupants of the Cab of a Commercial Vehicle*.

2.3.5 IPC Publications.

IPC A-610D, "Acceptability of Electronic Assemblies."

2.3.6 ISO Publications. International Organization for Standardization, 1 Ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, www.iso.ch.net.

ISO/IEC 17020, *General criteria for the operation of various types of bodies performing inspection*, 1998.

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*, 2005.

2.3.7 SAE Publications. Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, www.sae.org.

SAE J156, *Fusible Links*, 2005.

SAE J551/1, *Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz)*, 2006.

SAE J553, *Circuit Breakers*, 2004.

SAE J554, *Electric Fuses (Cartridge Type)*, 1987.

SAE J575, *Test Methods and Equipment for Lighting Devices and Components for Use on Vehicles Less Than 2032 mm in Overall Width*, 2007.

SAE J576, *Plastic Material or Materials for Use in Optical Parts Such as Lenses and Reflex Reflectors of Motor Vehicle Lighting Devices*, 2010.

SAE J578, *Color Specification*, 2006.

SAE J595, *Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles*, 2005.

SAE J683, *Tire Chain Clearance — Trucks, Buses (Except Suburban, Intercity, and Transit Buses), and Combinations of Vehicles*, 1985.

SAE J689, *Approach, Departure, and Ramp Break over Angles*, 2009.

SAE J845, *Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles*, 2007.

SAE J994, *Alarm — Backup — Electric, Laboratory Performance Testing*, 2003.

SAE J1127, *Low Voltage Battery Cable*, 2005.

SAE J1128, *Low Voltage Primary Cable*, 2005.

SAE J1292, *Automobile, Truck, Truck-Tractor, Trailer, and Motor Coach Wiring*, 1981.

SAE J1318, *Gaseous Discharge Warning Lamp for Authorized Emergency, Maintenance, and Service Vehicles*, 1998.

SAE J1330, *Photometry Laboratory Accuracy Guidelines*, 2007.

SAE J1349, *Engine Power Test Code, Spark Ignition and Diesel*, 2004.

SAE J1690, *Flashers*, 1996.

SAE J1849, *Emergency Vehicle Sirens*, 2008.

SAE J1888, *High Current Time Lag Electric Fuses*, 1990.

SAE J1889, *L.E.D. Signal and Marking Lighting Devices*, 2005.

SAE J2077, *Miniature Blade Type Electrical Fuses*, 1990.

SAE J2420, *COE Frontal Strength Evaluation — Dynamic Loading Heavy Trucks*, 2003.

SAE J2422, *Cab Roof Strength Evaluation — Quasi-Static Loading Heavy Trucks*, 2003.

SAE J2917, *Occupant Restraint and Equipment Mounting Integrity — Frontal Impact System-Level Ambulance Patient Compartment*, 2010.

2.3.8 UL Publications. Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096, www.ul.com.

ANSI/UL 153, *Standard for Portable Electric Luminaires*, 2002.

ANSI/UL 498, *Standard for Safety Attachment Plugs and Receptacles*, 2001, Revised 2010.

ANSI/UL 969, *Standard for Marking and Labeling Systems*, 1995, Revised 2008.

ANSI/UL 1598, *Luminaires*, 2008.

ANSI 51.4, *Specification for Sound Level Meters*, ____.

2.3.9 U.S. Government Publications. U.S. Government Printing Office, Washington, DC 20402, www.gpo.gov.

Title 29, Code of Federal Regulations, Part 1910.7, “Definition and Requirements for a Nationally Recognized Testing Laboratory.”

Title 49, Code of Federal Regulations, Part 571, Subpart B, “Federal Motor Vehicle Safety Standards,” No. 108. “Lamps, reflective devices, and associated equipment – passenger cars, multipurpose passenger vehicles, trucks, busses, trailers, (except pole trailers and trailer converter dollies), and motorcycles,” 49CFR571.108.

Title 49, Code of Federal Regulations, Part 571, Subpart B, “Federal Motor Vehicle Safety Standards,” No. 206, “Door locks and door retention components - passenger cars, multipurpose passenger vehicles, and trucks,” 49CFR571.206.

Title 49, Code of Federal Regulations, Part 571, Subpart B, “Federal Motor Vehicle Safety Standards,” No. 213, “Child restraint systems – passenger cars, multipurpose passenger vehicles, trucks, and child restraint systems for use in motor vehicles and aircraft,” 49CFR571.213.

Title 49, Code of Federal Regulations, Part 571, Subpart B, “Federal Motor Vehicle Safety Standards,” No. 302, “Flammability of interior materials – passenger cars, multipurpose passenger vehicles, trucks, and busses,” 49CFR571.302.

2.3.10 Other Publications.

Merriam-Webster’s Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections.

NFPA 70[®], *National Electrical Code*[®], 2011 edition.

NFPA 1451, *Standard for Fire Service Vehicle Operations Training Program*, 2007 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus*, 2009 edition.

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster’s Collegiate Dictionary*, 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3 Labeled. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that

maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

3.2.4* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.5 Shall. Indicates a mandatory requirement.

3.2.6 Should. Indicates a recommendation or that which is advised but not required.

3.2.7 Standard. A document, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions shall be located in an appendix or annex, footnote, or fine-print note and are not to be considered a part of the requirements of a standard.

3.3 General Definitions.

3.3.1 Acceptance. An agreement between the purchasing authority and the contractor that the terms and conditions of the contract have been met.

3.3.2 Acceptance Tests. Tests performed on behalf of or by the purchaser at the time of delivery to determine compliance with the specifications for the ambulance.

3.3.3 Ambulance. A vehicle used for emergency medical care that provides a driver’s compartment; a patient compartment to accommodate an emergency medical services provider (EMSP) and one patient located on the primary cot so positioned that the primary patient can be given emergency care during transit; equipment and supplies for emergency care at the scene as well as during transport; safety, comfort, and avoidance of aggravation of the patient’s injury or illness; two-way radio communication; and audible and visual traffic warning devices.

3.3.3.1* Substantially Similar Ambulance. An ambulance in which the relevant area or component that is being compared or considered is comparable. Applicable to the test being considered for an ambulance in which like areas are compared.

3.3.3.2 Type I Ambulance. An ambulance with a 10,001 lb to 14,000 lb GVWR constructed on a cab chassis with a modular ambulance body.

3.3.3.3 Type I-AD (Additional Duty) Ambulance. An ambulance with a 14,001 lb or more GVWR constructed on a cab chassis with a modular ambulance body.

3.3.3.4 Type II Ambulance. An ambulance constructed on a van. -

3.3.3.5 Type III Ambulance. An ambulance with a 10,001 lb to 14,000 lb GVWR constructed on a cutaway van chassis with integrated modular ambulance body.

3.3.3.6 Type III-AD (Additional Duty) Ambulance. An ambulance with a 14,001 lb or more GVWR constructed on a cutaway van chassis with integrated modular body.

3.3.4 Angle.

3.3.4.1 Angle of Approach. The smallest angle made between the road surface and a line drawn from the front point of ground contact of the front tire to any projection of the ambulance in front of the front axle.

3.3.4.2 Angle of Departure. The smallest angle made between the road surface and a line drawn from the rear point of ground contact of the rear tire to any projection of the ambulance behind the rear axle.

3.3.4.3 Ramp Breakover Angle. The angle measured between two lines tangent to the front and rear tire static loaded radius, and intersecting at a point on the underside of the vehicle that defines the largest ramp over which the vehicle can roll.

3.3.5 Automatic Electrical Load Management System. A device that continuously monitors the electrical system voltage and automatically sheds predetermined loads in a selected order to prevent overdischarging of the ambulance’s batteries.

3.3.6 Bonded (Bonding). Connected to establish electrical continuity and conductivity.

3.3.7 Bulkhead. The partition dividing the driver compartment from the patient compartment.

3.3.8 Center of Gravity. The point at which the entire weight of the ambulance is considered to be concentrated so that, if supported at this point, the ambulance would remain in equilibrium in any position.

3.3.9 Chassis. The basic operating motor vehicle including the engine, frame, and other essential structural and mechanical parts, but exclusive of the body and all appurtenances for the accommodation of driver, property, passengers, appliances, or equipment related to other than control. Common usage might, but need not, include a cab (or cowl).

3.3.10 Compartment.

3.3.10.1 Enclosed Compartment. A weather-resistant area designed to protect stored items from environmental damage that is confined on six sides and equipped with an access opening(s) that can be closed and latched.

3.3.10.2 Patient Compartment. The portion of the ambulance behind the cab.

3.3.10.2.1 Type I Patient Compartment. The modular body area added on behind the cab.

3.3.10.2.2 Type II Patient Compartment. The body area beginning immediately behind the forward bulkhead.

3.3.10.2.3 Type III Patient Compartment. The modular body area added on behind the cab.

3.3.11 Conductor.

3.3.11.1 Grounding Conductor. A non-current-carrying conductor used to connect equipment or the ground circuit of a wiring system to the power source grounding system.

3.3.11.2 Line Voltage Conductor. An ungrounded current-carrying conductor of a line voltage circuit.

3.3.11.3 Neutral Conductor. The conductor connected to the neutral point of a system that is intended to carry current under normal conditions.

3.3.12 Continuous Duty. Operation at a substantially constant load for an indefinitely long time.

3.3.13* Contractor. The person or company responsible for fulfilling an agreed upon contract.

3.3.14 Defect. A discontinuity in a part or a failure to function that interferes with the service or reliability for which the part was intended.

3.3.15 Documentation. Any data or information supplied by the manufacturer or contractor relative to the ambulance, including information on its operation, service, and maintenance.

3.3.16 Electrical Appliance. An electrical device or instrument designed to perform a specific function, such as scene lights, battery charger, medical equipment, and so forth.

3.3.17* Electronic Siren. An audible warning device that produces sound electronically through the use of amplifiers and electromagnetic speakers.

3.3.18 Exterior. A nonsheltered location exposed to the environment, either continuously or intermittently.

3.3.19 Federal Motor Vehicle Safety Standards (FMVSS). Regulations promulgated by the National Highway Transportation Safety Administration (NHTSA) of the United States under Public Law 89-563, which are mandatory and must be complied with when motor vehicles or items of motor vehicle equipment are manufactured and certified thereto.

3.3.20 Fixed Power Source. Any line voltage power source except a portable generator.

3.3.21 Fully Latched Position. The last or fully closed position on the striker of a FMVSS 206 compliant door latch.

3.3.22 Gallon. United States gallon.

3.3.23 Gauge. A visual device that indicates a measurement.

3.3.24 GAWR. See 3.3.66.1, Gross Axle Weight Rating.

3.3.25 Generator. An electromechanical device for the production of electricity.

3.3.26* Grade. A measurement of the angle used in road design and expressed as a percentage of elevation change over distance.

3.3.27 Ground Clearance. The clearance under a vehicle at all locations except the axles and driveshaft connections to the axle or items designed to swing clear.

3.3.28 GVWR. See 3.3.66.3, Gross Vehicle Weight Rating (GVWR).

3.3.29 High-Idle Speed Control. A control or switch system that provides a means to increase the engine operating speed from an idle condition to a higher preset operating speed. [1901, 2009]

3.3.30 Instruction Plate. A visual indication whether in pictorial or word format that provides instruction to the operator in the use of a component on the ambulance.

3.3.31 Interior. A sheltered location not exposed to the environment.

3.3.32 Interlock. A device or arrangement by means of which the functioning of one part is controlled by the functioning of another.

3.3.33 Label. A visual indication whether in pictorial or word format that provides for the identification of a control, switch, indicator, or gauge, or the display of information useful to the operator.

3.3.34 Latch. A mechanical device used to position the door in a closed position relative to the body framework with provision for controlled release or operation.

3.3.35 Line Voltage Circuit, Equipment, or System. An ac or dc electrical circuit, equipment, or system where the voltage to ground or from line to line is equal to or greater than 30 volts rms (ac), 42.4 volts peak (ac), or 60 volts dc.

3.3.36 Load Distribution Plan. A drawing or spreadsheet of shelves, cabinets, drawers, compartment, or otherwise storage with a maximum weight attached to each location.

3.3.37* Loose Equipment. Equipment other than the occupants and the cot that is intended to be stored on the ambulance.

3.3.38 Low Voltage Circuit, Equipment, or System. An electrical circuit, equipment, or system where the voltage does not exceed 30 volts rms (ac), 42.4 volts peak (ac), or 60 volts dc; usually 12 volts dc in an ambulance.

3.3.39 Manufacturer. The person or persons, company, firm, corporation, partnership, or other organization responsible for turning raw materials or components into a finished product.

3.3.40 Optical Center. The point specified by the optical warning device manufacturer of highest intensity when measuring the output of an optical warning device.

3.3.41 Optical Power. A unit of measure designated as candela-seconds/minute that combines the flash energy and flash rate of an optical source into one power measurement representing the true visual effectiveness of the emitted light.

3.3.42* Optical Source. Any single, independently mounted, light-emitting component in a lighting system.

3.3.43 Optical Warning Device. A manufactured assembly of one or more optical sources.

3.3.44 Panelboard. A single panel or group of panel units designed for assembly in the form of a single panel, including buses and automatic overcurrent devices, and equipped with or without switches for the control of light, heat, or power circuits; designed to be placed in a cabinet or cutout box placed in or against a wall, partition, or other support; and accessible only from the front. [70, 2011]

3.3.45 Patient Cot. An elevating patient conveyance device upon which the primary patient is transported, which is also known as a transporter, gurney, and carrier.

3.3.46 Power Source. A device that produces line voltage electricity.

3.3.47 Power Supply Assembly. Any cord or distribution assembly that is partly comprised of the neutral conductor, grounding conductor, and line voltage conductors connected from the output terminals of the power source to the first main overcurrent protection device.

3.3.48 Proper(ly). In accordance with the manufacturer's specifications or as recommended by the manufacturer.

3.3.49 psi. Pounds per square inch.

3.3.50 PTO. Power takeoff.

3.3.51 Purchaser. The authority having responsibility for the specification and acceptance of the ambulance.

3.3.52 Purchasing Authority. The agency that has the sole responsibility and authority for negotiating, placing, and, where necessary, modifying each and every solicitation, purchase order, or other award issued by a governing body.

3.3.53 Qualified Person. A person who, by possession of a recognized degree, certificate, professional standing, or skill, and who, by knowledge, training, and experience, has demonstrated the ability to deal with problems relating to a particular subject matter, work, or project. [1451, 2007]

3.3.54 Readily Accessible. Able to be located, reached, serviced, or removed without removing other components or parts of the ambulance and without the need to use special tools to open enclosures.

3.3.55 Reserve Capacity. The ability of a battery to sustain a minimum electrical load in the event of a charging system failure or a prolonged charging system deficit.

3.3.56 Seat.

3.3.56.1 Child Restraint Seat. A seat capable of transporting a child 66 lb (30 kg) or less in accordance with FMVSS 213 and mounted in accordance with the seat manufacturer's recommendation.

3.3.56.2 Infant Restraint Seat. A seat capable of transporting an infant 22 lb (10 kg) or less in accordance with FMVSS 213 and mounted in accordance with the seat manufacturer's recommendation.

3.3.57 Side Entry Door. The body door on the side of the ambulance body that provides entry into the patient compartment and through which patients may be loaded and unloaded.

3.3.58 Sign. A visual indication whether in pictorial or word format that provides a warning to the operator or other persons near the ambulance.

3.3.59 Stretcher. A non-elevating transportation device designed to transport a supine patient, which is also known as a litter or flat.

3.3.60 Striker. A mechanical device with which the latch engages on the opposing member of the body framework.

3.3.61 Switch. Any set of contacts that interrupts or controls current flow through an electrical circuit.

3.3.62 Total Continuous Electrical Load. The total current required to operate all of the devices permanently connected to the ambulance that can be simultaneously energized excluding intermittent-type loads.

3.3.63 Turning Clearance Radius. One-half the larger of the left or right full circle wall-to-wall turning diameter.

3.3.64 Usable Payload. The weight of the loose equipment, occupants, and cot that can be carried in the ambulance without exceeding the GVWR.

3.3.65 Weight.

3.3.65.1* Curb Weight. The total weight of the complete ambulance less the payload.

3.3.66 Weight Rating.

3.3.66.1* Gross Axle Weight Rating (GAWR). The final stage manufacturer's specified maximum load-carrying capacity of an axle system, as measured at the tire-ground interfaces.

3.3.66.2 Gross Combination Weight Rating (GCWR). The final stage manufacturer's specified maximum loaded weight for a combination (articulated) vehicle consisting of a tow vehicle and one or more towed units.

3.3.66.3* Gross Vehicle Weight Rating (GVWR). The final stage manufacturer's specified maximum load-carrying capacity of a single vehicle.

3.3.67 Wet Location. A location on a nonenclosed, exterior surface of an ambulance body or driving and crew compartment or a nonsheltered location inside a compartment with a door or cover that, while open, exposes the enclosure or panelboard to the environment.

Chapter 4 General Requirements

4.1 General. All ambulances shall comply with the requirements in Chapters 1 through 9.

4.2 Responsibility of the Purchaser.

4.2.1 It shall be the responsibility of the purchaser to consider the amount of equipment and personnel that will be carried on the ambulance and to specify a minimum usable payload that will accommodate this weight once the ambulance is placed in service.

4.2.2 It shall be the responsibility of the purchaser to specify any details of the ambulance that would exceed the minimum specifications of this standard.

4.2.3 After acceptance of the ambulance, the purchaser shall be responsible for ongoing training of personnel to develop and maintain proficiency regarding the proper and safe use of the ambulance and the associated equipment.

4.3 Responsibility of the Contractor.

4.3.1 The contractor shall provide a detailed description of the ambulance, a list of equipment to be furnished, and other construction and performance details to which the ambulance shall conform.

4.3.1.1 The detailed description of the ambulance shall include, but shall not be limited to, minimum usable payload, wheelbase, curb-to-curb turning clearance radius, principal dimensions, angle of approach, and angle of departure.

4.3.1.2 The contractor's detailed description shall include a statement specifically describing each aspect of the delivered ambulance that will not be fully compliant with the requirements of this standard.

4.3.1.3 The purpose of these contractor specifications shall be to define what the contractor intends to furnish and deliver to the purchaser.

4.3.2 Responsibility for the ambulance and equipment shall remain with the contractor until they are accepted by the purchaser.

4.4 Ambulance Components.

4.4.1 All components shall be installed in accordance with the manufacturer's installation instructions or with the written approval of the component manufacturer.

4.4.2 All medical devices furnished shall comply with the U.S. Food and Drug Administration (FDA) regulatory requirements.

4.4.3 Vehicles shall be free from defects that could impair their reliability or serviceability.

4.4.4 All bodies, systems, equipment, and interfaces with the chassis not otherwise specified in this standard shall be done in accordance with the Chassis OEM Body Builders Guidelines.

4.5 Legal Requirements. The ambulance shall comply with the following:

- (1) Applicable federal regulations
- (2) State regulations as specified by the purchaser

4.6 Third-Party Certification of Test Results. Where this standard requires the witnessing or performing of tests by an independent third-party organization, that organization shall meet the requirements of this section.

4.6.1 Testing shall be witnessed or performed by an organization that is accredited for inspection of ambulances in accordance with ISO/IEC 17020, *General Criteria For The Operation Of Various Types Of Bodies Performing Inspection*, or accredited for testing ambulances to this standard in accordance with ISO/IEC 17025, *General Requirements for the Competence of Testing and Calibration Laboratories*.

4.6.2 The certification organization shall not be owned or controlled by the final stage ambulance manufacturer.

4.6.3 The certification organization shall witness all tests and shall refuse to certify any test results for a system if all components of that system requiring testing do not pass the testing required by this standard.

4.6.4 Conditional, temporary, or partial certification of test results shall not be permitted.

4.6.5 Appropriate forms or data sheets shall be provided and used during the testing.

4.6.6 Programs shall be in place for training, proficiency testing, and performance verification of any staff involved with certification.

4.6.7 Appeal Process.

4.6.7.1 The certification organization's operating procedures shall provide a mechanism for the manufacturer to appeal decisions.

4.6.7.2 The procedures shall include provisions for the presentation of information from representatives of both sides of a controversy to a designated appeals panel.

4.6.8 The third-party that certifies any test results shall supply the following information on the certification organization letterhead:

- (1) Company or business for which the results are certified
- (2) Date of certification
- (3) Ambulance model, components, or equipment being certified
- (4) Certification organization and address
- (5) Date product tested
- (6) Model number and specification data

(7) Applicable specification references and test requirement

(8) Summary of the test report

(9) A certifying statement with official signature

4.6.9* The testing facility for each certification shall supply the following supportive verification data and information on letterhead stationery in electronic format:

(1) Name of company or business for whom product ambulance was tested

(2) Report date

(3) Name of sample product or device

(4) Contractor's address

(5) Serial and model number(s)

(6) Specification referral and amendment number(s), and test requirement(s)

(7) Test facilities used and location

(8) Test equipment used

(9) Test procedure

(10) Test results

(11) Verifying test data

(12) Photographs

(13) Drawings

(14) Test conclusion(s)

(15) Witness(es)

(16) Authorized signature

4.7 Certification of Test Results by Manufacturer. Where this standard requires the results of tests or the performance of a component to be certified by the manufacturer, the manufacturer shall meet the requirements of this section.

4.7.1 A representative of the manufacturer shall witness all tests and shall refuse to certify any test results for a system unless all components of that system requiring testing pass the testing required by this standard.

4.7.2 Conditional, temporary, or partial certification of test results shall not be permitted.

4.7.3 The manufacturer shall have the facilities and equipment necessary to conduct the required testing, a program for the calibration of all instruments, and procedures to ensure the proper control of all testing.

4.7.4 Appropriate forms or data sheets shall be provided and used during the testing.

4.7.5 Programs shall be in place for training, proficiency testing, and performance verification of any personnel involved with certification.

4.7.6 An official of the company that manufactures or installs the product shall designate in writing who is qualified to witness tests and certify results.

4.7.7 Certification documentation shall be delivered with the ambulance, including results of the certification tests.

4.7.8 Certification tests performed on a substantially similar ambulance shall be valid for up to 7 years or until such time as the production product changes are so significant that they no longer meet the definition of a substantially similar ambulance.

4.8 Personnel Protection.

4.8.1* Guards, shields, or other protection shall be provided where necessary in order to prevent injury of personnel by hot, moving, or rotating parts during nonmaintenance operations.

4.8.2 Electrical insulation or isolation shall be provided where necessary in order to prevent electrical shock from onboard electrical systems.

4.8.3 Vehicular workmanship shall ensure an operating environment free of accessible sharp projections and edges.

4.8.4 Safety-related signs shall meet the requirements of ANSI Z535.4, *Product Safety Signs and Labels*.

4.9 Controls and Instructions.

4.9.1 Illumination shall be provided for controls, switches, gauges, and instruments necessary for the operation of the ambulance and the equipment on it.

4.9.2* All required signs, instruction plates, and labels shall be permanent in nature, securely attached, and meet the requirements of ASTM D 5010, *Standard Guide for Testing Printing Inks and Related Materials*, and ANSI/UL 969, *Standard for Marking and Labeling Systems*.

4.9.2.1 The signs, instruction plates, and labels shall be resistant to damage from the following:

(1) Fluids to which they will normally be exposed

(2) Temperatures between -30°F and 176°F (-35°C and 80°C)

(3) Ultraviolet radiation

4.9.2.2 The exterior-mounted labels relating to safety or critical operational instructions shall be reflective or illuminated.

4.9.2.3 Controls and Switches.

4.9.2.3.1 Controls and switches that are expected to be operated by the belted driver while the ambulance is in motion shall be visible and within reach.

4.9.2.3.2 Controls and switches that are expected to be operated by the belted emergency medical service provider (EMSP) while the ambulance is in motion shall be visible and within reach of the designated primary patient care position.

4.9.2.4 Lever controls, equipment, items, and devices shall be installed, located, and stowed for the convenience of the purpose intended and shall not interfere with the EMSP or patient's ingress or egress of respective compartments.

4.9.2.5 Marking of switches, indicators, and control devices shall be perceptively and permanently identified with at least 12-point letters for the noun or function, and 8-point letters for the remainder of the legend.

4.9.2.6 The identifications shall be contrasting colors etched or engraved in plastic or metal, or printed and laminated translucent plastic, grouped according to function, and mounted in illuminated or backlit panel(s) or the console.

4.10 Component Protection.

4.10.1* Hydraulic hose lines, air system tubing, control cords, and electrical harnesses shall be mechanically attached to the frame or body structure of the ambulance.

4.10.2 The types of equipment described in 4.10.1 shall be furnished with protective looms, grommets, or other devices at each point where they pass through body panels or structural members or wherever they lie against a sharp metal edge.

4.10.3 A through-the-frame connector shall be permitted to be used in place of protective looms or grommets.

4.11* Ambulance Performance.

4.11.1 The ambulance shall meet the requirements of this standard at elevations up to 2000 ft (600 m) above sea level.

4.11.2* The ambulance shall meet all the requirements of this standard while stationary on a grade of 6 percent in any direction.

4.11.3* Where temperature requirements are not otherwise specified, the ambulance shall be designed to function in ambient temperature conditions between -20°F and 110°F (-29°C and 43°C).

4.11.3.1 All interior systems, components and permanently attached equipment shall function satisfactorily over a temperature range of 32°F to 95°F (0°C to 35°C).

4.11.3.1.1 Compliance of the equipment function shall be validated by testing a substantially similar ambulance in accordance with Section 9.11.

4.11.3.1.2 The ambulance and all systems, components, and equipment shall be capable of being stored at an ambient temperature between 32°F to 95°F (0°C to 35°C) without damage or deterioration.

4.11.4 The ambulance shall be capable of being driven for at least 250 mi (402 km) without refueling.

4.11.5 The vehicle shall be capable of three fordings, without water entering patient and equipment compartments while being driven through a minimum of 8 in. (203 mm) of water, at speeds of 5 mph (8 km/hr), for a distance of at least 100 ft (30 m).

4.12 Roadability.

4.12.1 The ambulance, when loaded to its GVWR shall be capable of the following performance while on dry, paved roads that are in good condition:

- (1) From a standing start, the ambulance shall be able to attain a speed of 55 mph (88 km/hr) within 25 seconds on a level road.
- (2) The ambulance shall be able to maintain a speed of at least 5 mph (8 km/hr) on any grade up to 35 percent.
- (3) The ambulance shall be able to maintain a speed of at least 55 mph (88 km/hr) on any grade up to 3 percent.

4.12.2 The determination shall be made by actual test or original equipment manufacturer's (OEM) certified computer prediction.

4.12.3 The maximum top speed of the ambulance shall not exceed either 77 mph (124 km/hr) or the manufacturer's maximum service speed rating for the tires installed on the ambulance, whichever is lower.

4.12.4* The ambulance shall be capable of a sustained speed of not less than 65 mph (105 km/hr) over dry, hard surfaced, level roads, at sea level, and passing speeds of 70 mph (112 km/hr) when tested under normal ambient conditions.

4.13 Serviceability.

4.13.1 The ambulance shall be designed so that all the manufacturer's recommended routine maintenance checks of lubricant and fluid levels can be performed by the operator without the need for hand tools.

4.13.2 Special Tools.

4.13.2.1 Where special tools are required for routine service on any component of the ambulance, such tools shall be provided with the ambulance.

4.13.2.2 Where the purchaser is purchasing multiple ambulances under the same contract, the purchaser shall specify the number of tools required.

4.13.3 Ambulance components that interfere with repair or removal of other major components shall be attached with fasteners, such as cap screws and nuts, so that the components can be removed and installed with ordinary hand tools.

4.13.4 These components shall not be welded or otherwise permanently secured in place.

4.14 Tests on Delivery.

4.14.1 If acceptance tests are conducted at the point of delivery, they shall not be performed in a manner that requires the ambulance or a component to operate outside its designed operating range.

4.14.2 Certification from OEM and individual equipment manufacturers are acceptable providing they are not altered.

4.15* Documentation.

4.15.1 Any documentation delivered with the ambulance shall be permitted to be in printed format, electronic format, audiovisual format, or a combination thereof.

4.15.2* The ambulance manufacturer shall calculate the load distribution plan for the ambulance, and that load distribution plan be delivered with the ambulance.

4.16 Data Required of Contractor.

4.16.1 Ambulance Documentation. The contractor shall deliver with the ambulance at least one copy of the following documents:

- (1) The manufacturer's record of ambulance construction details, including the following information:
 - (a) Owner's name and address
 - (b) Ambulance manufacturer, model, and serial number
 - (c) Chassis make, model, and vehicle identification number (VIN)
 - (d) GAWR of front and rear axles and GVWR
 - (e) Front tire size and total rated capacity in pounds (kilograms)
 - (f) Rear tire size and total rated capacity in pounds (kilograms)
 - (g) Type of fuel and fuel tank capacity

(h) Electrical system voltage and alternator output in amps

(i) Paint manufacturer and paint number(s)

(j) Company name and signature of responsible company representative

(k) Documents from a certified scale showing curb weight on the front axle and rear axle(s) (without personnel and equipment)

(2) Certification of compliance of the optical warning system (*see 7.9.16*)

(3) Siren manufacturer's certification of the siren (*see 7.10.1.1*)

(4) Written load analysis and results of the electrical system performance tests (*see Section 9.1 and Section 9.2*)

(5) Certification of slip resistance of all exterior stepping, standing, and walking surfaces (*see Section 6.12*)

4.16.2 Operations and Service Documentation.

4.16.2.1 The contractor shall deliver with the ambulance at least one set of complete operation and service documentation covering the completed ambulance as delivered and accepted.

4.16.2.2 The documentation shall address at least the inspection, service, and operations of the ambulance and all major components thereof.

4.16.2.3* The contractor shall also deliver with the ambulance the following documentation for the entire ambulance and each major operating system or major component of the ambulance:

- (1) Manufacturer's name and address
- (2) Country of manufacture
- (3) Source for service and technical information
- (4) Parts replacement information
- (5) Descriptions, specifications, and ratings of the chassis
- (6) Wiring diagrams for low voltage and line voltage ambulance-specific systems to include the following information:
 - (a) Circuit logic for all electrical components and wiring
 - (b) Circuit identification
 - (c) Connector pin identification
 - (d) Zone location of electrical components
 - (e) Safety interlocks
 - (f) Alternator battery power distribution circuits
 - (g) Input/output assignment sheets or equivalent circuit logic implemented in multiplexing systems
- (7) Lubrication charts
- (8) Operating instructions for the chassis and any major components
- (9) Instructions regarding the frequency and procedure for recommended maintenance
- (10) Overall ambulance operating instructions
- (11) Safety considerations
- (12) Limitations of use
- (13) Inspection procedures
- (14) Recommended service procedures
- (15) Troubleshooting guide
- (16) Ambulance body, chassis, and other component manufacturer's warranties
- (17) Special data required by this standard
- (18) Material safety data sheet (MSDS) for any fluid that is specified for use on the ambulance module

4.16.3 Certification and Payload Signage.

4.16.3.1* All ambulances shall have a certification and payload label as shown in Figure 4.16.3.1.

4.16.3.2 The label shall be mounted on the body (module) interior in a conspicuous location.

4.16.3.3 The complete payload calculation in Figure 4.16.3.1 shall be provided with the ambulance.

Ambulance Data	
Manufactured By _____	Mo./Yr. _____
Address _____	
City _____	State _____ Zip _____
VIN _____	Job No. _____
Chassis Model _____	Statement of Exception Applies _____
Vehicle Type _____	Usable Payload (lbs)* _____
<p>This ambulance is certified by the manufacturer to conform to the edition of NFPA 1917 Standard for Automotive Ambulance in effect on the date the ambulance as contracted for subject to any applicable statement of exception as mandated by this standard.</p> <p>*Usable payload is the weight of the loose equipment, occupants, and cot as defined by NFPA 1917 Standard for Automotive Ambulances that can be carried in this ambulance without exceeding the GVWR.</p>	

FIGURE 4.16.3.1 Certification and Payload Label.

4.17 Statement of Exceptions. The entity responsible for final assembly of the ambulance shall deliver with the ambulance either a certification that the ambulance fully complies with all requirements of this standard or, alternatively, a Statement of Exceptions specifically describing each aspect of the completed ambulance that is not fully compliant with the requirements of this standard at the time of delivery.

4.17.1 The Statement of Exceptions shall contain, for each noncompliant aspect of the ambulance or missing required item, the following information:

- (1) A separate listing of the section(s) of the applicable standard for which compliance is lacking
- (2) A description of the particular aspect of the ambulance that is not in compliance therewith or required equipment that is missing
- (3) A description of the further changes or modifications to the delivered ambulance that must be completed to achieve full compliance
- (4) Identification of the entity that will be responsible for making the necessary post-delivery changes or modifications or for supplying and installing any missing required equipment to the ambulance to achieve full compliance with this standard

4.17.2 Prior to, or at the time of, delivery of the ambulance, the Statement of Exceptions shall be signed by an authorized agent of the entity responsible for final assembly of the ambulance and by an authorized agent of the purchasing entity, indicating mutual understanding and agreement between the parties regarding the substance thereof.

4.17.3 An ambulance that is delivered subject to a Statement of Exceptions other than a certification of full compliance shall not be placed in emergency service until the ambulance has been modified as necessary to accomplish full compliance with this standard.

Chapter 5 Chassis

5.1 Carrying Capacity.

5.1.1 The manufacturer shall establish the required GVWR during the design of the ambulance using the method and values specified in Table 5.1.1.

5.1.2 The manufacturer shall design the ambulance such that the completed ambulance, when loaded to its required GVWR with all loose equipment distributed as close as practical to its intended in-service configuration, does not exceed the GVWR or GAWR of the chassis.

Table 5.1.1 Required GVWR Calculation

Component		Weight (lb)
Chassis		
Ambulance body complete		
Automotive fluids		
Permanently mounted equipment		
Loose equipment (Use one of these values unless the required loose equipment is specified by the purchaser)	Type I	750
	Type I-AD	1250
	Type II	500
	Type III	750
	Type III-AD	1250
Belted occupant seating positions	(No. Seats) x	171
Cot patient		171
Cot	Standard cot	100
	Power cot	150
Spare capacity		200
Minimum GVWR Required		

5.1.3 Label.

5.1.3.1 The ambulance manufacturer shall provide a high-visibility label in a location visible to the driver while seated.

5.1.3.2* The label shall show the height of the completed ambulance in feet and inches (meters), and the GVWR in tons (metric tons).

5.2* Weight Distribution.

5.2.1 Longitudinal Weight Distribution.

5.2.1.1 When the ambulance is loaded to its GVWR, the front-to-rear weight distribution and vertical center of gravity shall be within the limits set by the chassis manufacturer.

5.2.1.2 The front GAWR shall be not less than 20 percent of the GVWR.

5.2.1.3 The rear GAWR shall be not less than 50 percent of the GVWR.

5.2.2* Lateral Weight Distribution. The vehicle, when loaded to its GVWR shall have a side-to-side tire load variation of no more than 5 percent of the total tire load for that axle.

5.2.3 The front axle loads shall not be less than the minimum axle loads specified by the chassis manufacturer under full load and all other loading conditions.

5.2.4 Vehicle and component ratings shall be the manufacturer's published ratings and shall not be modified without written authorization from the OEM.

5.2.5 The manufacturer shall design the ambulance to comply with the GAWR, the overall GVWR, and the chassis manufacturer's load balance guidelines.

5.3 Engine and Engine System Design.

5.3.1 Cold Start Performance Requirements.

5.3.1.1 The chassis engine shall start and run for 5 minutes without stalling at 0°F (-18°C) without the use of external power or starting fluids and without the aid of engine block preheating devices (except glow plugs or combustion air pre-heater).

5.3.1.2 Compliance shall be validated by testing a substantially similar ambulance in accordance with Section 9.22.

5.3.2 Indicators shall be provided to alert the driver to high engine temperature or low oil pressure conditions.

5.3.3 An engine hourmeter shall be provided.

5.3.4 Idle reduction engine shutdown device shall be disabled if provided in accordance with federal and state exemptions.

5.4 Engine Speed Auxiliary Control Device.

5.4.1* An engine speed auxiliary control device (high-idle switch, throttle, or automatic voltage monitor) shall be installed to allow an increase in the engine speed when the ambulance is parked.

5.4.2 An interlock shall prevent the operation of the engine speed auxiliary control device unless the parking brake is engaged and the transmission is in neutral or park, or the parking brake is engaged and the engine is disengaged from the drive wheels.

5.5 Cooling System.

5.5.1* The engine's cooling system shall maintain a temperature at or below the engine manufacturer's maximum coolant temperature.

5.5.2 Compliance of the engine's cooling system shall be validated by testing a substantially similar ambulance in accordance with Section 9.14.

5.6 Exhaust System.

5.6.1 The exhaust piping and discharge outlet shall be located or shielded so as not to expose any portion of the ambulance or equipment to excessive heating.

5.6.2 Where parts of the exhaust system are exposed so that they are likely to cause injury to operating personnel, protective guards shall be provided.

5.6.3 The tailpipe outlet shall not terminate within 12 in. (300 mm) of the vertical axis of the fuel fill opening, oxygen storage, or patient entry doors when these features are located on the same side of the vehicle.

5.7 Braking System.

5.7.1 All brakes shall be readily accessible for inspection.

5.7.2 Where air-actuated braking systems are provided, they shall include the following:

- (1) An automatic moisture ejector
- (2) An air dryer
- (3) A pressure protection valve to prevent all air-operated accessories from drawing air from the air brake system when the air system's pressure drops below a pressure setting no lower than 80 psi (550 kPa)

5.7.3* Any time a secondary braking device such as transmission retarders or exhaust restriction devices are used, they shall have a switch to turn them off during adverse road conditions.

5.8 Suspension.

5.8.1* With the exception of the OEM's furnished and installed components, the ambulance shall provide not less than the following clearance, measured in accordance with SAE J689:

- (1) Approach angle of 10 degrees
- (2) Ramp breakover of 10 degrees
- (3) Departure angle of 10 degrees

5.8.2* A traction control feature shall be provided.

5.8.3 Shock absorbers shall be furnished on the front and rear axles.

5.8.4 Any ambulance with an air-ride suspension shall include an air dryer and automatic heated moisture ejection device to ensure that the air system is provided with dry air to protect the suspension control components.

5.9 Wheels and Tires.

5.9.1 Hub caps or wheel covers shall not obscure the wheel nuts so that they can be readily observed for daily inspection.

5.9.2 Mud flaps.

5.9.2.1 Mud flaps, at least as wide as the tire(s), shall be provided behind the front and rear wheels and shall be reinforced at the point of attachment to the vehicle.

5.9.2.2 Mud flaps shall be permitted to be incorporated into the running boards.

5.9.3 Clearance for tire chains shall be provided for rear wheels in accordance with SAE J683, *Tire Chain Clearance — Trucks, Buses (Except Suburban, Intercity, and Transit Buses), and Combinations of Vehicles*.

5.9.4 Bodies designed with wheel openings shall have the rear wheels centered, within +/-2 in. (+/-52 mm) of those openings.

5.9.5* Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.

5.10* Vehicle Stability. If the ambulance is equipped with a stability control system, the system shall have, at a minimum, a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls.

5.11 Bumpers.

5.11.1* A front bumper shall be furnished in the front of the chassis that is at least the equivalent of the chassis manufacturer's OEM bumper.

5.11.2 The rear of the ambulance shall be furnished with a bumper that extends to within 6 in. (152 mm) of each side of the ambulance.

5.11.2.1 The rear bumper shall be secured to the vehicle's chassis frame.

5.11.2.2 Type I and Type III vehicle's rear bumper shall be provided with an integrated step.

5.11.2.3 The step shall be designed to prevent the accumulation of mud, ice, or snow and shall be made of anti-skid open grating material.

5.11.2.4 The step shall not be located or exposed to the interior of the ambulance when the door(s) is closed.

5.11.2.5 The step shall be at least the width of the door opening for which it is provided.

5.11.2.6 The stepping surface shall have a minimum depth of 5 in. (127 mm) and a maximum depth of 10 in. (254 mm)

5.11.2.7 If the step protrudes more than 7 in. (178 mm) from the rear of the vehicle, a fold-up step shall be furnished.

5.11.2.8 Stepping Surface.

5.11.2.8.1 The rear stepping surface shall withstand a load of 500 lb (227 kg) with no more than 1.0 in. (25.4 mm) of deflection or 0.25 in. (6.4 mm) of permanent deformation.

5.11.2.8.2 Compliance of the rear step surface shall be validated by testing a substantially similar ambulance or bumper and step structure in accordance with Section 9.18.

5.11.2.8.3 The distance from the road surface to the top surface of the first step shall not exceed 22 in. (559 mm) with the vehicle loaded to its GVWR and/or the suspension in the kneeling condition.

5.11.2.8.4 Steps shall be provided in the door openings.

5.11.2.8.5 Step wells shall be illuminated.

5.11.2.8.6 Step surfaces shall be constructed with anti-slip material.

5.11.2.8.7* All steps shall have a minimum area of 35 in.² (22,580 mm²), and shall be of such a shape that a 5 in. (125 mm) diameter disk does not overlap any side when placed on the step.

5.12 Cab Seal.

5.12.1 If the cab and patient compartment are separate enclosures, the cab shall be provided with a sealing device.

5.12.2 The seal shall be fabricated from a material resistant to ozone, sunlight, oil, and fungus.

5.12.3 The seal shall remain flexible in temperatures between -20°F and 110°F (-29°C and 43°C).

5.12.4 The seal shall be designed for proper fit and finish and be able to absorb lateral, vertical, and torsional displacement due to body/cab movement.

5.13 Front Seats.

5.13.1 Front cab seating for the driver and at least one passenger shall be provided.

5.13.2 The driver's seat shall have the OEM's full, unobstructed seat track travel range of longitudinal adjustment and a minimum of 30 percent of the range of inclination, but not less than the angle furnished on the OEM's standard nonreclining high back seat.

5.14* Mirrors.

5.14.1 Dual side view mirrors having a combination flat and convex mirror system shall be furnished.

5.14.2 All primary side view mirrors used by the driver shall be adjustable from the driver's position.

5.14.3 Hardware and mirror heads shall have a corrosion-resistant exterior finish.

5.15 Cab Integrity. Cabs on ambulances with a GVWR greater than 26,000 lb (11,800 kg) shall meet the requirements of one of the following sets of standards:

- (1) SAE J2420, *COE Frontal Strength Evaluation — Dynamic Loading Heavy Trucks*, and SAE J2422, *Cab Roof Strength Evaluation — Quasi-Static Loading Heavy Trucks*
- (2) ECE Regulation number 29, *Uniform Provisions Concerning the Approval of Vehicles with Regard to the Protection of the Occupants of the Cab of a Commercial Vehicle*

Chapter 6 Patient Compartment

6.1 Patient Compartment Configuration. The patient compartment shall provide a minimum of 275 ft³ (7.7 m³) of space less volume for cabinets, while complying with 6.1.1 through 6.1.2.

6.1.1 A minimum of 10 in. (254 mm) shall be provided, from the nearest edge of the cot mattress to the loading door(s).

6.1.2 The compartment shall provide a minimum of 12 in. (300 mm) of clear aisle walkway on at least one side of the patient cot.

6.2 Mounting. If the body is of a modular construction, it shall be mounted per the allowed and/or recommended methods of the chassis manufacturer.

6.3 Structural Integrity — Roof Loading.

6.3.1 Any Type I ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to the roof of the vehicle's body structure, validated by testing a substantially similar ambulance in accordance with Section 9.1.

6.3.1.1 The modular body shall be tested in accordance with SAE J2422 and ECE R29.

6.3.2 Any Type II ambulance body shall withstand a force equal to 1.5 times the curb weight of the vehicle applied to the roof of the vehicle's body structure, validated by testing a substantially similar ambulance in accordance with Section 9.1.

6.3.3 Any Type III ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to the roof of the vehicle's body structure, validated by testing a substantially similar ambulance in accordance with Section 9.1.

6.3.4 The downward vertical movement at any point on the roof application plate shall not exceed 5.12 in. (130 mm).

6.3.5 Each exterior door of the vehicle shall be capable of opening and closing during the full application of the force and after release of the force.

6.3.6 No structural damage to any load bearing or supporting members (i.e., torn or broken material, broken welds, popped or sheared body rivets, bolts, and/or fasteners) shall be evident during the application of the force and after the release of the force.

6.4 Body Structural Integrity — Side Loading.

6.4.1 Any Type I ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to either the driver or passenger side of the vehicle's body structure, validated by testing a substantially similar ambulance in accordance with Section 9.1.

6.4.2 Any Type III ambulance body shall withstand a force equal to 2.5 times the curb weight of the vehicle applied to either the driver or passenger side of the vehicle's body structure, validated by testing a substantially similar ambulance in accordance with Section 9.1.

6.5 Body Sealing.

6.5.1 Sealing Out Water.

6.5.1.1 There shall be no water leakage into the cab, any exterior compartment, the patient compartment, or through any door seal, light seal, or cab-to-module seal.

6.5.1.2 Compliance of the body sealing out water shall be validated by testing each finished ambulance in accordance with Section 9.10.

6.5.2 Sealing Out Exhaust Gas. The body shall be sealed and vented so that the interior carbon monoxide level does not exceed 10 ppm of carbon monoxide (CO) above ambient conditions.

6.6 Wheel Housings.

6.6.1 Wheel housings of modular bodies shall include metal or plastic splash shields between the body wheel housing and the wheels extending over the top of the tires to the bottom of the body side skirting.

6.6.2 Wheel house openings shall allow for tire chain usage and easy tire removal and service and conform to SAE J683.

6.6.3 OEM's standard wheel housings on Type II ambulances shall be acceptable.

6.7 Patient Compartment to Cab Partition.

6.7.1 A bulkhead partition shall be provided between the driver and patient compartments.

6.7.2 The partition(s) shall be located directly behind the driver and cab passenger seats when in the rearmost position.

6.7.3 The partition shall extend from the floor to the ceiling.

6.7.4 The partition shall be wide enough to cover the width of each cab seat excluding arm rests.

6.7.5* The ambulance and body bulkheads shall have an aligned window opening of at least 150 in.² (96,780 mm²) or other means of visual and hands-free audio communication.

6.7.6 If equipped with a window in the cab or body, it shall be of the sliding type, aligned, and connected with the modular body window opening.

6.7.7 The window shall be latchable from the cab side and shall be a transparent, shatterproof panel.

6.8 Access Handrails or Handholds.

6.8.1 Interior or exterior access handrails or handholds shall be provided at each entrance to a driving or crew compartment and at each position where steps or ladders for climbing are located.

6.8.2 Exterior access handrails shall be constructed of or covered with a slip-resistant (i.e., cross-hatched stainless steel, rubberized, etc.), noncorrosive material.

6.8.3 Exterior access handrails shall be between 1 in. and 1 5/8 in. (25 mm and 42 mm) in diameter and have a minimum clearance between the handrails and any surface of at least 2 in. (50 mm).

6.8.4 All exterior access handrails shall be designed and mounted to reduce the possibility of hand slippage and to avoid snagging equipment or clothing.

6.8.5 Access handrails supplied by the chassis manufacturer on a commercial chassis shall be permitted to be used to meet the requirements of this section.

6.8.6 Handrail Testing.

6.8.6.1 Handrails shall withstand a force of 300 lb (136 kg) applied in any direction without detaching, loosening, or permanently deforming.

6.8.6.2 Compliance of the handrail shall be validated by testing a substantially similar ambulance or body structure in accordance with Section 9.8.

6.9 Patient Compartment Entry Doors.

6.9.1 Door handles shall be designed and installed to protect against accidental or inadvertent opening.

6.9.2 Entry doors and door openings shall be designed to minimize inadvertent snagging of apparel.

6.9.3 Door latches, hinges, and hardware furnished by OEM and final stage ambulance manufacturers (FSAMs) shall meet the performance requirements of FMVSS 206.

6.9.4 When doors are open, the hinges, latches, and door-checks shall not protrude into the access area.

6.9.5 Doors shall have hardware or devices to prevent inadvertent closing.

6.9.6 One externally operated lock for each door opening shall be provided.

6.9.7* An internal lock on each patient compartment primary entry door shall be provided.

6.9.8 If a key lock is provided, all patient compartment entry door locks shall be identically keyed.

6.9.9 Doors shall be equipped with not less than 250 in.² (161,300 mm²) of safety glass area per door.

6.9.10 Doors shall be designed to prevent leakage of exhaust fumes, dust, water, and air into the patient compartment.

6.9.11 Doors shall, in addition to meeting applicable FMVSS standards, withstand the loads on the latches and hinges listed in Table 6.9.11 when tested in accordance with Section 9.2.

Table 6.9.11 Loads Withstood on Ambulance Door Latches and Hinges

	Side Door		Rear Door	
	Transverse Load	Longitudinal Load	Transverse Load	Longitudinal Load
Fully latched position	2500 lbf (11,120 N)	2500 lbf (11,120 N)	2500 lbf (11,120 N)	2500 lbf (11,120 N)
Secondary latched position	1500 lbf (6672 N)	1500 lbf (6672 N)	1500 lbf (6672 N)	1500 lbf (6672 N)
Hinge	2500 lbf (11,120 N)	2500 lbf (11,120 N)	2500 lbf (11,120 N)	2500 lbf (11,120 N)

6.9.11.1 Compliance of the door shall be validated by testing on a patient compartment sample of a substantially similar design.

6.9.11.2 During these tests, the door(s) or its retention components shall not do either of the following:

- (1) Open at any time during the test procedure
- (2) Fail at the latch, striker(s), hinge, or their points of attachment to the door or the body framework

6.10 Means of Escape.

6.10.1 Any interior area to be occupied by personnel shall have a minimum of two means of escape.

6.10.2 Each means of escape opening shall be a minimum of 24 in. × 24 in. (610 mm × 610 mm).

6.11 Exterior Stepping Surfaces and Interior Steps.

6.11.1 All materials used for exterior surfaces designated as stepping, standing, and walking areas and all interior steps shall have a minimum slip resistance in any orientation of 0.68 when tested wet using the English XL tester in accordance with the manufacturer's instructions or 0.52 when tested wet using the Brungraber Mark II tester in accordance with the manufacturer's instructions.

6.11.2 A standard Neolite® test sensor shall be used with both the English XL tester and the Brungraber Mark II tester.

6.11.3 Sampling Strategy.

6.11.3.1 For uniformly patterned materials, at least 16 readings shall be taken on each sample.

6.11.3.1.1 Each reading shall be taken 90 degrees clockwise from the previous orientation, resulting in at least four readings in each orientation.

6.11.3.1.2 The readings shall be averaged and reported as the slip resistance for the material.

6.11.3.2 For directionally patterned materials, at least 32 readings shall be taken on each sample.

6.11.3.2.1 Each reading shall be taken 45 degrees clockwise from the previous orientation, resulting in at least four readings in each orientation.

6.11.3.2.2 The four readings in each direction shall be averaged and reported as the slip resistance for the material in that orientation.

6.11.4 The contractor shall deliver with the ambulance a certification that all materials used for exterior surfaces designated as stepping, standing, and walking areas meet the requirements of Section 6.11.

6.12 Exterior Storage.

6.12.1 Doors shall provide secure closure properties.

6.12.2 All hinged doors wider than 14 in. (356 mm) and excluding battery compartments shall have positive hold-open devices that permit one-hand closure.

6.12.3 Hardware shall be rust resistant.

6.12.4 All primary exterior compartment doors shall have latches with locks.

6.12.5 All exterior compartments greater than 4 ft³ (0.11 m³) shall be automatically illuminated when opened and shall meet the requirements of 7.11.7.1.

6.12.6 Any absorbent material such as carpeting, fabric, or inside/outside plastic-type carpeting, that resists cleaning and decontamination shall not be used.

6.13 Floor.

6.13.1 The patient compartment floor shall be flat, except when the area near the rear entrance door is sloped for a lower entering height.

6.13.2 With the exception of cot retention hardware, the floor shall be unencumbered in the door(s) access and work area.

6.13.3 The floor shall be designed to eliminate voids or pockets where water or moisture can become trapped.

6.13.4 The subfloor construction shall cover the full length and width of the patient compartment.

6.13.5 If plywood is used in the subfloor, it shall be marine or exterior grade.

6.13.6 If the ambulance has a modular body, the subfloor shall be designed to prevent water penetration and shall include a heat shield.

6.13.7 Body Floor Structural Integrity.

6.13.7.1 If the subfloor is constructed of plywood, the plywood it shall have an American Plywood Association (APA) floor rating of 16 in. (406 mm) on center or better.

6.13.7.2 If the subfloor is constructed of other than plywood, it shall be tested using a 3 in. (76 mm) disk and have a maximum of 0.125 in. (3 mm) deflection at 200 lb (91 kg) force and a minimum ultimate load of 400 lb (181 kg) for a 16 in. (406 mm) on center load.

6.13.7.2.1 The maximum floor structure spacing shall be used for testing.

6.13.7.2.2 Compliance of the floor structural integrity shall be validated by testing the midpoint of the longest unsupported section of a substantially similar ambulance or floor structure in accordance with the concentrated static load test procedure in ASTM E 661.

6.13.7.2.2.1 If panel joints occur at the maximum span location, then they should be present in the test sample as a worst-case scenario.

6.13.7.3 A drawing of the floor structure and fastening schedule of the subfloor material to the structure is required in the certification report.

6.14 Floor Covering.

6.14.1 Floor covering shall be nonpermeable, seamless, and easily cleaned.

6.14.2 The floor covering shall cover the entire length and width of the compartment's exposed floor.

6.14.3 Joints, where the floor covering meets the sidewalls, shall be sealed and bordered with corrosion-resistant cove molding, or the floor covering shall extend at least 3 in. (76 mm) up the sidewalls.

6.15 Insulation.

6.15.1 Where the patient compartment is insulated, it shall be insulated with a nonsettling type, verminproof, mildewproof, nontoxic, and nonhygroscopic material that meets the requirements of FMVSS 302.

6.15.2 If fiberglass insulation is used, it shall be protected from exposure to water.

6.16* Interior Storage.

6.16.1 The interior of the patient compartment shall provide enclosed storage cabinetry, compartment space, and shelf space.

6.16.2 Compartment(s) under the floor, with opening panel(s) inside the patient compartment, shall not be acceptable.

6.16.3 When furnished, top opening squad bench lids shall be fitted with an automatic hold-open device and a quick-release slam-type latching device when closed.

6.16.4 Storage compartment door handles, where provided, shall not protrude more than 1 in. (25 mm) if located 14 in. (356 mm) above the floor or higher and not protrude more than 2 in. (51 mm) if located lower than 14 in. (356 mm) above the floor.

6.16.5 Doors shall be designed to remain closed during transport.

6.16.6 Storage compartments shall be firmly fastened to the body structure.

6.17 Interior Surfaces.

6.17.1 The interior of the body shall be free of all sharp projections and sharp corners.

6.17.2 All hangers or supports for equipment and devices shall be mounted as flush as possible with the surrounding surface.

6.17.3 The finish of the entire patient compartment and exterior storage, including interiors of storage cabinets, shall be as follows:

- (1) Impervious to soap, water, body fluids, and disinfectants
- (2) Mildew resistant
- (3) Fire resistant in compliance with FMVSS 302
- (4) Able to be cleaned and disinfected

6.17.4 Countertop horizontal surface shall be seamless and impervious to contaminants.

6.17.5 All edges that meet vertical cabinets shall be sealed.

6.18 Equipment Mounting.

6.18.1 Medical Supplies and Equipment Storage Mounting. Supplies, devices, tools, and so forth shall be stored in enclosed compartments or fastened to secure them during vehicle motion.

6.18.2 Equipment weighing 3 lbs (1.36 kg) or more mounted or stored in a driving or patient area shall be contained in an enclosed compartment capable of containing the contents when a 10G force is applied in the longitudinal, lateral, or vertical axis of the vehicle, if the equipment is secured in a bracket(s) or mount that can contain the equipment when the equipment is subjected to those same forces.

6.18.3 Each patient compartment cabinet shall be permanently labeled on the exterior of the cabinet with its maximum load capacity.

6.19* Waste and Sharps Disposal. A receptacle for general waste and an OSHA-compliant container for sharps disposal shall be provided in the patient compartment.

6.20 Holder for Intravenous Fluid Containers.

6.20.1 One mounted device specifically designed for holding and securing an IV fluid container against accidental release during normal transport activity shall be provided.

6.20.2 The device shall not protrude more than 1.0 in. (25 mm) in the closed position.

6.21 Patient Compartment Seats.

6.21.1 Seat Integrity. Any seat mounted on an adjustable seat device shall be dynamically tested along the direction of the adjustment using the crash pulse in SAE J2917.

6.21.1.1 The test shall be conducted with the seat oriented in the direction of adjustment for both the forward facing and rear facing directions.

6.21.1.2 During and after the test, the seat shall remain securely attached to the adjustment device.

6.21.1.3 Seat belt anchorages on side facing seats shall be tested in accordance with the strength requirements of FMVSS 210.

6.21.2* SCBA Storage. SCBA packs shall not be stored in the seat backs of seats in the patient compartment.

6.21.3 Seat Belts.

6.21.3.1* Each designated seating position shall be provided with a seat belt.

6.21.3.2 Ambulances above 19,500 lb (8845 kg) GVWR shall provide seat belts in accordance with 6.21.3.2.1 and 6.21.3.2.2.

6.21.3.2.1 The effective seat belt web length for a Type 1 lap belt for pelvic restraint shall be a minimum of 60 in. (1524 mm) with the seat adjusted all the way back and down when measured using the following procedure as shown in Figure 6.21.3.2.1:

- (1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (see line 1 in Figure 6.21.3.2.1)
- (2) Locate point A on line 1 at the outside of the seat on the retractor side of the seat
- (3) Locate point C on line 1 at the outside of the seat on the receiver side of the seat
- (4) Locate point D at the tip of the receiver
- (5) Pull the seat belt webbing entirely out of the retractor and measure along the webbing between point A and the male seat belt buckle
- (6) Record this length as AD
- (7) Measure from point C to point D and record this length as CD
- (8) Add AD and CD for the effective seat belt web length.

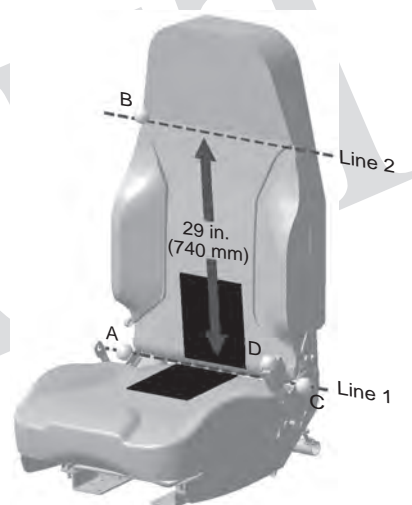


FIGURE 6.21.3.2.1 Dimension Lines for Measuring Seat Belt Effective Length.

6.21.3.2.2 The effective seat belt web length for a Type 2 pelvic and upper torso restraint-style seat belt assembly shall be a minimum of 110 in. (2800 mm) with the seat adjusted all the way back and down when measured using the following procedure:

- (1) Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (see line 1 in Figure 6.21.3.2.1)
- (2) Locate an imaginary line parallel with line 1 and lying on the center of the seat back surface 29 in. (740 mm) from line 1 (see line 2 in Figure 6.21.3.2.1)
- (3) Locate point A on line 1 at the outside of the seat on the retractor side of the seat
- (4) Locate point B on line 2 at the shoulder strap edge of the seat back
- (5) Locate point C on line 1 at the outside of the seat on the receiver side of the seat
- (6) Locate point D at the tip of the receiver
- (7) Pull the seat belt webbing entirely out of the retractor and measure along the webbing between points A and B
- (8) Record this length as AB
- (9) Measure from point C to point D and record this length as CD
- (10) Add AB and 2CD for the effective seat belt web length

6.21.3.3 Signs that read "Occupants Must Be Seated and Belted When Ambulance Is in Motion" shall be visible from each seated position.

6.21.4 Seated Head Clearance.

6.21.4.1 The minimum seat-to-ceiling dimension from the top surface of the seat bottom cushion to the nearest overhead obstruction for each designated seating position shall be 43 in. (1092 mm).

6.21.4.2 The measurement shall be in accordance with Section 9.25.

6.21.5 Seat Adjustment. When independent horizontal seat adjustment is provided, it shall be fully adjustable within 10 seconds.

6.21.6 Seating Position Width. Each designated seating space shall have a minimum width of 24 in. (610 mm) measured from the seat surface to 43 in. (1092 mm) above the seating surface.

6.21.7 Seat Size.

6.21.7.1 Seat bottom cushions shall be a minimum of 18 in. (460 mm) in width.

6.21.7.2 Seat bottom cushions shall be between 15 in. and 19 in. (380 mm and 483 mm) from the front of the cushion to the face of the seat back.

6.21.7.3 A back cushion that extends from the seat bottom cushion vertically at least 7 in. (460 mm) and that is a minimum of 18 in. (460 mm) wide at the base shall be provided.

6.21.7.4 Each seat shall provide back and head support beginning no more than 24 in. (610 mm) above the seat bottom cushion and continuing to at least 36 in. (914 mm) above the seat bottom cushion.

6.21.7.5 For any seat not covered by FMVSS 202, the top of the seat back or head rest shall be a minimum of 10 in. (254 mm) in width.

6.21.8 Access to Patient.

6.21.8.1 If the primary patient care seat is at the patient torso position, it shall be capable of being adjusted such that the nearest edge of the seat bottom cushion is within 6 in. (152 mm) of the nearest edge of the patient cot.

6.21.8.2 The fore-aft position of the seat shall line up within 6 in. (152 mm) of the centerline of the torso as defined by the cot manufacturer.

6.21.8.3 If the primary patient care seat is at the patient head position, it shall be capable of being adjusted such that the nearest edge of the seat bottom cushion is within 6 in. (152 mm) of the nearest edge of the patient cot.

6.21.8.4 If the designated primary patient care seat is the patient head position, the longitudinal centerline of the seat shall line up within 11 in. (280 mm) of the longitudinal centerline of the cot.

6.21.9 Child Seating Restraints.

6.21.9.1 Any seat with a built-in system suitable for transporting a child or infant shall not be oriented in a side-facing direction during transport.

6.21.9.2 If the ambulance is designed to transport infants in a seat, the ambulance shall include an infant restraint seat or have provisions to accommodate an infant car seat.

6.21.9.3 If the ambulance is designed to transport children in a seat, it shall include a child restraint seat or have provisions to accommodate a child car seat.

6.22 Patient Cot Retention.

6.22.1 Each patient cot retention system shall not fail or release when subjected to the greater of the cot manufacturers recommended retention force or a minimum retention force of 2200 lb (9786N) applied in the longitudinal, lateral, and vertical direction.

6.22.2 Compliance of the cot retention system shall be validated by testing a sample retention device using a substantially similar ambulance or body structure in accordance with Section 9.4.

6.23* HVAC. Connecting hoses for the heating and air conditioning system shall be supported by rubber-insulated metal clamping devices at least every 18 in. (457 mm).

6.23.1 Heating.

6.23.1.1 A heating system shall be provided capable of raising the interior temperature from 32°F to 68°F (0°C to 20°C) within 30 minutes.

6.23.1.2 Compliance of the heating system shall be validated by testing a substantially similar ambulance in accordance with Section 9.12.

6.23.2 Air Conditioning.

6.23.2.1 An air conditioning system shall be provided that is capable of lowering the interior temperature from 95°F to 78°F (35°C to 25°C) at a minimum of 40 percent relative humidity within 30 minutes.

6.23.2.2 Compliance of the air conditioning system shall be validated by testing a substantially similar ambulance in accordance with Section 9.12.

6.23.3 Ventilation.

6.23.3.1 Ventilation system(s) in the patient compartments shall provide a change of ambient air with the vehicle stationary.

6.23.3.2 Ventilation shall be separately controlled within the cab and patient compartments.

6.23.3.3 Fresh air intakes shall not be located near the engine exhaust outlet.

6.23.3.4 A fresh air exhaust fan shall be provided.

6.24 Interior Noise.

6.24.1 The interior sound level in the patient compartment shall not exceed 80 decibels.

6.24.2 Compliance of the patient compartment interior sound shall be validated by testing a substantially similar ambulance in accordance with Section 9.6.

6.25* Reflective Striping.

6.25.1* A retroreflective stripe or combination of stripes shall be affixed to the ambulance in the following proportions:

(1) 25 percent of the width of the front of the ambulance visible when approaching from the front

(2) 50 percent of the overall ambulance length visible when approaching from each side

6.25.2 The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total vertical width.

6.25.3 The 4 in. (100 mm) wide stripe or combination of stripes shall be permitted to be interrupted by objects (i.e., receptacles, cracks between slats in roll up doors, and so forth) provided the full stripe is seen as conspicuous when approaching the ambulance.

6.25.4 A graphic design shall be permitted to replace all or part of the required striping material if the design or combination thereof covers at least the same perimeter length(s) required by 6.28.1.

6.25.5 Any vertically hinged door shall have at least 60 in.² (38,710 mm²) of retroreflective material affixed to the inside of the door.

6.25.6 At least 50 percent of the rear-facing vertical surfaces, visible from the rear of the ambulance shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees.

6.25.6.1 Each stripe in the chevron shall be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green.

6.25.6.2 Each stripe shall be 6 in. (150 mm) in width.

6.25.7 All retroreflective material shall conform to the requirements of ASTM D 4956, *Standard Specification for Retroreflective Sheeting for Traffic Control*, Section 6.1.1 for Type I Sheeting.

6.25.8 All retroreflective materials that are colors not listed in ASTM D 4956, Section 6.1.1, shall have a minimum coefficient of retroreflection of 10 with observation angle of 0.2 degrees and entrance angle of -4 degrees.

6.25.9 Any printed or processed retroreflective film construction shall conform to the standards required of an integral colored film as specified in ASTM D 4956, Section 6.1.1.

6.26 Metal Finish. Where dissimilar metals that pose a galvanic corrosion or reactive threat are to be mounted together, the mounting base material shall have an isolation barrier prior to assembly to prevent dissimilar metal reaction.

6.27 Painting.

6.27.1 All exposed ferrous metal surfaces that are not plated or stainless steel shall be cleaned, prepared, and painted or coated.

6.27.2 The paint or coating, including any primer, shall be applied in accordance with the paint or coating manufacturer's recommendation.

6.28 Oxygen — Main Supply and Installation.

6.28.1 The ambulance shall have a piped medical oxygen system capable of supplying a minimum of 3000 L of medical oxygen.

6.28.2 If a compressed gas cylinder is used, a cylinder-changing wrench shall be furnished, tethered, and secured within the oxygen storage compartment.

6.28.3 All oxygen system controls shall be accessible from inside the vehicle.

6.28.4 An oxygen-capacity indicator shall be visible from the designated primary patient care seating position.

6.28.5 The oxygen outlet shall be accessible from the designated primary patient care seating position.

6.28.6 The purchaser shall specify the quantity and location of oxygen outlets.

6.28.7 Oxygen system shall include the following:

- (1) A pressure regulator
- (2) Low pressure, electrically conductive hose and fittings approved for medical oxygen
- (3) Oxygen piping that is concealed and not exposed to the elements, securely supported to prevent damage, and be readily accessible for inspection and replacement
- (4) Oxygen that is piped to a self-sealing oxygen outlet with a minimum flow rate of 100 L/min at the outlet
- (5) Outlet(s) that is marked and identified and does not interfere with the suction outlet

6.28.8 Oxygen Pressure Regulator.

6.28.8.1 The medical oxygen pressure reducing- and regulating valve system shall be provided with the following features:

- (1) An inlet filter at the cylinder
- (2) A line relief valve set at 200 psi (1380 kPa) maximum
- (3) A gauge or digital monitor with a minimum range of 0 psi to 2500 psi (17,237 kPa) graduated in not more than 100 psi (690 kPa) increments
- (4) A locking adjustment preset at 50 psi \pm 2 psi line pressure

6.28.8.2 The regulator shall meet the performance as required by 6.28.8.3 at an inlet pressure range from 150 psi to 2500 psi (1034 kPa to 17,237 kPa).

6.28.8.3 With the regulator set at 50 psi \pm 2 psi, a 100 L/min minimum flow rate shall be available at all oxygen outlets.

6.28.9 Oxygen Tank Storage.

6.28.9.1 Storage for the main oxygen cylinder shall be accessible for replacement from an outside position.

6.28.9.2 The oxygen compartment shall be provided with at least 9 in.² (580 mm²) of open vent to dissipate/vent leaking oxygen to the outside of the ambulance.

6.28.9.3 Oxygen cylinder compartment shall not be utilized for storage of any other equipment and shall be labeled "Oxygen Storage Only."

6.28.10 Oxygen Tank Retention.

6.28.10.1 Any oxygen tank shall be retained to withstand a force equal to 25 times the weight of a full tank for which the tank holder was designed.

6.28.10.2 The oxygen tank holder components shall not fail or separate along attachment points.

6.28.10.3 The oxygen tank holder or any component thereof shall not separate from the vehicle at any attachment point.

6.28.10.4 The part of the vehicle to which the oxygen tank holder is attached shall not fail and/or separate at any attachment point.

6.28.10.5 The simulated cylinder shall not disengage from the oxygen tank holder.

6.28.10.6 Compliance of the oxygen tank retention shall be validated by testing a sample retention device using a substantially similar ambulance or body structure in accordance with Section 9.3.

6.28.11 Oxygen System Integrity.

6.28.11.1 The oxygen system of each ambulance shall be tested prior to delivery.

6.28.11.1.1 The oxygen system shall lose no more than 5 psi (34 kPa) of pressure in a 2-hour period.

6.28.11.1.2 Oxygen flow through each outlet shall be capable of delivering at least 100 L/min of oxygen.

6.28.11.1.3 Compliance of the oxygen system integrity shall be validated by testing a sample system in a substantially similar ambulance in accordance with Section 9.15.

6.28.11.2 A label shall be provided near the oxygen tank stating "The integrity of this oxygen system was tested in accordance with NFPA 1917 and meets the requirements thereof."

6.28.11.3 This label shall be signed and dated by an authorized representative of the ambulance manufacturer or test agency.

6.29 Suction Aspirator.

6.29.1 An electrically powered suction aspirator system shall be furnished.

6.29.2 The vacuum control, vacuum indicator, and collection bottle or bag shall be located so that it can be operated from the primary patient care position.

6.29.3 Any permanently mounted suction pump shall be located in an area that is accessible for service.

6.29.4 Any permanently mounted suction pump shall be vented to the vehicle's exterior.

6.29.5 A vacuum control and a shutoff valve, or combination thereof, shall be provided to adjust vacuum levels.

6.29.6 A vacuum indicator gauge graduated at least every 2 in. (100 mm) Hg and a minimum total range of 0 in. to 30 in. (0 mm to 760 mm) Hg shall be provided.

6.29.7 The collection bottle or bag shall be shatter resistant and transparent with a minimum 1000 mL capacity.

6.29.8 The minimum inside diameter for the suction tubing connectors shall be at least 1/4 in. (6.4 mm).

6.29.9 Aspirator System Performance.

6.29.9.1 The aspirator system shall provide a free airflow of at least 30 L/min.

6.29.9.2 The aspirator system shall achieve a minimum of 300 mm Hg vacuum within 4 seconds after the suction tube is closed.

6.29.9.3 Compliance of the aspirator system shall be validated by testing a sample aspirator system installed in a substantially similar ambulance in accordance with Section 9.21.

Chapter 7 Low Voltage Electrical Systems and Warning Devices

7.1* General. Any low voltage electrical systems or warning devices installed on the ambulance shall be appropriate for the mounting location and intended electrical load and shall meet the specific requirements of Chapter 7.

7.1.1 Printed Circuits.

7.1.1.1 When printed circuits are utilized, they shall conform to IPC A-610D, "Acceptability of Electronic Assemblies."

7.1.1.2 Printed circuit assemblies provided shall qualify under IPC A-610D Classification 1.4.1 as Class 2 "For Commercial and Industrial Assemblies" or better.

7.1.1.3 Printed circuit board connections and components shall conform to all other specification requirements.

7.1.2 Electrical System Performance Tests. The low voltage electrical system performance test shall be done according to Section 9.1.

7.2 Wiring.

7.2.1 All electrical circuit feeder wiring supplied and installed by the ambulance manufacturer shall meet the requirements of 7.2.1.1 through 7.2.1.6.

7.2.1.1* The circuit feeder wire shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for which the circuit is protected.

7.2.1.2 Voltage drops in all wiring from the power source to the using device shall not exceed 0.5 volts.

7.2.1.3 The use of star washers for circuit ground connections shall not be permitted.

7.2.1.4 All circuits shall otherwise be wired in conformance with SAE J1292, *Automobile, Truck, Truck-Tractor, Trailer, and Motor Coach Wiring*.

7.2.1.5 Only electrical components directly related to the delivery of on-board oxygen shall terminate in the oxygen storage compartment.

7.2.1.6 If electrical harnesses or wires pass through the oxygen compartment, it shall be enclosed in conduit.

7.2.2 Wiring and Wire Harness Construction.

7.2.2.1 All insulated wire and cable shall conform to SAE J1127, *Low Voltage Battery Cable*, or SAE J1128, *Low Voltage Primary Cable*, type SXL, GXL, or TXL.

7.2.2.1.1 All conductors shall be constructed in accordance with SAE J1127 or SAE J1128, except where good engineering practice dictates special strand construction.

7.2.2.1.2 Conductor materials and stranding, other than copper, shall be permitted if all applicable requirements for physical, electrical, and environmental conditions are met as dictated by the end application.

7.2.2.1.3 Physical and dimensional values of conductor insulation shall be in conformance with the requirements of SAE J1127 or SAE J1128, except where good engineering practice dictates special conductor insulation.

7.2.2.2 The overall covering of conductors shall be moisture-resistant loom or braid that has a minimum continuous rating of 194°F (90°C) except where good engineering practice dictates special consideration for loom installations exposed to higher temperatures.

7.2.2.3 The overall covering of jacketed cables shall be moisture resistant and have a minimum continuous temperature rating of 194°F (90°C), except where good engineering practice dictates special consideration for cable installations exposed to higher temperatures.

7.2.2.4 All wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection.

7.2.2.4.1 The wiring connections and terminations shall be installed in accordance with the device manufacturer's instructions.

7.2.2.4.2 Wire nut, insulation displacement, and insulation piercing connections shall not be used.

7.2.2.5 All ungrounded electrical terminals and electrical panels shall have protective covers or be in enclosures.

7.2.2.6 A minimum 6 in. (152 mm) service loop of wire or harness shall be provided at all electrical components, terminals, and connection points.

7.2.2.7 All wiring connecting to exterior lights and fixtures shall utilize sealed connectors or splices.

7.2.2.8 Wiring Protection.

7.2.2.8.1 Wiring shall be restrained to prevent damage caused by chafing or ice buildup and protected against heat, liquid contaminants, or other environmental factors.

7.2.2.8.2 Wiring shall not be secured to brake lines and/or fuel lines.

7.2.2.9* Wiring Identification.

7.2.2.9.1 Wiring shall be uniquely identified at least every 4 in. (101 mm) by color coding or permanent marking with a circuit function code.

7.2.2.9.2 The identification shall reference a wiring diagram. [See 4.17.2.3(6).]

7.2.2.9.3 The wiring diagram shall have an alphabetical list of all identifiers and their location on the diagram.

7.2.2.10 Circuits shall be provided with properly rated low voltage overcurrent protective devices.

7.2.2.10.1 Such devices shall be readily accessible and protected against heat in excess of the overcurrent device's design range, mechanical damage, and water spray.

7.2.2.10.2 Circuit protection shall be accomplished by utilizing fuses, circuit breakers, fusible links, or solid state equivalent devices.

7.2.2.10.3 If a mechanical-type device is used, it shall conform to one of the following SAE standards:

- (1) SAE J156, *Fusible Links*
- (2) SAE J553, *Circuit Breakers*
- (3) SAE J554, *Electric Fuses (Cartridge Type)*

(4) SAE J1888, *High Current Time Lag Electric Fuses*

(5) SAE J2077, *Miniature Blade Type Electrical Fuses*

7.2.2.11 Terminals.

7.2.2.11.1 All terminals shall be permanently numbered or coded.

7.2.2.11.2 A terminal strip(s) block(s) or a multi-pin connector(s) shall be readily accessible for checking and service.

7.2.2.12 Hard-wired patient compartment electrical systems shall incorporate a master circuit breaker panel with circuit breakers or other electronic nondisposable, current protection devices, in each circuit, which comply with SAE J553 Type I or Type III (if circuit breaker is readily accessible for resetting by the driver or EMSP).

7.2.2.12.1 Multiplexed patient compartment electrical systems shall incorporate centralized circuit protection devices on each power circuit supplying the multiplexing system's components.

7.2.2.13 One extra circuit, minimum 15 amperes, shall be provided for future use.

7.2.2.14 Grounding.

7.2.2.14.1 All electrical components or appliances shall be electrically grounded in accordance with the component manufacturer's recommendations.

7.2.2.14.2 The use of appliance mounting screws/hardware shall not be used for grounding purposes, unless specifically designed for that purpose.

7.2.2.15 All switches, indicators, and controls shall be located and installed in a manner that facilitates easy removal.

7.2.2.16 Switches, relays, terminals, and connectors shall have a direct current (dc) rating of 125 percent of maximum current for which the circuit is protected.

7.2.2.17 The patient compartment interior and exterior electrical circuits shall be powered by circuit(s) separate and distinct from vehicle chassis circuits, unless specific chassis circuits are supplied for that purpose by the chassis manufacturer.

7.3 Power Supply.

7.3.1 A 12 volt or greater electrical alternator shall be provided.

7.3.2* Low Idle Alternator Output.

7.3.2.1 The alternator shall have a minimum output at low idle to meet the minimum electrical load test conditions of the ambulance between 60°F and 110°F (15°C and 43°C) ambient temperature.

7.3.2.1.1 Minimum electrical load test conditions, which are tested under low-idle conditions, shall consist of the following:

- (1) The propulsion engine and transmission
- (2) All legally required clearance and marker lights, headlights, and other electrical devices except windshield wipers and four-way hazard flashers
- (3) The radio(s) at a duty cycle of 10-percent transmit and 90-percent receive (for calculation and testing purposes, a default value of 5 amperes continuous)
- (4) Cab air conditioning (at coldest setting with highest blower speed)
- (5) Patient compartment air conditioning (at coldest setting with highest blower speed)
- (6) The lighting necessary to illuminate walking surfaces at entry points

7.3.2.2 Compliance of the minimum electrical load test conditions shall be validated by testing a substantially similar ambulance in accordance with 9.5.3.3.

7.3.3 The alternator shall be provided with full automatic regulation.

7.3.4 High-Idle Alternator Output.

7.3.4.1 The alternator shall have a minimum output at high idle to power the operational electrical load test conditions between 60°F and 110°F (15°C and 43°C) ambient temperature.

7.3.4.2 Compliance of the high-idle alternator output shall be validated by testing a substantially similar ambulance in accordance with 9.1.2.3.

7.4 Operational Electrical Load Test Conditions

7.4.1 The operational electrical load test conditions minimum continuous electrical load shall consist of the total amperage required to simultaneously operate the following in a stationary mode during emergency operations:

- (1) The propulsion engine and transmission
- (2) All legally required clearance and marker lights, headlights, and other electrical devices except windshield wipers and four-way hazard flashers
- (3) The radio(s) at a duty cycle of 10-percent transmit and 90-percent receive (for calculation and testing purposes, a default value of 5 amperes continuous)
- (4) The lighting necessary to illuminate walking surfaces at entry points and 50 percent of the total compartment light load as required by this standard
- (5) The minimum optical warning system required in Section 7.8, where the ambulance is blocking the right-of-way
- (6) The continuous electrical current required to simultaneously operate an additional 20-ampere load
- (7) Cab air conditioning (at coldest setting with highest blower speed)
- (8) Patient compartment air conditioning (at coldest setting with highest blower speed)
- (9) Patient compartment dome lighting (in the high intensity setting)
- (10)* Other warning devices and electrical loads defined by the purchaser as critical to the mission of the ambulance

7.4.2 If the ambulance is equipped to tow a trailer, an additional 45 amperes shall be added to the minimum continuous electrical load to provide electrical power for the federally required clearance and marker lighting and the optical warning devices mounted on the trailer.

7.4.3* The condition of the low voltage electrical system shall be monitored by a warning system that provides both an audible and a visual signal to persons on, in, or near the ambulance of an impending electrical system failure caused by the excessive discharge of the battery set.

7.4.3.1 The charge status of the battery shall be determined either by direct measurement of the battery charge or indirectly by monitoring the electrical system voltage.

7.4.3.2 Voltage Alarm.

7.4.3.2.1 The alarm shall sound if the system voltage at the battery or at the master load disconnect switch drops below 11.8 volts for 12-volt nominal systems, 23.6 volts for 24-volt nominal systems, or 35.4 volts for 42-volt nominal systems for more than 120 seconds.

7.4.3.2.2 Compliance of the voltage alarm shall be validated by testing a substantially similar ambulance in accordance with 9.5.3.

7.4.4 A voltmeter shall be mounted on the driver's instrument panel to allow direct observation of the system voltage.

7.5 Load Management.

7.5.1* If the total continuous electrical load exceeds the minimum continuous electrical output rating of the installed alternator(s) operating under the conditions specified in 7.4.1, an automatic electrical load management system shall be required.

7.5.2 The minimum continuous electrical loads specified in 7.4.1 shall not be subject to automatic load management.

7.5.3 Engine Speed Auxiliary Control Device.

7.5.3.1 An engine speed auxiliary control device (high-idle switch or throttle) shall be installed to allow an increase in the engine speed when the apparatus is parked.

7.5.3.2 An interlock shall prevent the operation of the engine speed auxiliary control device unless the parking brake is engaged and the transmission is in neutral or park, or the parking brake is engaged and the engine is disengaged from the drive wheels.

7.5.3.3 The engine shall be prevented from regulating its own engine speed during times when engine rpm control is critical for consistent ambulance functions.

7.6* Batteries.

7.6.1 Continuous Electrical Load.

7.6.1.1 With the engine off, the battery system shall be able to provide the minimum electrical load test conditions specified in 7.4.1 for 10 minutes and then be able to restart the engine.

7.6.1.2 Compliance of the battery system shall be verified on every ambulance prior to delivery in accordance with 9.5.2.2.

7.6.2 The battery system cold cranking amps (CCA) rating shall meet or exceed the minimum CCA recommendations of the engine manufacturer.

7.6.3 The batteries shall be mounted to prevent movement during ambulance operation and shall be protected against accumulations of road spray, snow, and road debris.

7.6.3.1 The batteries shall be accessible for examination, testing, and maintenance.

7.6.3.2 Where an enclosed battery compartment is provided, it shall be ventilated to the exterior to prevent the buildup of heat and explosive fumes and separated from the occupant compartments.

7.6.3.3* The batteries shall be protected against vibration and temperatures that exceed the battery manufacturer's recommendation.

7.6.4 A means shall be provided for jump-starting the engine if the batteries are not accessible without lifting the cab of a tilt-cab ambulance.

7.6.5* An onboard battery conditioner or charger shall be provided for maintaining batteries in a fully charged condition.

7.6.6 Any associated line voltage electrical power system shall be installed in accordance with Chapter 8.

7.6.7* A master load disconnect shall be provided between the starter solenoid(s) and the patient compartment electrical loads.

7.6.8 Starter Solenoid.

7.6.8.1 The starter solenoids shall be connected directly to the chassis batteries.

7.6.8.2 Electronic control systems and similar devices shall be permitted to be otherwise connected if so specified by their manufacturer.

7.6.9 The alternator shall be wired directly to the batteries through the ammeter shunt(s), if one is provided, and not through the master load disconnect switch.

7.6.10 A sequential switching device shall be permitted to energize the optical warning devices required in Section 7.9 and other high current devices, provided the switching device shall first energize the electrical devices required in Section 7.9 within 5 seconds.

7.6.11 Two automotive "Power Point" type connectors shall be furnished in the patient compartment for charging all portable battery-powered devices (i.e., suction units, hand lights, defibrillators, portable radios, and so forth).

7.6.11.1 The "Power Point" circuits shall prevent discharge of chassis batteries by only permitting the charging of portable devices when the vehicle is either ignition on or the automatic charger/conditioner is connected to shore power.

7.6.11.2 The "Power Point" circuits shall be protected by a minimum 10 amp circuit breaker.

7.6.11.3 The "Power Point" circuits shall include a (low voltage drop) "Schottky" diode or other solid state equivalent devices to isolate medical equipment batteries from any electrical loads that the remainder of the ambulance electrical system could impose.

7.6.11.3.1 If a "Schottky" diode is used, it shall be heat-sink mounted, have an inverse voltage rating of at least 45 volts, and also be rated to carry the maximum short-circuit current, until the circuit breaker opens.

7.6.11.3.2 If a "Schottky" diode is used, it shall be physically located in an accessible location and be electrically connected between the circuit breaker and the "Power Point" connectors.

7.6.12 An additional tagged, identified lead shall be furnished in both the cab and module for connection of additional (future) portable equipment that requires recharging.

7.7 Temperature Exposure. Any alternator, electrical starting device, ignition wiring, distributor, or ignition coil shall be moisture resistant and protected such that it is not exposed to a temperature that exceeds the component manufacturer's recommendations.

7.8* Electromagnetic Interference. Electromagnetic interference suppression shall be provided, as required, to satisfy the radiation limits specified in SAE J551/1, *Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz)*.

7.9 Optical Warning Devices. Each ambulance shall have a system of optical warning devices that meets or exceeds the requirements of this section.

7.9.1* The optical warning system shall consist of an upper and a lower warning level.

7.9.2 The requirements for each level shall be met by the warning devices in that particular level without consideration of the warning devices in the other level.

7.9.3 For the purposes of defining and measuring the required optical performance, the upper and lower warning levels shall be divided into four warning zones.

7.9.3.1 The four zones shall be determined by lines drawn through the geometric center of the ambulance at 45 degrees to a line drawn lengthwise through the geometric center of the ambulance.

7.9.3.2 The four zones shall be designated A, B, C, and D in a clockwise direction, with zone A to the front of the ambulance as shown in Figure 7.9.3.2.

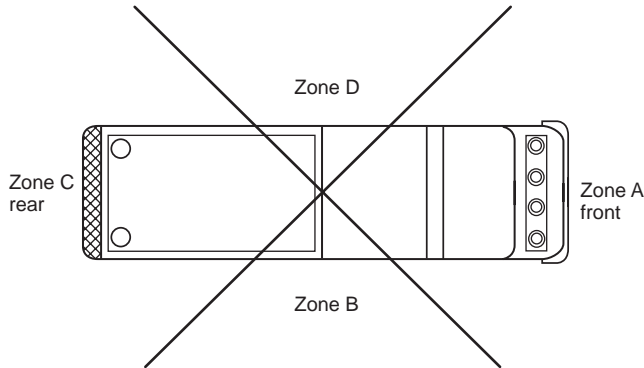


FIGURE 7.9.3.2 Warning Zones for Optical Warning Devices.

7.9.4 Each optical warning device shall be installed on the ambulance and connected to the ambulance's electrical system in accordance with the requirements of this standard and the requirements of the manufacturer of the device.

7.9.5 A master optical warning system switch that energizes all the optical warning devices shall be provided.

7.9.6 The optical warning system on the ambulance shall be capable of two separate signaling modes during emergency operations.

7.9.6.1 One mode shall signal to drivers and pedestrians that the ambulance is responding to an emergency and is calling for the right-of-way.

7.9.6.2 One mode shall signal that the ambulance is stopped and is blocking the right-of-way.

7.9.6.3 The use of some or all of the same warning lights shall be permitted for both modes provided the other requirements of this chapter are met.

7.9.7 A switching system shall be provided that senses the position of the parking brake or the park position of an automatic transmission.

7.9.7.1 When the master optical warning system switch is closed and the parking brake is released or the automatic transmission is not in park, the warning devices signaling the call for the right-of-way shall be energized.

7.9.7.2 When the master optical warning system switch is closed and the parking brake is on or the automatic transmission is in park, the warning devices signaling the blockage of the right-of-way shall be energized.

7.9.7.3* The system shall be permitted to have a method of modifying the two signaling modes.

7.9.8 The optical warning devices shall be constructed or arranged so as to avoid the projection of light, either directly or through mirrors, into any driving or crew compartment(s).

7.9.9 The front optical warning devices shall be placed so as to maintain the maximum practical separation from the headlights.

7.9.10* The optical sources on each level shall be of sufficient number and arranged so that failure of a single optical source does not create a measurement point in any zone on the same level as the failed optical source without a warning signal at a distance of 100 ft (30 m) from the geometric center of the ambulance.

7.9.11 Flash Rate.

7.9.11.1 The minimum flash rate of any optical source shall be 75 flashes per minute, and the minimum number of flashes at any measurement point shall be 150 flashes per minute.

7.9.11.1.1 Steadily burning, nonflashing optical sources shall be permitted to be used.

7.9.11.1.2 The optical energy provided by nonflashing optical sources shall not be included in the calculations of the zone's total optical power.

7.9.11.2 The flasher of any current-interrupted flashing device shall otherwise meet the requirements of SAE J1690, *Flashers*.

7.9.12* Color of Warning Lights.

7.9.12.1 Permissible colors or combinations of colors in each zone, within the constraints imposed by applicable laws and regulations, shall be as shown in Table 7.9.12.1.

Color	Calling for Right-of-Way	Blocking Right-of-Way
Red	Any zone	Any zone
Blue	Any zone	Any zone
Yellow	Any zone except A	Any zone
White	Any zone except C	Not permitted

7.9.12.2 All colors shall be as specified in SAE J578, *Color Specification*, for red, blue, yellow, or white.

7.9.13* Requirements for Large Ambulances.

7.9.13.1 If the ambulance has a bumper-to-bumper length of 25 ft (7.6 m) or more or has an optical center on any optical warning device greater than 8 ft (2.4 m) above level ground, the requirements of 7.9.13.2 through 7.9.13.6 shall apply.

7.9.13.2 Upper-Level Optical Warning Devices.

7.9.13.2.1 The upper-level optical warning devices shall be mounted as high and as close to the corner points of the ambulance as is practical to define the clearance lines of the ambulance.

7.9.13.2.2 The upper-level optical warning devices shall not be mounted above the maximum height, specified by the device manufacturer, that gives an intensity value at 4 ft (1.2 m) above level ground and at 100 ft (30.5 m) from the optical warning device of less than 50 percent of that required at the optical center.

7.9.13.3 Lower-Level Optical Warning Devices.

7.9.13.3.1 To define the clearance lines of the ambulance, the optical center of the lower-level optical warning devices in the front of the vehicle shall be mounted on or forward of the front axle centerline and as close to the front corner points of the ambulance as is practical.

7.9.13.3.2 The optical center of the lower-level optical warning devices at the rear of the vehicle shall be mounted on or behind the rear axle centerline and as close to the rear corners of the ambulance as is practical.

7.9.13.3.3 The optical center of any lower-level device shall be between 18 in. and 62 in. (460 mm and 1600 mm) above level ground.

7.9.13.4 Midship Optical Warning Devices.

7.9.13.4.1 A midship optical warning device shall be mounted on both the right and the left sides of the ambulance if the distance between the front and rear lower-level optical devices exceeds 25 ft (7.6 m) at the optical center.

7.9.13.4.2 Additional midship optical warning devices shall be required, where necessary, to maintain a horizontal distance between the centers of adjacent lower-level optical warning devices of 25 ft (7.6 m) or less.

7.9.13.4.3 The optical center of any midship-mounted optical warning device shall be between 18 in. and 62 in. (460 mm and 1600 mm) above level ground.

7.9.13.5* For each operating mode, the combined optical power of all the optical sources shall meet or exceed the zone total optical power requirements shown in Table 7.9.13.5.

Table 7.9.13.5 Minimum Optical Power Requirements for Large Ambulance

Mode of Operation							
Calling for Right-of-Way				Blocking Right-of-Way			
Zone	Level	H Total	At Any H Point	At Any Point 5 Degrees Up or 5 Degrees Down from H	H Total	At Any H Point	At Any Point 5 Degrees Up or 5 Degrees Down from H
A	Upper	1,000,000	10,000	3,500	400,000	10,000	3,500
B	Upper	400,000	10,000	3,500	400,000	10,000	3,500
C	Upper	400,000	10,000	3,500	800,000	10,000	3,500
D	Upper	400,000	10,000	3,500	400,000	10,000	3,500
A	Lower	150,000	3,750	1,300	150,000	3,750	1,300
B	Lower	150,000	3,750	1,300	150,000	3,750	1,300
C	Lower	150,000	3,750	1,300	150,000	3,750	1,300
D	Lower	150,000	3,750	1,300	150,000	3,750	1,300

Notes:

H = Horizontal plane passing through the optical center.

1. All values are in candela-seconds/minute.

2. The values in the H Total columns are the total of 19 data point values for each light, with data points on the boundary between zones counted in both zones.

7.9.13.6 No individual measurement point shall be less than that shown in Table 7.9.13.5.

7.9.14* Requirements for Small Ambulances.

7.9.14.1 If the ambulance has a bumper-to-bumper length of less than 25 ft (7.6 m) and has the optical center of all optical warning devices at 8 ft (2.4 m) or less above level ground, the requirements of 7.9.14.2 through 7.9.14.5 shall apply.

7.9.14.2 Upper-Level Optical Warning Devices.

7.9.14.2.1 The upper-level optical warning devices shall be mounted as high as practical, but not over 8 ft (2.4 m), at the optical center.

7.9.14.2.2 The upper-level optical warning devices shall be permitted to be combined in one or more enclosures and shall be permitted to be mounted on the cab roof or any other convenient point.

7.9.14.3 Lower-Level Optical Warning Devices.

7.9.14.3.1 One or more lower-level optical warning devices shall be visible from the front and the side of the ambulance.

7.9.14.3.2 The optical center of the lower-level optical warning devices in the front of the vehicle shall be mounted on or forward of the front wheel centerline and as close to the front corner points of the ambulance as is practical.

7.9.14.3.3 The optical center of the device(s) shall be between 18 in. and 48 in. (460 mm and 1220 mm) above level ground.

7.9.14.4 For each operating mode, the combined optical power of all the optical sources mounted on both the upper and lower levels shall meet or exceed the zone's total optical power requirements shown in Table 7.9.14.4.

(See Table 7.9.14.4 on the following page.)

Table 7.9.14.4 Minimum Optical Power Requirements for Small Ambulance

Zone	Mode of Operation Calling for Right-of-Way			Blocking Right-of-Way		
	H Total	At Any H Point	At Any Point 5 Degrees Up or 5 Degrees Down from H	H Total	At Any H Point	At Any Point 5 Degrees Up or 5 Degrees Down from H
A	1,000,000	10,000	3,500	400,000	10,000	3,500
B	200,000	8,000	3,500	200,000	8,000	3,500
C	400,000	10,000	3,500	800,000	10,000	3,500
D	200,000	8,000	3,500	200,000	8,000	3,500

Notes:

H = Horizontal plane passing through the optical center.

1. All values are in candela-seconds/minute.

2. The values in the H Total columns are the total of 19 data point values for each light, with data points on the boundary between zones counted in both zones.

7.9.14.5 No individual measurement point shall be less than that shown in Table 7.9.14.4.

7.9.15 Tests of Optical Warning Devices.

7.9.15.1 Mechanical and Environmental Test.

7.9.15.1.1 All optical warning devices shall be tested to the requirements of SAE J595, *Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles*; SAE J845, *Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles*; SAE J1318, *Gaseous Discharge Warning Lamp for Authorized Emergency, Maintenance, and Service Vehicles*; or SAE J1889, *L.E.D. Signal and Marking Lighting Devices*.

7.9.15.1.2 Optical devices and components designed for mounting only in weatherproof, interior spaces shall be tested in conformance with the applicable SAE standard listed in 7.9.15.1.1 and shall comply with the vibration test and the warpage test for plastic components.

7.9.15.1.3 Optical devices and components designed for mounting on the exterior of the ambulance or in nonweatherproof interior spaces shall be tested in conformance with SAE J845 and shall comply with the following performance requirements of that standard:

- (1) Vibration
- (2) Moisture
- (3) Dust
- (4) Corrosion
- (5) High temperature
- (6) Low temperature
- (7) Durability
- (8) Warpage

7.9.15.2 Photometric Test Procedures for Optical Devices.

7.9.15.2.1 Testing shall be performed by, or on behalf of, the device manufacturer to ensure compliance with the requirements of 7.9.15.2.2 through 7.9.15.2.5.2.

7.9.15.2.1.1 The results of the testing shall be used to determine compliance with this standard, and all required photometric data shall be available, upon request, from the optical warning device manufacturer.

7.9.15.2.1.2 The goniometer, integrating photometer, and other equipment used to take the test measurements shall meet the requirements of SAE J1330, *Photometry Laboratory Accuracy Guidelines*.

7.9.15.2.2 The optical source shall be mounted in a goniometer and operated as it would be in a normal system application.

7.9.15.2.2.1 The minimum distance between the light-emitting surface of the source being tested and the front face of the photometer detector shall be 59 ft (18 m).

7.9.15.2.2.2 The goniometer shall be oriented and the integrating photometer shall be set to integrate light pulses from the source for 20 seconds.

7.9.15.2.3 For all tests performed with the power applied, the lighting system, or component thereof, shall be operated at 12.8 volts \pm 0.1 volt for 12-volt nominal equipment, 25.6 volts \pm 0.2 volt for 24-volt nominal equipment, and 38.4 volts \pm 0.3 volt for 42-volt nominal equipment.

7.9.15.2.3.1 If the equipment is rated for operation on multiple voltages, the tests shall be performed at each of the rated voltages used by the equipment.

7.9.15.2.3.2 Voltage shall be measured at a point 12 in. \pm 1 in. (300 mm \pm 25 mm) from the entry into the component.

7.9.15.2.4 The technique described in 7.9.15.2.2 through 7.9.15.2.2.2 shall be performed along the horizontal plane that passes through the optical center, beginning at the optical center and repeated at 5-degree intervals to the left and to the right of the optical center throughout the active horizontal angle of light emission of the optical source.

7.9.15.2.5 Measurements shall be repeated at 5 degrees up and 5 degrees down from the horizontal plane that passes through the optical center, beginning at a point on the vertical plane passing through the optical center.

7.9.15.2.5.1 The measurements shall be repeated at 5-degree intervals to the left and to the right of this vertical plane throughout the active horizontal angle of light emission of the optical source.

7.9.15.2.5.2 If the optical warning device contains more than one optical source, the test shall be repeated for each optical source.

7.9.16* Compliance Documentation. The ambulance manufacturer shall demonstrate compliance of the warning system by one of the following methods:

- (1) Certification that the system was installed within the geometric parameters specified by the manufacturer of the system referencing the optical source test reports provided by the manufacturer of the system
- (2) Certification that a mathematical calculation based on test reports for individual optical sources provided by the manufacturer of the devices and performed by a qualified person demonstrates that the combination of individual devices as installed meets the requirements of this standard
- (3) Actual measurement of the lighting system after installation on the ambulance

7.9.17 Alternate Lighting Systems.

7.9.17.1 An emergency lighting system shall provide the ambulance with 360 degrees of conspicuity for safety during its missions.

7.9.17.1.1 The system shall display highly perceptible and attention getting signals that function in a modal system, and convey the following messages:

- (1) In the “PRIMARY MODE — Clear the Right-of-Way”
- (2) In the “SECONDARY MODE — Hazard, Vehicle Stopped on Right-of-Way”

7.9.17.1.2 The ambulance standard warning light, system shall not impose a continuous average electrical load exceeding 40 amperes at 14.2 volts.

7.9.17.1.3 The warning light systems shall not impair the effectiveness of the legally required exterior lighting on the ambulance.

7.9.17.2 The ambulance standard emergency warning light system shall contain twelve fixed red lights, one fixed clear light and one or more fixed amber light(s).

7.9.17.2.1 These lights shall function in a dual mode system as shown in Figure 7.9.17.2.1 and meet the physical and photometric requirements.

7.9.17.2.2 The upper body warning lights shall be mounted at the extreme upper corner areas of the ambulance body.

7.9.17.2.3 The single clear light shall be centered between the two front-facing, red, upper corner lights or in a dedicated housing mounted forward of the body on the cab roof.

7.9.17.2.3.1 If due to limited body dimensions and physical size of the outboard forward-facing lights, the lights shall also be mounted in dedicated housings on the cab roof.

7.9.17.2.4 Doors or other ancillary equipment shall not obstruct the standard warning lights.

7.9.17.2.5 The amber light shall be symmetrically located between the two rear-facing red lights.

7.9.17.2.6 The red “grille” lights shall be located at least 30 in. (762 mm) above the ground and below the bottom edge of the windshield and be laterally separated by at least 18 in. (457 mm), measured from centerline to centerline of each lamp.

7.9.17.2.7 The lateral-facing intersection lights shall be mounted as close as possible to the front upper edge of each front fender and can be angled forward a maximum of 30 degrees.

7.9.17.2.8 All warning lights furnished shall be mounted to project their highest intensity beams on the horizontal plane.

7.9.17.3 Photometric, Chromaticity, and Physical Requirements.

7.9.17.3.1 Each emergency light shall flash 75 to 125 times per minute.

7.9.17.3.2 The chromaticity values of the lights shall conform to SAE J578, for their respective color, except for the red lights, which can conform to the following expanded boundary limits of $y = 0.34$, $y = 0.32$, and $x = 0.62$.

7.9.17.3.3 All warning lights shall project a beam spread of at least 5 degrees up and 5 degrees down and at least 45 degrees left and right of horizontal and vertical (H-V).

7.9.17.3.4 Each light shall produce flash energy, (Cd-s) per flash, measured from the H-V to all the extreme test point coordinates and shall be tested at all 5-degree increments.

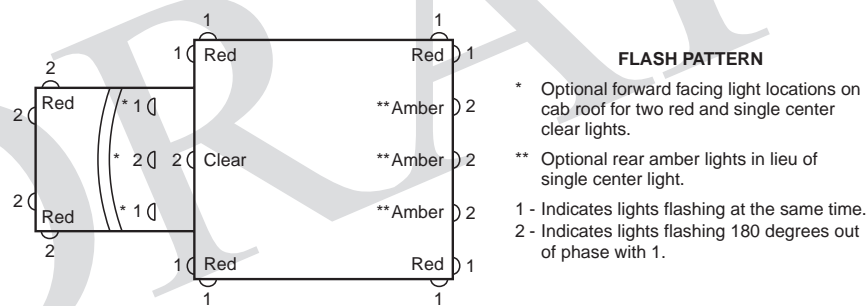
7.9.17.3.4.1 At no point shall the Cd-s values drop to less than the minimum values as shown in Table 7.9.17.2.1 when tested at 14.2 volts.

7.9.17.3.4.2 Flash energy shall be determined in accordance with the SAE J845 method for determining the flash energy of a light.

7.9.17.3.5 Testing shall be conducted on the device(s) as manufactured including use of the actual light source and all other related system components.

7.9.17.4 The emergency light switches shall be wired and arranged to provide the warning light signal modes and combinations as specified.

7.9.17.4.1 All emergency light switches shall be labeled, and each primary/secondary mode switch shall have an indicator light to show the driver which mode is activated.



MINIMUM FLASH ENERGY, Cd-S PER FLASH, PER FIXTURE

Color	Red		Clear	Amber
Location	Grill and fenders	Upper body corners	Front center	Rear center*
Day	160 Cd-S @ HV	240 Cd-S @ HV	900 Cd-S @ HV	600 Cd-S @ HV
	80 Cd-S @ $\pm 5^\circ$ H points	120 Cd-S @ $\pm 5^\circ$ H points	450 Cd-S @ $\pm 5^\circ$ H points	300 Cd-S @ $\pm 5^\circ$ H points
	12 Cd-S @ all $5^\circ V - 45^\circ$ H points	32 Cd-S @ all $5^\circ V - 45^\circ$ H points	96 Cd-S @ all $5^\circ V - 45^\circ$ H points	72 Cd-S @ all $5^\circ V - 45^\circ$ H points
Night	10–30% of the above			

* Single center rear or combined dual rear (optional).

MODAL EMERGENCY LIGHTING SYSTEM

Color & Location	Red	Clear	Amber	Red
Mode of Operation	Front and rear corners	Front upper center	Rear center	Grill and fender
Primary (Clear the right-of-way)	On	On	On	On
Secondary (Hazard vehicle stopped on right-of-way)	On	Off	On	Off

Figure 7.9.17.2.1 Emergency Lighting.

7.9.17.5 The emergency lighting system shall be comprised of components and devices that comply with the general requirements and tests of SAE J575, J576, J578, and J551, as applicable for the unit.

7.9.17.5.1 Warning lights shall be firmly fastened to reinforced body surfaces in accordance with the lighting manufacturer's requirements and recommendations and include aiming wedges to compensate for sloped body surfaces, grille, hood, and fender angles or mold release angles on roof caps.

7.9.17.5.2 The manufacturer shall aim the lights to assure that all lighting performance requirements herein are met.

7.9.17.5.3 The lights shall be aimed either mechanically or optically on the horizontal axis with a tolerance of +0 degrees to -3 degrees.

7.9.17.5.4 All switches, connectors, and wiring shall be rated to carry a minimum of 125 percent of their maximum ampere load.

7.9.17.5.5 When halogen or other long-duty cycle light source is used, the duty cycle of any device shall not exceed 50 percent.

7.9.17.5.6 When strobe lights are furnished, all high voltage leads and connections shall be insulated and enclosed, or weatherproof connectors with the proper voltage rating shall be used.

7.9.17.6 Tests of, Warning Light System.

7.9.17.6.1 The lighting manufacturers shall furnish and certify, or the ambulance manufacturer shall measure and record, the total average current load of the standard emergency warning light system on the vehicle as manufactured at the regulated voltage of 14.2 volts, when operated in the mode that draws maximum current.

7.9.17.6.2 The warning light system and related components and devices shall be tested and approved by an Automotive Manufacturers Equipment Compliance Agency (AMECA) accredited laboratory independent from the lighting device manufacturer's own labs and listed with the AMECA for compliance with the requirements in this specification; *AMECA Compliance Handbook for GSA and SAE Warning Lamp Systems*.

7.10 Audible Warning Devices.

7.10.1 Audible warning equipment in the form of at least one automotive traffic horn and one electric or electronic siren shall be provided.

7.10.1.1 The siren manufacturer shall certify the siren as meeting the requirements of SAE J1849, *Emergency Vehicle Sirens*.

7.10.1.2* A means shall be provided to allow the activation of the siren within reach of the driver.

7.10.2 Where furnished, air horns, electric siren(s), and electronic siren speaker(s) shall be mounted as low and as far forward on the ambulance as is practical.

7.10.3 Audible warning equipment shall not be mounted on the roof of the ambulance.

7.11 Exterior and Interior Lighting.

7.11.1 All light level measurements shall be made with a light meter with a hemispherical light sensor held against the surface, facing perpendicular to the surface, and not deliberately pointed toward the light source.

7.11.2 Scene Lighting.

7.11.2.1 Scene lights shall be located on both the sides of the ambulance.

7.11.2.2 Scene lights shall be not less than 75 in. (1.9 m) above the ground and unobstructed by open doors.

7.11.2.3 Scene light switches shall be located on the cab console and control each side independently.

7.11.3 Load Lighting.

7.11.3.1 The loading area shall be illuminated to a level of at least 1 fc within the first 5 ft (1.5 m) from the vehicle and 0.3 fc up to 10 ft (3 m) from the vehicle.

7.11.3.2 Compliance of the load lighting illumination shall be validated by testing a substantially similar ambulance in accordance with Section 9.24.

7.11.3.3 Load lights shall be not less than 75 in. (1.9 m) above the ground and unobstructed by open doors.

7.11.3.4 Load lights shall turn on whenever the rear patient entry doors are opened.

7.11.3.5 Load light switches shall allow for manual operation when the doors are closed.

7.11.4 Ambulance Exterior DOT Lighting.

7.11.4.1 The exterior ambulance lighting shall include all required FMVSS 108 lighting.

7.11.4.2 The lower front and rear side marker lights shall flash in conjunction with the directional signals.

7.11.5 Ground Lighting.

7.11.5.1 The ambulance shall be equipped with lighting that is capable of providing illumination at a minimum level of 0.3 fc on ground areas within 30 in. (800 mm) of the edge of the ambulance in areas designed for personnel to climb into or onto the ambulance or descend from the ambulance to the ground level.

7.11.5.2 Lighting designed to provide illumination on areas under the driver and crew riding area exits shall be switchable but activated automatically when the exit doors are opened.

7.11.5.3 All other ground area lighting shall be switchable.

7.11.6 Interior Lighting.

7.11.6.1* The ambulance shall have sufficient lighting to provide an average level of 1 fc at each seating surface in the driving compartments.

7.11.6.2 Driving compartment lighting shall be designed and located so that no glare is reflected into the driver's eyes or his line of vision, from switch control panels or other areas that are illuminated while the vehicle is in motion.

7.11.6.3* Patient Compartment Illumination.

7.11.6.3.1 The ambulance interior lighting configuration shall be designed to minimize electrical loads.

7.11.6.3.2 Any lighting circuit shall not consume more than 25 amperes and shall have separately protected and controlled circuits.

7.11.6.3.3 All interior lighting fixtures shall not protrude more than 1.5 in. (38 mm) from the mounting surface.

7.11.6.3.4 The patient compartment lighting shall have the two levels of lighting, high and low, at a minimum.

7.11.6.3.4.1 In the high setting, the patient compartment floor shall have a minimum of 15 fc of illumination, measured along the centerline of the clear floor.

7.11.6.3.4.2* In the high setting, the primary cot shall be provided with a minimum of 35 fc of illumination, measured on at least 90 percent of the cot's surface area.

7.11.6.3.4.3 In the low setting, the patient compartment floor shall have a minimum of 3.5 fc of illumination, measured along at least 85 percent of the centerline length.

7.11.6.3.4.4 In the low setting, the side entry step shall have a minimum of 2.0 fc of illumination, measured in the center of the step area.

7.11.6.3.4.5 Compliance of the requirements in 7.11.6.3.4.1 through 7.11.6.3.4.4 shall be validated by testing a substantially similar ambulance in accordance with Section 9.16.

7.11.6.3.5 The patient compartment lighting shall be automatically activated in the low setting when the side entry or rear entry patient compartment doors are opened.

7.11.7 Compartment Lighting.

7.11.7.1 Each enclosed tool and equipment compartment greater than 4 ft³ (0.1 m³) in volume and having an opening greater than 144 in.² (92,900 mm²) shall have sufficient compartment lighting to provide a minimum of 1 fc at any location on the floor of the compartment without any shelves, dividers, or equipment in the compartment.

7.11.7.2 Switches for all compartment lighting shall be readily accessible.

7.11.7.3 The lights shall be arranged or protected to minimize accidental breakage.

7.11.8 Testing. All interior and exterior lights mounted in wet locations shall be tested in conformance with SAE J575, *Test Methods and Equipment for Lighting Devices and Components for Use on Vehicles Less Than 2032 mm in Overall Width*, and shall comply with the following performance requirements of that standard:

- (1) Vibration
- (2) Moisture

- (3) Dust
- (4) Corrosion
- (5) High temperature
- (6) Low temperature
- (7) Durability
- (8) Warpage

7.12 Do-Not-Move Ambulance Light.

7.12.1* A red flashing or rotating light or electronic display within the forward view of the driver, shall be illuminated automatically whenever the ambulance's ignition switch is in the run position, parking brake is not fully engaged, and any of the following conditions exist:

- (1) Any passenger, patient entry, or equipment compartment door is not closed.
- (2) Any equipment rack is not in the stowed position.
- (3) Any other device permanently attached to the ambulance is open, extended, or deployed in a manner that is likely to cause damage to the ambulance if the ambulance is moved.

7.12.2 Compartments meeting all of the following conditions shall be permitted to be exempt from the requirements of 7.12.1:

- (1) The volume is less than or equal to 4 ft³ (0.1 m³).
- (2) The compartment has an opening less than or equal to 144 in.² (92,900 mm²).
- (3) The open door does not extend sideways beyond the mirrors or up above the top of the ambulance.

7.12.3 If equipped with a do-not-move ambulance light, it shall be labeled to read "Do Not Move Unit."

7.13* Backup Alarm.

7.13.1 An electric or electronic backup alarm shall be provided that meets the Type D (87 dBa) requirements of SAE J994, *Alarm — Backup — Electric, Laboratory Performance Testing*.

7.13.2 The backup alarm shall not have capacity to be turned off or disconnected.

7.14 Stop, Tail, and Directional Lights.

7.14.1 The ambulance shall be equipped with all FMVSS 108 legally required stop, tail, and directional lights.

7.14.2 Directional lights shall be visible according to FMVSS 108.

7.14.3 On ambulances 30 ft (10 m) or longer in length, a turn signal shall be mounted approximately midway along the ambulance at approximately running board height.

7.14.4 Equipment shall not be mounted in a manner that obscures the stop, tail, or directional lights.

7.15 Communications Equipment.

7.15.1 Any two-way radio equipment shall be installed in accordance with the requirements of the radio equipment manufacturer.

7.15.2* Sufficient ventilated space for a two-way radio, including convenience features, antenna openings, ground plane, terminal wiring for 12-volt power, and ground, shall be provided.

Chapter 8 Line Voltage Electrical Systems

8.1 General. The ambulance shall be furnished with an alternating current (ac) line voltage electrical system consisting of a power source and a 2-wire plus ground wiring system that meets the applicable requirements of this chapter.

8.2 General Requirements.

8.2.1 Conformance with National Electrical Code. All components, equipment, and installation procedures shall conform to *NFPA 70, National Electrical Code*, except where superseded by the requirements of this chapter.

8.2.1.1 Where the requirements of this chapter differ from those in *NFPA 70*, the requirements in this chapter shall apply.

8.2.1.2 Where available, line voltage electrical system equipment and materials included on the apparatus shall be listed and used only in the manner for which they have been listed.

8.2.1.3 All equipment and materials shall be installed in accordance with the manufacturer's instructions.

8.2.2 Shoreline Inlet.

8.2.2.1* The ambulance shall be equipped with a line voltage power inlet known as a shoreline inlet.

8.2.2.2 The shoreline inlet shall be a permanently mounted with a male recessed-type receptacle with cover, having a minimum rating of 15 amperes and conforming to the NEMA configuration appropriate for the voltage rating.

8.2.2.3 The shoreline inlet shall be wired directly to the system or device to be powered or wired to a transfer switch where required by 8.8.2.

8.2.2.4 When an external power source is connected to the shoreline receptacle, it shall energize the vehicle's internal line voltage circuit.

8.2.2.5 A proper mating, weatherproof, female connector body conforming to the NEMA configuration provided in 8.2.2.2 shall also be furnished without cable and tagged specifying the size, type of wire necessary, and the polarity of the future hookup.

8.2.2.6 The connection shall be permanently labeled as shown in Figure 8.2.2.6.

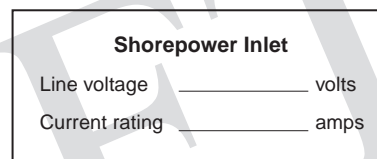


FIGURE 8.2.2.6 Shoreline Inlet Power Label.

8.2.2.7 The protective ground from the shoreline inlet shall be bonded to the vehicle frame.

8.2.3 Receptacle.

8.2.3.1 The shoreline receptacle shall energize the vehicle's internal line voltage circuit from an external power source such as utility power.

8.2.3.2 A proper mating, weatherproof, minimum 15-ampere connector body conforming to the NEMA configuration shall also be furnished without cable and tagged specifying the size, type of wire necessary, and the polarity of the future hookup.

8.2.4 Stability.

8.2.4.1 Any fixed line voltage power source producing alternating current (ac) shall produce electric power at 60 Hz \pm 3 Hz when producing power at all levels between no load and full rated power.

8.2.4.2 Any fixed line voltage power source shall produce electric power at the rated voltage \pm 10 percent when producing power at all levels between no load and full rated power.

8.2.4.3 Any fixed line voltage power source shall produce a maximum voltage output of no more than 10 percent of the power source's full rated voltage.

8.2.4.4 Higher voltage shall be permitted only when used to operate fixed wired, permanently mounted equipment on the ambulance.

8.2.5 Conformance with National Electrical Code.

8.2.5.1 All components, equipment, and installation procedures shall conform to *NFPA 70, National Electrical Code*, except where superseded by the requirements of this chapter.

8.2.5.2 Where the requirements of this chapter differ from those in *NFPA 70*, the requirements in this chapter shall apply.

8.2.5.3* Where available, line voltage electrical system equipment and materials included on the ambulance shall be listed and used only in the manner for which they have been listed.

8.2.5.4 All equipment and materials shall be installed in accordance with the manufacturer's instructions.

8.2.6 Location Ratings.

8.2.6.1 Any equipment used in a dry location shall be listed for dry locations.

8.2.6.2 Any equipment used in a wet location shall be listed for wet locations.

8.2.6.3 Any equipment, except a PTO-driven generator, used in an underbody or underchassis location that is subject to road spray, shall be either listed as Type 4 or mounted in an enclosure that is listed as Type 4.

8.2.6.4* If a PTO-driven generator is located in an underbody or underchassis location, the installation shall include a shield to prevent road spray from splashing directly on the generator.

8.2.7 Line Voltage Electrical System Testing. Electrical system testing shall be performed according to Section 9.2.

8.3 Grounding and Bonding.

8.3.1* Grounding.

8.3.1.1 Grounding shall be in accordance with 250.34(A) and 250.34(B) of *NFPA 70*.

8.3.1.2 Grounding shall be in accordance with 250.6, “Portable and Vehicle Mounted Generators,” of *NFPA 70*.

8.3.1.3 Ungrounded systems shall not be used.

8.3.1.4* Only stranded copper with green colored insulation or green with yellow tracer insulation or braided copper conductors shall be used for grounding and bonding.

8.3.1.5 The grounded current-carrying conductor (neutral) shall be insulated from the equipment-grounding conductors and from the equipment enclosures and other grounded parts.

8.3.1.6 The neutral conductor shall have white or gray colored insulation in accordance with 200.6, “Means of Identifying Grounded Conductors,” of *NFPA 70*.

8.3.1.7 Any bonding screws, straps, or buses in the distribution panelboard or in other system components between the neutral and equipment-grounding conductor shall be removed and discarded.

8.3.2 Interior Equipment Grounding.

8.3.2.1 In the line voltage electrical system, all exposed metal components shall be effectively bonded to the grounding terminals or enclosure of the distribution panelboard.

8.3.2.2 Grounding of electrical equipment shall be done in one of the following ways:

- (1) Connection to a metal raceway, conduit, or electrical metallic tubing
- (2) A connection between one or more equipment grounding conductors and a metal box by means of a grounding screw that is used for no other purpose or a listed grounding device

8.3.2.2.1 The equipment grounding conductor shall be permitted to be secured under a screw, other than a mounting screw or cover screw, that is threaded into the fixture canopy.

8.3.2.2.2 The equipment grounding conductor and fixture attachment screws shall be permitted to be attached to a listed grounding means (plate) in a nonmetallic outlet box for fixture mounting.

8.3.2.2.3 A connection between the one or more equipment grounding conductors brought into a nonmetallic outlet box shall be so arranged that a connection can be made to any fitting or device in that box that requires grounding.

8.3.2.2.4 Where more than one equipment grounding conductor or branch circuit enters a box, all such conductors shall be in electrical contact with each other and the arrangement shall be such that the disconnection or removal of a receptacle, fixture, or other device fed from the box will not interfere with or interrupt the grounding continuity.

8.3.2.2.5 Cord-connected appliances shall be grounded by means of an approved cord with equipment grounding conductor and grounding attachment plug.

8.3.3 Bonding.

8.3.3.1 The neutral conductor of the power source shall be bonded to the vehicle frame.

8.3.3.2 The neutral bonding connection shall occur only at the power source.

8.3.3.3 In addition to the bonding required for the low voltage return current, each body and each driving or crew compartment enclosure shall be bonded to the vehicle frame by a copper conductor.

8.3.3.3.1 The conductor shall have a minimum ampere rating, as defined in 310.15, “Ampacities for Conductors Rated 0–2000 Volts,” of *NFPA 70*, of 115 percent of the rated ampere on the power source specification label.

8.3.3.3.2 A single conductor that is sized to meet the low voltage and line voltage requirements shall be permitted to be used.

8.3.3.3.3 All exposed non-current carrying metal parts that could become energized shall be effectively bonded to the grounding terminal or enclosure of the distribution panelboard.

8.3.3.3.4 A bonding conductor shall be connected between the distribution panelboard and an accessible terminal on the chassis.

8.3.3.3.4.1 Aluminum or coppered aluminum conductors shall not be used.

8.3.3.3.4.2 Any ambulance that employs a unitized metal chassis–frame construction to which the distribution panel is securely fastened with a bolt and nut shall be considered to be bonded.

8.3.3.3.5 The ambulance body and exterior covering shall be considered bonded when the following criteria has been met:

- (1) The metal panels overlap one another and are securely attached to the metal frame parts by metal fasteners or welding.
- (2) The lower panel of the metal exterior covering is secured by metal fasteners at each cross member of the chassis, or the lower panel is bonded to the chassis by a metal strap.

8.3.3.3.6 Metal circulating air ducts shall be bonded to the chassis.

8.3.3.3.7 The compressed gas pipes shall be bonded to the chassis.

8.4* Ground-Fault Circuit Interrupters. All line voltage ac circuits of the ambulance shall be protected by listed ground-fault circuit interrupters in accordance with ANSI/UL 498, *Standard for Safety Attachment Plugs and Receptacles*.

8.5 Power Source General Requirements. The requirements in 8.5.1 through 8.5.10 shall apply to all line voltage power sources.

8.5.1 All power source system mechanical and electrical components shall be sized to support the continuous duty nameplate rating of the power source.

8.5.2 The power source shall be shielded from contamination that would prevent the power source from operating within its design specifications.

8.5.3 Generators. If the power source is mechanically driven and mounted on the vehicle, it shall comply with Article 445, “Generators,” of *NFPA 70*.

8.5.4 Power Source Rating.

8.5.4.1* For power sources of 8 kW or larger, the power source manufacturer shall declare the continuous duty rating that the power source can provide when installed on ambulance according to the manufacturer’s instructions and run at 120°F (49°C) air intake temperature at 2000 ft (600 m) above sea level.

8.5.4.2 The rating on the power source specification label shall not exceed the declared rating from the power source manufacturer.

8.5.5 Access shall be provided to permit both routine maintenance and removal of the power source for major servicing.

8.5.6 The power source shall be located such that neither it nor its mounting brackets interfere with the routine maintenance of the ambulance.

8.5.7 Instrumentation.

8.5.7.1 If the power source is rated at less than 3 kW, a “Power On” indicator shall be provided.

8.5.7.2 If the power source is rated at 3 kW or more but less than 8 kW, a voltmeter shall be provided.

8.5.7.3* If the power source is rated at 8 kW or more, the following instrumentation shall be provided at an operator’s panel:

- (1) Voltmeter
- (2) Current meters for each ungrounded leg
- (3) Frequency (Hz) meter
- (4) Power source hourmeter

8.5.7.4 The instrumentation shall be permanently mounted at an operator’s panel.

8.5.7.4.1 The instruments shall be located in a plane facing the operator.

8.5.7.4.2 Gauges, switches, or other instruments on this panel shall each have a label to indicate their function.

8.5.7.4.3 The instruments and other line voltage equipment and controls shall be protected from mechanical damage and not obstructed by tool mounting or equipment storage.

8.5.8 An instruction plate(s) that provides the operator with the essential power source operating instructions, including the power-up and power-down sequence, shall be permanently attached to the ambulance at any point where such operations can take place.

8.5.9* Operation.

8.5.9.1 Provisions shall be made for placing the generator drive system in operation using controls and switches that are identified and within reach of the operator while seated in the drivers seat or standing upright on the ground.

8.5.9.2 Where the generator is driven by the chassis engine and engine compression brakes or engine exhaust brakes are furnished, they shall be automatically disengaged for generator operations.

8.5.9.3* Any control device used in the generator system power train between the engine and the generator shall be equipped with a means to prevent unintentional movement of the control device from its set position in the power generation mode.

8.5.10 If there is permanent wiring on the ambulance that is designed to be connected to the power source, a power source specification label that is permanently attached to the ambulance at the operator's control station shall provide the operator with the information detailed in Figure 8.5.10.

Power Source Specifications	
Operational Category	Continuous Duty Rating
Rated voltage(s) and type (ac or dc)	
Phase	
Rated frequency	
Rated amperage	
Continuous rated watts	
Power source engine speed	

FIGURE 8.5.10 Power Source Specification Label.

8.5.11 The power source, at any load, shall not produce a noise level that exceeds 90 dBA in any driving compartment, crew compartment, or onboard command area with windows and doors closed or at any operator's station on the ambulance.

8.6 Power Source–Type Specific Requirements.

8.6.1* Direct Drive (PTO) Generators. If the generator is driven by any type of PTO, it shall meet the requirements of 8.6.1.1 through 8.6.1.3.

8.6.1.1 The transmission's PTO port and PTO, or the split shaft PTO, and all associated driveshaft components shall be rated to support the continuous duty torque requirements of the generator's continuous duty rating as stated on the power source nameplate.

8.6.1.2 The direct drive generator shall be mounted so that it does not cause the ramp breakover angle, angle of departure, or angle of approach as defined by other components, and it shall not extend into the ground clearance area.

8.6.1.3 The direct drive generator shall be mounted away from exhaust and muffler areas or provided with a heat shield to reduce operating temperatures in the generator area.

8.6.2* Hydraulically Driven Generators. If the generator is driven using hydraulic components, it shall meet the requirements of 8.6.2.1 through 8.6.2.3.4.

8.6.2.1* A means shall be provided to activate the hydraulic generator system.

8.6.2.2 If the hydraulic generator system is not capable of output as stated on the power source specification label at all engine speeds, an automatic engine speed control system shall be provided.

8.6.2.3 Hydraulic Components.

8.6.2.3.1 A hydraulic system filter and strainer shall be provided and shall be located in a readily accessible area.

8.6.2.3.2 Hydraulic hose shall meet the hydraulic pump manufacturer's recommendations for pressure, size, vacuum, and abrasion resistance.

8.6.2.3.3 Hydraulic fittings shall meet the hydraulic pump manufacturer's recommendations for pressure, size, and the type of hose used.

8.6.2.3.4 Where the hydraulic hose comes into contact with other surfaces, the hose shall be protected from chafing.

8.6.3* Fixed Auxiliary Engine–Driven Generators. If the generator is driven by a fixed auxiliary engine, it shall meet the requirements of 8.6.3.1 through 8.6.3.9.4.

8.6.3.1 The generator shall be installed so that fumes, vapors, heat, and vibrations do not enter the driving or patient compartment.

8.6.3.2* Generators rated at 8 kW or more shall be equipped with a high temperature automatic shutdown system and a low oil (pressure or level) automatic shutdown system.

8.6.3.3 The generator shall be installed in accordance with the generator manufacturer's requirements for ventilation and service accessibility.

8.6.3.4 If the generator is installed in a compartment and the compartment doors shall be open during its operation, the generator shall be equipped with an interlock system to prevent its operation if the doors are not open, or the compartment shall be equipped with a high temperature alarm.

8.6.3.5 If the generator is installed in a compartment on a slide tray and the slide tray is to be in the extended or out position during operation, an interlock shall be provided to prevent operation unless the tray is in the correct position, or the compartment shall be equipped with a high temperature alarm.

8.6.3.6 Permanently installed generators shall have readily accessible engine oil drain provisions or piping to a remote location for oil changing.

8.6.3.7 If the generator is located in a position on the ambulance where the operator cannot see the instrumentation and operate the controls while standing at ground level or positioned at a specifically designated operator station, an operating panel with the required instrumentation, start and stop controls, and other controls necessary for safe operation shall be provided at a remote operator's panel.

8.6.3.8 Fuel System.

8.6.3.8.1 Fuel lines shall be protected from chafing at all wear points.

8.6.3.8.2 If the fuel source is shared with the ambulance engine, a separate fuel pickup system shall be provided that is arranged to ensure that the generator cannot utilize more than 75 percent of the fuel tank's capacity.

8.6.3.9 Exhaust System.

8.6.3.9.1* The exhaust piping and discharge shall be located or shielded to prevent thermal damage to the ambulance or equipment.

8.6.3.9.2 The exhaust shall be piped to the exterior of the vehicle and discharged at a location away from any operator's position.

8.6.3.9.2.1 The exhaust system for the generator shall comply with Section 5.6.

8.6.3.9.3 Where parts of the exhaust system are exposed so that they can cause injury to operating personnel, protective guards shall be provided.

8.6.3.9.4 Silencing devices shall be provided and shall not create exhaust backpressure that exceeds the limits specified by the engine manufacturer.

8.6.4* Line Voltage Power Derived from the Ambulance Low Voltage Power Supply Systems. If the power source derives its input energy from the ambulance low voltage electrical system, it shall meet the requirements of 8.6.4.1 and 8.6.4.2.

8.6.4.1 The low voltage power supply system shall be installed in compliance with the requirements of Chapter 7.

8.6.4.2* The alternator and/or battery system shall be adequate to provide power for continuous operation for a minimum of 2 hours at full output.

8.6.5 Power Sources Requiring Elevated Engine Speed. If the power source requires the chassis engine to be operating at a specific fixed speed or a specific speed range, it shall meet the requirements of 8.6.5.1 through 8.6.5.3.

8.6.5.1 The main propulsion engine shall have a governor capable of maintaining the engine speed within the limits required by the power source to meet the frequency control, voltage control, and power output specifications.

8.6.5.2 An interlock shall prevent engagement of the generator unless the parking brake is engaged and the transmission is in neutral or not connected to the drive wheels.

8.6.5.3* Where the chassis engine drives the generator and electronic engine throttle controls are provided, an interlock shall prevent engine speed control from any other source that would interfere with the generator while the generator is operating.

8.6.6* Waveform Created Electronically. If the power output waveform is electronically created (as with invertors and some generators), the purchaser shall specify whether modified sine wave or pure sine wave output is required.

8.7* Portable Generator Installations.

The generator shall comply with Article 445, “Generators,” of *NFPA 70*.

8.7.1 Any portable generator that can be operated while mounted on the ambulance shall be as follows:

- (1) Installed so that fumes, vapors, heat, excessive noise, and vibrations do not enter interior driving or crew compartments or damage the generator during operation
- (2) Have the exhaust outlet located so that exhaust is directed away from any operator station located on the ambulance and guarded to protect the operator
- (3) Installed in a location that directs the exhaust and heat at least 12 in. (300 mm) away from the fuel fill, oxygen system, entry doors, and ventilation inlets

8.7.2 If the portable generator is remotely mounted, it shall have a remote operator’s control station that shall provide a means for starting and stopping the generator and monitoring the same instrumentation as is required for fixed power sources.

8.7.3 Wiring for Portable Generator Installations. Wiring installed for the purpose of facilitating the distribution of power from a portable generator installation to fixed wiring on the ambulance shall conform to the additional requirements of 8.7.3.1 through 8.7.3.5.

8.7.3.1 Circuit conductors shall be sized in relation to the power source specification label rating and shall be protected by an overcurrent device commensurate with their ampere capacities.

8.7.3.2 There shall be a single output connector cord with all of the conductors in the cord sized to carry a minimum of 115 percent of the nameplate ampereage.

8.7.3.3 If there is not an overcurrent protection device at the power source, the output connector cord shall not exceed 72 in. (1830 mm) in length and shall be connected to an overcurrent protection device.

8.7.3.4 The rating of an external main overcurrent protection device shall equal the rated ampereage on the power source specification label or the next larger available size overcurrent protection device where so recommended by the power source manufacturer.

8.7.3.5 If a connecting plug is required, it shall be sized in relation to the system and conform to NEMA configurations for plugs.

8.8 Transfer Switch Applications.

8.8.1 A transfer switch shall be required to isolate one power source from the other where a circuit(s) is intended to be supplied from more than one power source.

8.8.2 Transfer equipment, including transfer switches, shall operate such that all ungrounded conductors of one power source are disconnected before any ungrounded conductors of the second power source are connected.

8.8.3 The neutral conductor shall be switched through the transfer switch.

8.9 Power Supply Assembly.

8.9.1 The conductors used in the power supply assembly between the output terminals of the power source and the main overcurrent protection device shall not exceed 12 ft (4 m) in length.

8.9.2 All power supply assembly conductors, including neutral and grounding conductors, shall have an equivalent ampereage rating and shall be sized to carry not less than 115 percent of the ampereage of the nameplate current rating of the power source.

8.9.3* If the power supply assembly connects to the vibrating part of a generator (not a connection on the base), the conductors shall be flexible cord or other fine-stranded conductors enclosed in metallic or nonmetallic liquidtight flexible conduit rated for wet locations and temperatures not less than 194°F (90°C).

8.10 Overcurrent Protection.

Manually resettable overcurrent devices shall be installed to protect the line voltage electrical system components.

8.10.1 Power Source Protection. A main overcurrent protection device shall be provided that is either incorporated in the power source or connected to the power source by a power supply assembly.

8.10.1.1 The size of the main overcurrent protection device shall not exceed 100 percent of the rated ampereage stated on the power source specification label or the rating of the next larger available size overcurrent protection device, where so recommended by the power source manufacturer.

8.10.1.2 If the main overcurrent protection device is subject to road spray, the unit shall be housed in a Type 4-rated enclosure.

8.10.2 Branch Circuit Overcurrent Protection. Overcurrent protection devices shall be provided for each individual circuit and shall be sized at not less than 15 amperes in accordance with 240.4, “Protection of Conductors,” of *NFPA 70*.

8.10.2.1 Any panelboard shall have a main breaker where the panel has six or more individual branch circuits or the power source is rated 8 kW or larger.

8.10.2.2 Each overcurrent protection device shall be marked with a label to identify the function of the circuit it protects.

8.10.2.3 Dedicated circuits shall be provided for any large appliance or device that requires 60 percent or more of the rated capacity of the circuit to which it is connected, and that circuit shall serve no other purpose.

8.10.3 Panelboards. All fixed power sources shall be hardwired to a permanently mounted panelboard unless one of the following conditions exists:

- (1) All line voltage power connections are made through receptacles on the power source, and the receptacles are protected by integrated overcurrent devices.
- (2) Only one circuit is hardwired to the power source, which is protected by an integrated overcurrent device.

8.10.3.1 The panel shall be visible and located so that there is unimpeded access to the panelboard controls.

8.10.3.2 All panelboards shall be designed for use in their intended location.

8.10.3.3 The panel(s) shall be protected from mechanical damage, tool mounting, and equipment storage.

8.10.3.4* Where the power source is 120/240 volts, and 120-volt loads are connected, the ambulance manufacturer or line voltage system installer shall consider load balancing to the extent that it is possible.

8.11* Wiring Methods.

Fixed wiring systems shall be limited to the following:

- (1) Metallic or nonmetallic liquidtight flexible conduit rated at temperatures not less than 194°F (90°C) with stranded copper wire rated for wet locations and temperatures not less than 194°F (90°C)
- (2) Type SOW, SOOW, SEOW, or SEOOW flexible cord rated at 600 volts and at temperatures not less than 194°F (90°C)

8.11.1 Electrical cord or conduit shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, oxygen lines, hydraulic lines, exhaust system components, or low voltage wiring and shall be arranged as follows:

- (1) Separated by a minimum distance of 12 in. (300 mm) from exhaust piping or shielded from such piping
- (2) Separated from fuel lines by a minimum distance of 6 in. (152 mm)

8.11.1.1 Line voltage wiring shall not be routed through the oxygen compartment.

8.11.2 A means shall be provided to allow “flexing” between the driving and crew compartment, the body, and other areas or equipment whose movement would stress the wiring.

8.11.3 Electrical cord or conduit shall be supported within 6 in. (152 mm) of any junction box and at a minimum of every 24 in. (600 mm) of run.

8.11.3.1 Supports shall be made of nonmetallic materials or of corrosion-resistant or corrosion-protected metal.

8.11.3.2 All supports shall be of a design that does not cut or abrade the conduit or cord and shall be mechanically fastened to the ambulance.

8.11.4 Only fittings and components listed for the type of cord or conduit being installed shall be used.

8.11.4.1 Where rigid metal conduit or intermediate metal conduit is terminated at an enclosure with a lock nut and bushing connection, two lock nuts shall be provided with one inside and one outside of the enclosure.

8.11.4.2 All cut ends of conduit shall be reamed or otherwise finished to remove rough edges.

8.11.5 Splices shall be made only in a listed junction box.

8.11.6 Additional Requirements for Flexible Cord Installations.

8.11.6.1* Where flexible cord is used in any location where it could be damaged, it shall be protected by installation in conduit, enclosures, or guards.

8.11.6.2 Where flexible cord penetrates a metal surface, rubber or plastic grommets or bushings shall be installed.

8.11.7 Wiring Identification.

8.11.7.1 Each line voltage circuit originating from the main panelboard shall be identified.

8.11.7.2 The wire or circuit identification either shall reference a wiring diagram or wire list or shall indicate the final termination point of the circuit.

8.11.7.3 Where pre-wiring for future power sources or devices exists, the unterminated ends shall be marked with a label showing their wire size.

8.12 Wiring System Components.

8.12.1 Only stranded copper conductors with an insulation rated for temperatures of at least 194°F (90°C) and wet locations shall be used.

8.12.1.1 Conductors in flexible cord shall be sized in accordance with Table 400.5(A) of *NFPA 70*.

8.12.1.2 Conductors used in conduit shall be sized in accordance with 310.15, “Ampacities for Conductors Rated 0–2000 Volts,” of *NFPA 70*.

8.12.1.3 Aluminum or copper-clad aluminum conductors shall not be used.

8.12.2 All boxes shall conform to and be mounted in accordance with Article 314, “Outlet, Device, Pull, and Junction Boxes; Conduit Bodies; Fittings; and Manholes,” of *NFPA 70*.

8.12.2.1 All boxes shall be readily accessible.

8.12.2.2 Boxes shall not be permitted behind welded or pop-riveted panels.

8.12.2.3 The maximum number of conductors permitted in any box shall be in accordance with 314.16, “Number of Conductors in Outlet, Device, and Junction Boxes, and Conduit Bodies,” of *NFPA 70*.

8.12.3* All wiring connections and terminations shall provide a positive mechanical and electrical connection.

8.12.3.1 Connectors shall be installed in accordance with the manufacturer’s instructions.

8.12.3.2 Wire nuts or insulation displacement and insulation-piercing connectors shall not be used.

8.12.4* Each switch shall indicate the position of its contact points (i.e., open or closed) and shall be rated for the continuous operation of the load being controlled.

8.12.4.1 All switches shall be marked with a label indicating the function of the switch.

8.12.4.2* Circuit breakers used as switches shall be “switch rated” (SWD) or better.

8.12.4.3 Switches shall simultaneously open all associated line voltage conductors.

8.12.4.4 Switching of the neutral conductor alone shall not be permitted.

8.12.4.5 Line voltage circuits controlled by low voltage circuits shall be wired through properly rated relays in listed enclosures that control all nongrounded current-carrying conductors.

8.12.5* Receptacles and Inlet Devices.

8.12.5.1 The patient compartment shall be furnished with a minimum of three (3) line voltage duplex receptacles conforming to NEMA 5-15.

8.12.5.2 Receptacles shall be near flush, vertically mounted.

8.12.5.3 All interior outlets shall be installed in accordance with 210.7, “Receptacles and Cord Conductors,” of *NFPA 70*.

8.12.5.4 Any receptacle shall be at least 12 in. (300 mm) from any oxygen outlet.

8.12.5.5 An indicator shall be located within each line voltage receptacle as a line monitor indicating a live (hot) circuit.

8.12.5.6 Wet and Dry Locations.

8.12.5.6.1 All wet location receptacle outlets and inlet devices, including those on hardwired, remote power distribution boxes, shall be of the grounding type, provided with a wet location cover, and installed in accordance with 406.8, “Receptacles in Damp or Wet Locations,” of *NFPA 70*.

8.12.5.6.2 All receptacles located in a wet location shall be not less than 24 in. (600 mm) from the ground.

8.12.5.6.3* Receptacles on off-road ambulances shall be a minimum of 30 in. (760 mm) from the ground.

8.12.5.7 All receptacles located in a dry location shall be of the grounding type and shall be at least 12 in. (300 mm) above the interior floor height.

8.12.5.8 No receptacle shall be installed in a face-up position.

8.12.5.9 The face of any wet location receptacle shall be installed in a plane from vertical to not more than 45 degrees off vertical.

8.12.5.10 Receptacle Label.

8.12.5.10.1 Each receptacle shall be marked with a label indicating the nominal line voltage (120 volts or 240 volts) and the current rating in amps of the circuit.

8.12.5.10.2 If the receptacle is dc or other than single phase, that information shall also be marked on the label.

8.12.5.11* All receptacles and electrical inlet devices shall be listed to ANSI/UL 498, *Standard for Safety Attachment Plugs and Receptacles*, or other recognized performance standards.

8.12.5.12 Receptacles used for dc voltages shall be rated for dc service.

8.13 Cord Reels.

8.13.1 All permanently mounted cord reels shall be rated for continuous duty and installed to be accessible for removal, cord access, maintenance, and servicing.

8.13.2 The power rewind cord reel spool area shall be visible to the operator during the rewind operation, or the reel spool shall be encapsulated to prevent cord from spooling off the reel.

8.13.3 Rollers or guides shall be provided, where required, to prevent damage to the cord at reel spools or compartment openings.

8.13.4 Rewind Provision.

8.13.4.1 Manually operated reels shall have a hand crank.

8.13.4.2 Power rewind-type reels shall have the control in a position where the operator can observe the rewinding operation.

8.13.4.3 If a reel is in an enclosure or out of direct view, the cord entry point to the enclosure shall be visible to the operator of the reel control.

8.13.4.4 The rewind control or crank shall not be more than 72 in. (1830 mm) above the operator’s standing position.

8.13.4.5 The rewind control shall be marked with a label indicating its function and shall be guarded to prevent accidental operation.

8.13.5* The reel shall be designed to hold 110 percent of the capacity needed for the intended cord length.

8.13.6* The wire size shall be in accordance with *NFPA 70*, Table 400.5(A), but in no case shall it be smaller than 12 AWG.

8.13.7* Electrical cord shall be Type SEOOW, Type SOOW, or Type STOOW.

8.13.8* A label that indicates the following information shall be provided in a visible location adjacent to any permanently connected reel:

- (1) Current rating
- (2) Current type
- (3) Phase
- (4) Voltage
- (5) Total cord length

8.13.9 Where a power distribution box is hardwired to the end of a cord that is stored on a fixed cord reel or other fixed storage means, the requirements in 8.13.9.1 through 8.13.9.6 shall apply.

8.13.9.1 The remote power distribution box shall be listed for use in a wet location.

8.13.9.2* The distribution box shall be as follows:

- (1) Protected from corrosion
- (2) Capable of being carried with a gloved hand
- (3) Designed to keep the exterior electrical components above 2 in. (51 mm) of standing water

8.13.9.3 Inlets, receptacles, circuit breakers, or GFCI devices shall not be mounted on the top surface of the horizontal plane.

8.13.9.4 Branch circuit breakers shall be installed in the remote power distribution box if the overcurrent device protecting the feed cord to the box is too large to protect the wiring supplying the devices plugged onto the distribution box.

8.13.9.5* Remote power distribution boxes shall have a light on the box to indicate the power is on.

8.13.9.5.1* The light shall be visible in a 360-degree plane from a minimum of 200 ft (60 m) in complete darkness.

8.13.9.5.2 The light shall be mechanically protected to prevent damage.

8.13.9.6 The hardwired portable cord connection to the box shall have strain relief and meet the intended usage requirements.

8.14 Scene Lighting Systems.

8.14.1 Where fixed scene lights are supplied, the requirements in 8.14.2 through 8.14.5 shall apply.

8.14.2 All scene lights shall be provided with a lens or a means for preventing damage from water spray and shall be listed for wet location usage.

8.14.3 Handle on Lights.

8.14.3.1 If the light is adjustable, a handle shall be provided.

8.14.3.2 The design of the light shall not allow the temperature of the handle to exceed 131°F (55°C).

8.14.4 The manufacturer of the device shall have the scene light tested by a nationally recognized testing laboratory and listed to ANSI/UL 153, *Standard for Portable Electric Luminaires*, or ANSI/UL 1598, *Luminaires*.

8.14.5 If manually operated floodlights are not operable from the ground, access steps and handrails that meet the requirements of Chapter 6 shall be provided to allow the user to reach the floodlights.

8.15 Appliance Accessibility and Fastening.

8.15.1 All electrical appliances shall be accessible for inspection, service, repair, and replacement without removal of permanent construction.

8.15.2 Appliances shall be fastened in accordance with the manufacturer's directions.

Chapter 9 Test Methods

9.1 Ambulance Body Structure Test.

9.1.1 Roof Crush Test.

9.1.1.1 The following actions shall be performed during the roof crush test:

- (1) Support the ambulance on a rigid fixture independent of the vehicle suspension
- (2) Remove any components that extend upward from the vehicle roof
- (3) Measure and record the distance from the mounting surface to each of the four corners of the roof
- (4) Employ a rectangular force application plate fitted as near as possible to the contour of the ambulance roof
- (5) Position the force application plate so that it is centered on the roof
- (6) Close all ambulance doors

(7) Load the application plate to 500 lb (227 kg) at a deflection rate less than 0.5 in. (13 mm) per second

(8) Record elevation readings of all four corners of the roof

(9) Load the application plate to 50 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second

(10) Record elevation readings of all four corners of the roof

(11) Load the application plate to 100 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second

(12) Record elevation readings of all four corners of the roof

(13) Verify that patient compartment doors are capable of being opened and closed

(14) Remove load

(15) Verify that patient compartment doors are capable of being opened and closed

9.1.1.2 The application plate required in 9.1.1.1(4) shall be a minimum of 5 in. (127 mm) longer and 5 in. (127 mm) wider than the vehicle roof of the patient's compartment.

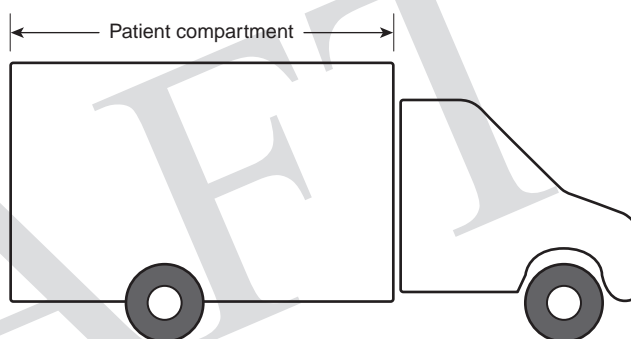


Figure 9.1.1.2(a) Type I and Type III Ambulance Patient Compartment Roof Measurement.

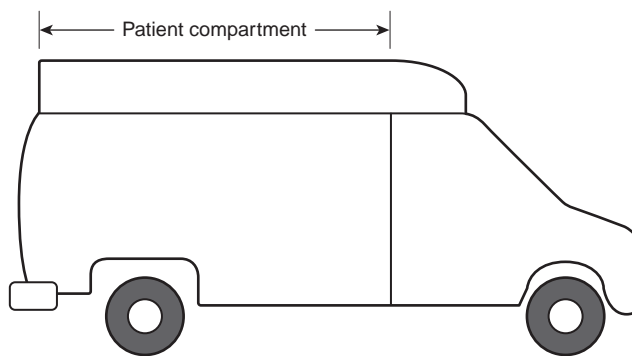


Figure 9.1.1.2(b) Type II Ambulance Patient Compartment Roof Measurement.

9.1.1.3 For the purposes of the measurements in 9.1.1.2, the ambulance roof shall be that structure, seen in the top projected view, that coincides with the patient compartment of the ambulance as shown in Figure 9.1.1.2(a) and Figure 9.1.1.2(b).

9.1.2 Side Crush Test (Type I and Type III Only).

9.1.2.1 The following actions shall be performed during the side crush test:

- (1) Place either side of the body on a rigid horizontal surface so that the body is entirely supported
- (2) Measure and record the distance from the mounting surface to each of the four top corners of the body side

- (3) Employ a rigid, rectangular force application plate fitted as near as possible to the contour of the ambulance side
- (4) Position the force application plate so that it is centered on the patient compartment side
- (5) Close all ambulance doors
- (6) Load the application plate to 500 lb (227 kg) at a deflection rate less than 0.5 in. (13 mm) per second
- (7) Record elevation readings of all four corners of the body side
- (8) Load the application plate to 50 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second
- (9) Record elevation readings of all four corners of the body side
- (10) Load the application plate to 100 percent of the final load at a deflection rate less than 0.5 in. (13mm) per second
- (11) Record elevation readings of all four corners of the body side
- (12) Verify that the rear patient compartment doors are capable of being opened and closed
- (13) Remove load
- (14) Verify that the rear patient compartment doors are capable of being opened and closed

9.1.2.2 The application plate required in 9.1.2.1(3) shall be a minimum of 5 in. (127 mm) longer and 5 in. (127 mm) wider than the vehicle side of the patient's compartment.

9.2 Body Door Test (Type I and Type III Only).

9.2.1 The following actions shall be performed during the body door test:

- (1) Position the test structure or ambulance on a level, horizontal surface
- (2) Employ force application fixtures in such a manner that the opposing forces are supported by the body structure
- (3) Apply forces for 10 seconds in all required directions and/or positions after the installation of associated body door retention components
- (4) Apply forces for 10 seconds to a continuous hinge so that the load will be distributed equally from top to bottom
- (5) Apply forces for 10 seconds to individual (strap-type) hinges so that the load will be distributed proportionally on each hinge
- (6) Apply forces so that it will be equally distributed as near the latch or hinge as practical

9.2.2 The patient compartment shall be structurally complete but need not include interior panels or cabinet installation.

9.3 Oxygen Tank Retention System Static Test.

9.3.1 The following actions shall be performed during the oxygen tank retention system static test as shown in Figure 9.3:

- (1) Test the retention system in a substantially similar ambulance or mounted to a structure that is substantially similar to the ambulance
- (2) Apply forces using a rigid simulated cylinder having the same physical dimensions as the oxygen tank for which the tank holder was designed as shown in Figure 9.3
- (3) Apply each force so that it passes through the location that corresponds to the center of gravity of a full tank
- (4) Apply the test force for 10 seconds in the direction of cylinder extraction and in both axial directions

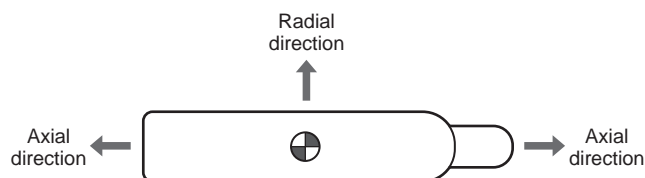


Figure 9.3 Oxygen Tank Retention Test.

9.4 Patient Cot Retention System Static Test. The following actions shall be performed during the patient cot retention system static test:

- (1) Test the retention system in a substantially similar ambulance or mounted to a structure that is substantially similar to the ambulance floor
- (2) Employ a test fixture that simulates the cot for which the retention system is designed
- (3) Install the test fixture in the retention system in such a manner that will preclude contact friction with the floor or cabinet surfaces
- (4) Apply each force so that it passes through the location that corresponds to the center of gravity of a loaded patient cot
- (5) Apply the test force for 10 seconds in the fore, aft, side-to-side, and vertical directions relative to the direction of vehicle travel
- (6)* Replace any damaged parts after each application of force

9.5 Low Voltage Electrical System Test.

9.5.1* The ambulance low voltage electrical system shall be tested as required by this section, the test results shall be certified by the ambulance manufacturer, and the certified test results shall be delivered with the ambulance.

9.5.2 Tests shall be performed when the ambient air temperature is between 60°F and 110°F (15°C and 43°C).

9.5.3 Test Sequence.

9.5.3.1 The three tests defined in 9.5.3.2 through 9.5.3.4.4 shall be performed in the order in which they appear.

9.5.3.1.1 Before each test, the batteries shall be fully charged until the voltage stabilizes at the voltage regulator set point and the lowest charge current is maintained for 10 minutes.

9.5.3.1.2 Failure of any of these tests shall require a repeat of the sequence.

9.5.3.2 Reserve Capacity Test.

9.5.3.2.1 The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged.

9.5.3.2.2 The engine shall be shut off, and the minimum continuous electrical load shall be activated for 10 minutes.

9.5.3.2.3 All electrical loads shall be turned off prior to attempting to restart the engine.

9.5.3.2.4 The battery system shall then be capable of restarting the engine.

9.5.3.2.5 Failure to restart the engine shall be considered a test failure of the battery system.

9.5.3.3 Alternator Performance Test at Idle.

9.5.3.3.1 The minimum electrical load test conditions as stated in 7.3.2.1.1 shall be activated with the engine running at idle speed.

9.5.3.3.2 The engine temperature shall be stabilized at normal operating temperature.

9.5.3.3.3 The battery system shall be tested to detect the presence of battery discharge current.

9.5.3.3.4 The detection of battery discharge current shall be considered a test failure.

9.5.3.4 Alternator Performance Test at High Idle.

9.5.3.4.1 The operational electrical load test conditions as stated in 7.4.1 shall be activated with the engine running at high idle.

9.5.3.4.2 The test duration shall be a minimum of 30 minutes.

9.5.3.4.3 Activation of the load management system shall be permitted during this test.

9.5.3.4.4 An alarm sounded by excessive battery discharge, as detected by the warning system required in Chapter 7, or a system voltage of less than 11.8 volts dc for a 12-volt nominal system, 23.6 volts dc for a 24-volt nominal system, or 35.4 volts dc for a 42-volt nominal system for more than 120 seconds shall be considered a test failure.

9.5.4 Low Voltage Alarm Test.

9.5.4.1 The following test shall be started with the engine off and the battery voltage at or above 12 volts for a 12-volt nominal system, 24 volts for a 24-volt nominal system, or 36 volts for a 42-volt nominal system.

9.5.4.2 With the engine shut off, the total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates.

9.5.4.3 The battery voltage shall be measured at the battery terminals.

9.5.4.4 The test shall be considered a failure if the alarm does not sound in less than 140 seconds after the voltage drops to 11.70 volts for a 12-volt nominal system, 23.4 volts dc for a 24-volt nominal system, or 35.1 volts for a 42-volt nominal system.

9.5.4.5 The battery system shall then be able to restart the engine.

9.5.4.6 Failure to restart the engine shall be considered a test failure.

9.6 Patient Compartment Sound Level Test.

9.6.1 This test shall be performed during the following environmental conditions:

- (1) Temperature not to exceed 95°F (35°C).
- (2) Humidity not to exceed 75 percent relative humidity
- (3) Wind velocity not to exceed 12 mph (19 km/hr)
- (4) Barometric pressure 29 in. Hg to 31 in. Hg (98.2 kPa to 104.9 kPa)

9.6.2 The following actions shall be performed during the patient compartment sound level test:

- (1) Measure sound level using a meter that meets requirements of the ANSI S1.4, *Specification for Sound Level Meters*, for Type II meters with the meter set to A for a weighing network, “fast” meter response
- (2) Suspend the microphone 23 in. (584 mm) above the vehicle floor, centered laterally and longitudinally on the expected center of the patient cot as it will be secured in the patient compartment.
- (3) Park ambulance on a concrete or asphalt surface, at a location so that no large reflecting surfaces, such as other vehicles, signboards, buildings, or hills are within 50 ft (15.2 m) of the vehicle being tested
- (4) Close all ambulance doors, windows, and vents
- (5) Run air conditioner and heater blower fans in patient compartment at the highest speed
- (6) Set vehicle transmission in neutral gear and set the engine speed to the rpm obtained by the ambulance when operating on level ground at 55 mph (88 km/hr)
- (7) Turn on all warning lights
- (8) Operate siren in the loudest mode
- (9) Measure and record the highest sound level
- (10) Decrease the engine speed to idle and then back to the 55 mph (88 km/hr) rpm
- (11) Measure and record the highest sound level
- (12) Repeat until two maximum sound levels within 2 decibels (db) of each other are recorded
- (13) Numerically average these two maximum sound level readings

9.7 Reserved.

9.8 Handrail Static Load Test. The following actions shall be performed during the handrail static load test:

- (1) Apply force to handrail at the midpoint between every location where the handrail fastens to the vehicle body structure and as near as possible to the ends of the handrail as shown in Figure 9.8(1)

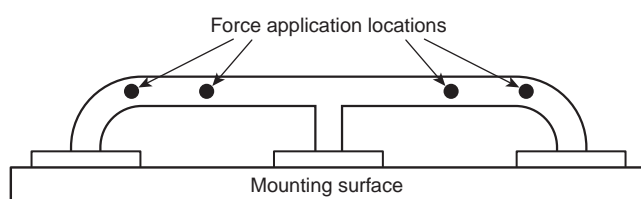


Figure 9.8(1) Location of Force Application on Handrail.

- (2) Apply the force perpendicular to the mounting surface

- (3) Apply the force parallel to the mounting surface

- (4) Apply the force diagonal to the mounting surface at an angle midway between the perpendicular and the parallel pulls as shown in Figure 9.8(4)

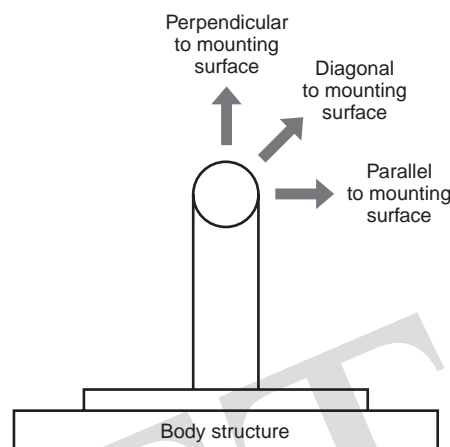


Figure 9.8(4) Direction of Force Application on Handrail.

- (5) Maintain each force application for 2 minutes

9.9* Line Voltage Electrical Systems Test.

9.9.1 The wiring and associated equipment shall be tested by the ambulance manufacturer or the installer of the line voltage system.

9.9.2* The electrical polarity of all permanently wired equipment, cord reels, and receptacles shall be tested to verify that wiring connections have been properly made.

9.9.3 Electrical continuity shall be verified from the chassis or body to all line voltage electrical enclosures, light housings, motor housings, light poles, switch boxes, and receptacle ground connections that are accessible to personnel in normal operations.

9.9.4 If the ambulance is equipped with a transfer switch, it shall be tested to verify operation and that all nongrounded conductors are switched.

9.9.5 Electrical light towers, floodlights, motors, fixed appliances, and portable generators shall be operated at their full rating or capacity for 30 minutes to ensure proper operation.

9.9.6* Certification Test of Power Source.

9.9.6.1 The ambulance manufacturer or installer of the power source shall perform a certification test on each power source.

9.9.6.2 The testing of any power source greater than 3 kW shall be witnessed, and the results of the tests of the power source shall be certified by an independent third-party certification organization.

9.9.6.3 Test Procedure.

9.9.6.3.1 The prime mover shall be started from a cold start condition, and the unloaded voltage and frequency shall be recorded.

9.9.6.3.2 The line voltage electrical system shall be loaded to at least 100 percent of the continuous rated wattage stated on the power source specification label.

9.9.6.3.3 Testing with a resistive load bank shall be permitted.

9.9.6.3.4 The power source shall be operated in the manner specified by the ambulance manufacturer as documented on instruction plates or in operation manuals.

9.9.6.3.5 The power source shall be operated at a minimum of 100 percent of the continuous rated wattage as stated on the power source specification label for a minimum of 2 hours.

9.9.6.3.5.1 The load shall be adjusted to maintain the output wattage at or above the continuous rated wattage during the entire 2-hour test.

9.9.6.3.5.2 The following conditions shall be recorded at least every 30 minutes during the test:

- (1) The power source output voltage, frequency, and amperage
- (2) The prime mover's oil pressure, water temperature, and transmission temperature, if applicable
- (3) The power source hydraulic fluid temperature, if applicable
- (4) The ambient temperature and power source air inlet temperature

9.9.6.3.5.3 The following conditions shall be recorded once during the test for power sources driven by dedicated auxiliary internal combustion engines:

- (1) Altitude
- (2) Barometric pressure
- (3) Relative humidity

9.9.6.3.6 If the generator is driven by the chassis engine and the generator allows for operation at variable speeds, the chassis engine speed shall be reduced to the lowest rpm allowed for generator operation and the voltage and frequency shall be recorded.

9.9.6.3.7 The load shall be removed, and the unloaded voltage and frequency shall be recorded.

9.9.6.3.8 Voltage shall be maintained within ± 10 percent of the voltage stated on the power source specification label during the entire test.

9.9.6.3.9 Frequency shall be maintained within ± 3 Hz of the frequency stated on the power source specification label during the entire test.

9.10 Water Leak Test. This test shall be performed during the following environmental conditions:

- (1) Temperature above 40°F (4°C)
- (2) Wind velocity not to exceed 10 mph (16 km/hr)

9.10.2 The following actions shall be performed during the waterleak test:

- (1) Close all windows and doors
- (2) Turn off heating, ventilating, and air conditioning (HVAC) systems
- (3) Drench the entire roof, sides, front, and back of the vehicle evenly with water spray from a nozzle or combination of nozzles
- (4) Continue spraying until a minimum of 40 gal (151 L) of water has been used
- (5) Start engine and operate the cab and patient compartment ventilation systems at maximum ventilation rates
- (6) Continue spraying until a minimum of 40 gal (151 L) of water has been used
- (7) Inspect the interior of the cab and patient compartment for water leaks during the duration of the test
- (8) At the conclusion of the test, examine all exterior lights and exterior compartments for leakage

9.11 Equipment Temperature Test. The following actions shall be performed during the equipment temperature test:

- (1) Locate the test vehicle in an environmental chamber capable of maintaining a temperature within $\pm 4^\circ\text{F}$ (2°C)
- (2) Turn off all vehicle power
- (3) Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors
- (4) Maintain an air velocity over the vehicle of at least 5 mph (8 km/hr) throughout the entire test
- (5) Cool the chamber to 32°F (0°C) and soak the vehicle at this temperature for a minimum of 3 hours
- (6) Start the engine
- (7) Operate all vehicle systems for 1 hour while maintaining 32°F (0°C) chamber temperature

(8) Shut off the engine

(9) Heat the chamber to 95°F (35°C) and soak the vehicle at this temperature for a minimum of 3 hours

(10) Start the engine

(11) Operate all vehicle systems for 1 hour while maintaining 95°F (35°C) chamber temperature

(12) Shut off the engine

9.12 Interior Climate Control Test. The following actions shall be performed during the interior climate control test:

- (1) Locate the test vehicle in an environmental chamber capable of maintaining a temperature within $\pm 4^\circ\text{F}$ (2°C)
- (2) Locate 3 thermocouples 7 in. (178 mm) off the floor along the patient compartment centerline and equally spaced from front to back
- (3) Locate 3 thermocouples 7 in. (178 mm) below the ceiling along the patient compartment centerline and equally spaced from front to back
- (4) Locate 3 thermocouples midway between the floor and the ceiling along the patient compartment centerline and equally spaced from front to back
- (5) Locate 3 thermocouples in the cab horizontally positioned 24 in. (600 mm) above the seat cushion and located 12 in. (300) in front of the headrest
- (6) Locate first and third thermocouples along the centerline of driver's and passenger's seats and center the second between the first and third
- (7) Turn off all vehicle power
- (8) Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors
- (9) Open engine hood
- (10) Maintain an air velocity over the vehicle of at least 5 mph (8 km/hr) throughout the entire test
- (11) Cool the chamber to $32^\circ\text{F} \pm 4^\circ\text{F}$ ($0^\circ\text{C} \pm 2^\circ\text{C}$) and soak the vehicle at this temperature for a minimum of 3 hours
- (12) Close all doors and hood with exception of partition doors (if present) and patient compartment/cab partition window (if present)
- (13) Set heaters in cab and patient compartment to maximum heating setting (maximum temperature, maximum blower speed, recirculating air)
- (14) Record the thermocouple temperatures
- (15) Shut off patient compartment dome lights
- (16) Start engine and maintain transmission in neutral or park and engine high idle on with a maximum engine speed of 1500 rpm
- (17) Record thermocouple temperatures at 5-minute intervals up to 30 minutes
- (18) Shut off the engine
- (19) Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors
- (20) Open engine hood
- (21) Heat the chamber to 95°F (35°C) with a minimum of 40-percent relative humidity and soak the vehicle at this temperature for a minimum of 3 hours
- (22) Close all doors and hood with exception of partition doors (if present) and patient compartment/cab partition window (if present)
- (23) Set air conditioners in cab and patient compartment to maximum cooling setting (maximum blower speed, coldest temperature setting, recirculating air)
- (24) Record the thermocouple temperatures
- (25) Shut off Patient compartment dome lights
- (26) Start engine and maintain transmission in neutral or park and engine high idle on with a maximum engine speed of 1500 rpm
- (27) Record thermocouple temperatures at 5-minute intervals up to 30 minutes
- (28) Shut off the engine

9.13 Reserved.

9.14 Engine Cooling System Test. The following actions shall be performed during the engine cooling system test:

- (1) Locate the test vehicle in an environmental chamber capable of maintaining a temperature within $\pm 4^{\circ}\text{F}$ (2°C)
- (2) Turn off all vehicle power
- (3) Open all patient compartment entry doors, cabinet doors, cab door windows, and exterior compartment doors
- (4) Heat the chamber to 95°F (35°C) and soak the vehicle at this temperature for a minimum of 3 hours
- (5) Start the engine
- (6) Close all doors, hood, partition door (if present), and patient compartment/cab partition window (if present)
- (7) Maintain an air velocity over the vehicle of at least 5 mph (8 km/hr) throughout the entire test
- (8) Set air conditioners in cab and patient compartment to maximum cooling setting (maximum blower speed, coldest temperature setting, recirculating air)
- (9) With all other ambulance equipment off, operate the engine at high idle for 1 hour

9.15 Ambulance Main Oxygen System Test.

9.15.1 Pressure Test. The following actions shall be performed during the engine cooling system test:

- (1) Ensure that the ambulance temperature has stabilized in an environment between 34°F and 110°F (1°C and 43°C)
- (2) Charge the system with approximately 200 psi (1380 kPa) of test gas
- (3) Close system valves to trap pressure in the lines that contain the vent valve
- (4) Record system pressure with an accuracy of ± 0.1 psi (7 kPa)
- (5) Allow system to rest without disturbance for 2 hours
- (6) Record system pressure

9.15.2 Flow Test. The following actions shall be performed for the flow test:

- (1) Ensure that the ambulance temperature has stabilized in an environment between 34°F and 110°F (1°C and 43°C)
- (2) Charge the system with test gas regulated to $50 \text{ psi} \pm 2 \text{ psi}$ ($345 \text{ kPa} \pm 14 \text{ kPa}$)
- (3) Plug all outlets other than the one being tested
- (4)* Measure and record the flow of gas from each outlet using a flowmeter with an accuracy of $\pm 2 \text{ L/min}$
- (5) Check the electrical continuity between the oxygen system piping and the vehicle to verify that it is grounded.

9.16 Patient Compartment Lighting Level Test. The following actions shall be performed for the patient compartment lighting level test:

- (1) Prepare the ambulance or locate it in an environment to prevent light from penetrating into the patient compartment
- (2) Remove the patient cot
- (3) Start the engine
- (4) Turn on dome lights to highest setting
- (5) Measure and record the light intensity along the longitudinal centerline of the patient compartment floor every 10 in. (254 mm)
- (6) Turn on the lights that come on with the side entry door or rear entry door
- (7) Measure and record the light intensity along the longitudinal centerline of the patient compartment floor every 10 in. (254 mm)
- (8) Measure and record the light intensity in the center of the side entry step well and record the reading
- (9) Install the patient cot test grid shown in Figure 9.16(9), 17 in. (432 mm) above the patient compartment floor, centered laterally and longitudinally on the expected center of the patient cot as it will be secured in the patient compartment

(10) Measure and record the light intensity in the center of each 5 in.^2 (322 mm^2) area on the test grid

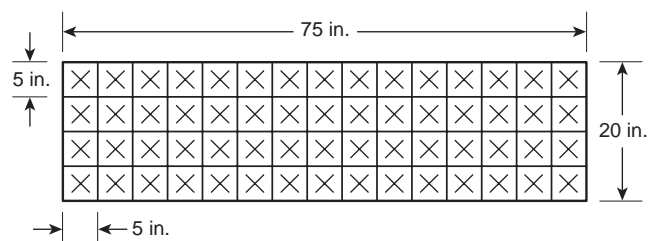


Figure 9.16(9) – Patient Cot Test Grid Top View.

9.17 Reserved.

9.18 Rear Stepping Surface Load Test. The following actions shall be performed during the rear stepping surface load test:

- (1) Support the ambulance or substantially similar structure to negate the effect of the vehicle suspension
- (2) Apply vertical load on the stepping surface using a fixture that distributes the load over a circular area 5 in. (127 mm) in diameter
- (3) Apply 500 lb (227 kg) of load to the lateral and longitudinal center of the stepping surface
- (4) Record deflection during the load application
- (5) Release the load
- (6) Measure and record any permanent deformation after the load is released
- (7) Apply 500 lb (227 kg) of load to the longitudinal center of the stepping surface as close to each of the lateral extremes as the test fixture will allow
- (8) Record deflection during the load application
- (9) Release the load
- (10) Measure and record any permanent deformation after the load is released

9.19 Reserved.**9.20 Reserved.**

9.21 Aspirator System Test. The following actions shall be performed during the aspirator system test:

- (1) Ensure that the ambulance temperature has stabilized in an environment between 34°F and 110°F (1°C and 43°C)
- (2) Run the vehicle engine at high idle speed for duration of the test

9.21.3 Vacuum Test. The following actions shall be performed during the vacuum test:

- (1) Install a 120 in. (3 m) length of transparent or translucent, nonkinking suction tubing on the collection bottle
- (2) Install a vacuum-measuring instrument capable of an accuracy of $\pm 5 \text{ mm Hg}$ to measure the vacuum in the collection bottle
- (3) Open the vacuum control and shutoff valve to their full open position
- (4) Turn on vacuum pump
- (5) Clamp or plug end of suction tubing
- (6) Measure and record the vacuum 4 seconds after plugging the tubing

9.21.4 Flow Test. The following actions shall be performed during the flow test:

- (1) Install a flow-measuring instrument capable of an accuracy of $\pm 1 \text{ L/min}$ to measure the flow in the suction tubing
- (2) Open the vacuum control and shutoff valve to their full open position
- (3) Turn on vacuum pump
- (4) Measure and record the flow

9.22 Reserved.**9.23 Reserved.**

9.24 Perimeter Illumination Test. The following actions shall be performed during the perimeter illumination test:

- (1) Locate the ambulance in dark environment
- (2) Ensure that the vehicle batteries are fully charged
- (3) Record light intensity with a meter capable of measuring to an accuracy of ± 0.01 fc
- (4) Construct a grid of test points off of the sides and rear of the test ambulance as shown in Figure 9.24(4)
- (a) Locate lines parallel with the exterior walls of the patient compartment 60 in. and 120 in. (1524 mm and 3048 mm) from the test unit
- (b) Intersect these lines with lines perpendicular to the exterior walls emanating from each corner and the mid-point of the patient compartment
- (c) Construct additional perpendicular lines emanating from the center of each scene light
- (5) Measure and record the light intensity at each point in the grid
- (6) Turn on all exterior scene lights
- (7) Measure and record the light intensity at each point 3 in. (76 mm) above the grid
- (8) Subtract the ambient light readings from the scene light readings

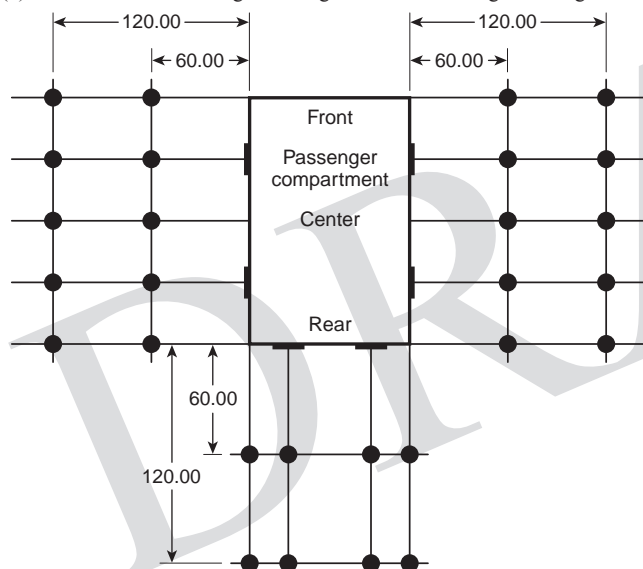


Figure 9.24(4) Perimeter Illumination Test Grid.

9.25 Occupant Head Clearance Zones Test.

9.25.1 The following actions shall be performed during the occupant head clearance zones test:

- (1) Construct a rigid rectangular test box 43 in. (1092 mm) high, 24 in. (457 mm) wide, and 15 in. (381 mm) deep
- (2) Place the test box in each seating position, centered laterally on the seat cushion, with the bottom edge resting against the seat back
- (3) Align the test box so that the sides of the box are perpendicular to the patient compartment floor

9.25.2 The maximum weight for the test fixture shall not exceed 60 lb (27 kg).

9.25.3 No permanent objects shall protrude into the test box zone.

Annex A Explanatory Material

Annex A is not a part of the requirements of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.

A.1.1 The term *new* as applied in this standard is intended to refer to the original construction of an ambulance using all new materials and parts.

A.1.4 It is not intended that this standard be applied retroactively to existing ambulances. However, if major renovations are made to an existing ambulance, it is suggested that the ambulance be brought into line with this standard as closely as possible.

A.1.6 Metric units of measurement in this standard are in accordance with the modernized metric system known as the International System of Units (SI). The liter, a unit that is outside of but recognized by SI, is commonly used in international fire protection. Table A.1.6(a) and Table A.1.6(b) provide U.S.-to-SI conversion factors and SI-to-U.S. conversion factors as an aid to the user. Table A.1.6(c) provides other conversion factors that could be useful to the reader. Table A.1.6(d) provides a list of the abbreviations used in this standard and their meanings.

Table A.1.6(a) Conversion Factors: U.S. Customary Units to SI Units	
U.S. Customary Units	SI Units
1 gallon per minute (gpm)	3.785 liters per minute (L/min)
1 imperial gallon per minute (igpm)	4.546 liters per minute (L/min)
1 pound per square inch (psi)	6.895 kilopascals (kPa)
1 inch of mercury (in. Hg) at 60°F (15.6°C)	3.377 kilopascals (kPa)
1 inch (in.)	25.40 millimeters (mm)
1 foot (ft)	0.305 meter (m)
1 cubic foot (ft ³)	0.0283 cubic meter (m ³)
1 square inch (in. ²)	645.2 square millimeters (mm ²)
1 mile per hour (mph)	1.609 kilometers per hour (km/hr)
1 pound (lb)	0.454 kilogram (kg)
1 horsepower (hp)	0.746 kilowatt (kW)
1 candlepower (cp)	12.566 lumens
1 pound per cubic foot (lb/ft ³)	16 kilograms per cubic meter (kg/m ³)
1 footcandle (fc)	10.764 lux (lx)
1 footlambert	3.427 candela/m ²

Table A.1.6(b) Conversion Factors: SI Units to U.S. Customary Units	
SI Units	U.S. Customary Units
1 liter per minute (L/min)	0.264 gallon per minute (gpm)
1 liter per minute (L/min)	0.22 imperial gallon per minute (igpm)
1 kilopascal (kPa)	0.145 pound per square inch (psi)
1 kilopascal (kPa)	0.2962 in. Hg at 60°F (15.6°C)
1 millimeter (mm)	0.0394 inch (in.)
1 meter (m)	3.281 feet (ft)
1 cubic meter (m ³)	35.31 cubic feet (ft ³)
1 square millimeter (mm ²)	0.00155 square inch (in. ²)
1 kilometer per hour (km/hr)	0.6214 mile per hour (mph)
1 kilogram (kg)	2.2 pounds (lb)
1 kilowatt (kW)	1.34 horsepower (hp)
1 lumen	0.08 candlepower (cp)
1 kilogram per cubic meter (kg/m ³)	0.062 pound per cubic foot (lb/ft ³)
1 lux (lx)	0.092 footcandle (fc)
1 candela/m ²	0.292 footlambert

Table A.1.6(c) Other Useful Conversion Factors

1 gallon per minute (gpm)	0.833 imperial gallon per minute (igpm)
1 imperial gallon per minute (igpm)	1.2 gallons per minute (gpm)
1 foot (ft) of water	0.433 pound per square inch (psi)
1 pound per square inch (psi)	2.31 feet (ft) of water
1 metric ton (mton)	1000 kilograms (kg)
1 kilopascal (kPa)	0.01 bar
1 bar	100 kilopascals (kPa)

Table A.1.6(d) Abbreviations Used in This Standard

Abbreviation	Term
ac	alternating current
C	Celsius
cd	candela(s)
dc	direct current
EMSP	emergency medical services provider
F	Fahrenheit
fc	footcandle(s)
ft	foot (feet)
gpm	gallon(s) per minute
hp	horsepower
in.	inch(es)
in. Hg	inch(es) of mercury
kg	kilogram(s)
km/hr	kilometer(s) per hour
kPa	kilopascal(s)
kW	kilowatts(s)
L	liter(s)
L/min	liter(s) per minute
lx	lux
m	meter(s)
mm	millimeter(s)
mph	mile(s) per hour
NH	National Hose
psi	pound(s) per square inch
rms	root mean square
V	volt(s)

A.3.2.1 Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

A.3.2.2 Authority Having Jurisdiction (AHJ). The phrase “authority having jurisdiction,” or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority

having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

A.3.2.4 Listed. The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.

A.3.3.3.1 Substantially Similar Ambulance. It is not practical to test every production vehicle to validate performance compliance. The substantially similar definition allows those requirements that call for a test on a substantially similar ambulance to be performed once, rather than on every production vehicle. An ambulance in which what is being compared cable apply to the test being considered for an ambulance in which like areas are compared.

For chassis-related tests, substantially similar refers to an ambulance with a chassis that employs the same make and engine model. For patient compartment-related tests, substantially similar refers to an ambulance make where the relevant construction methods and configuration are comparable.

A.3.3.13 Contractor. The contractor might not necessarily manufacture the fire apparatus or any portion of the fire apparatus but is responsible for the completion, delivery, and acceptance of the entire unit.

A.3.3.17 Electronic Siren. Varied types of warning sounds can be produced by electronic sirens, such as a wail, yelp, or simulated air horn.

A.3.3.26 Grade. A 45-degree slope is equal to a 100-percent grade.

A.3.3.37 Loose Equipment. Such equipment may include, but not be limited to, medicines, first-aid supplies, oxygen tanks, child seats, and personal dunnage.

A.3.3.42 Optical Source. An optical source can consist of a single optical element or a fixed array of any number of optical elements whose geometric positioning relative to each other is fixed by the manufacturer of the optical source and is not intended to be modified.

A.3.3.65.1 Curb Weight. The curb weight includes such items as the chassis; cab; body; batteries; spare tire; jack; tire changing tools; and any other permanently attached or dedicated equipment along with a full complement of fuel, lubricants, and coolant.

A.3.3.66.1 Gross Axle Weight Rating (GAWR). It is a requirement of the National Highway Traffic Safety Administration (NHTSA) that the GAWR be posted in the vehicle on a permanently affixed label. The axle system includes, but is not limited to, the axle, tires, suspension, wheels, frame, brakes, and applied engine torque.

A.3.3.66.3 Gross Vehicle Weight Rating (GVWR). It is a requirement of the National Highway Traffic Safety Administration (NHTSA) that the GVWR of a vehicle be posted in the vehicle on a permanently affixed label. The GVWR can be equal to or less than the sum of the front GAWR and the rear GAWR. The in-service weight or gross vehicle weight should always be equal to or less than the GVWR.

A.4.6.9 Drawings should be included in the test report where they will assist in documenting the configuration of the components or systems being tested. Drawing details can include views of the entire vehicle where appropriate as well as material sizes, thicknesses, welds, fasteners, adhesive coverage, and so forth of the critical regions that would be established as “minimums” for the respective location and function of the tested component or system.

A.4.8.1 The engine compartment and the underside of the vehicle are not considered areas of normal nonmaintenance operation.

A.4.9.2 All required signs, instruction plates, and labels should be highly visible and placed on the vehicle where they are not subject to damage from wear and tear.

A.4.10.1 The attachment of electric, air, hydraulic, and other control lines and hoses should be with removable mechanically attached fastening devices. The attachment of such equipment with adhesive or glue-on clamps or clips has been found to be inadequate for long-term performance on ambulances. The use of plastic ties to bundle wire harnesses and hose is permissible, but ties should not be used to attach such items to a cab, body, frame, or other major structure.

A.4.11 This section describes a range of operating measures of the vehicle and there may be different performance criteria specified for different tests. This section is not intended to prescribe test requirements for all ambulance characteristics. Refer to Chapter 9 for individual ambulance performance test requirements.

A.4.11.2 The purchaser should determine the types of grades the ambulance will be expected to operate on when it is in stationary operation. The occasional exposure to grades in excess of that required by this standard while

moving over roadways is different from prolonged stationary operations. The vehicle might require special lubrication systems for engines and other modifications to ensure that it will not be damaged by operation on the increased grades.

A.4.11.3 This standard specifies various temperature ranges for the ambulance or ambulance systems based on their use. While the ambulance as a whole is required to operate satisfactorily in low temperatures, it is not crucial that the engine-starting capability be as low as the ambient temperature since most operations in cold climates will keep working ambulances in a garage or will use an engine block heater. Components or systems in the interior of the ambulance do not need to function at extremely low ambient temperatures since the interior of the ambulance will be maintained at higher temperatures by the HVAC system. The purchaser should consider the climate that the ambulance will operate in and specify temperatures outside these minimum standard ranges if appropriate.

The interior of the ambulance patient compartment should be maintained at a minimum temperature of 50°F (10°C) when the ambulance is prepared for immediate response. The purchaser should consider how this will be accomplished. If the ambulance will not be housed in a heated facility, then other means may be required to ensure that this requirement is met. This requirement does not apply to ambulances that are fully operational but being held in reserve or ambulances that are not fully operational.

A.4.12.4 Although this standard recognizes the need for the ambulance to be able to accelerate to a high speed while traveling on public roads, caution should be taken with regard to how fast the ambulance can travel.

Where the ambulance has to operate off paved roads, all-wheel drive, a two-speed rear axle, an auxiliary transmission, an automatic transmission, or any combination of these might enhance the ambulance's off-road capability.

A.4.15 It is important for the purchaser and the contractor to agree on the format in which the documentation is to be delivered. It is also important that the purchaser consider the long-term ramifications of changing media technology if electronic format is used for delivery of the documentation. Software and hardware will need to be maintained over the years to utilize electronic documentation.

A.4.15.2 It is critical that the purchaser provide the manufacturer the equipment inventory and mounting locations for equipment on the ambulance. This information should include existing equipment and estimated future equipment to be carried. The projections of total equipment payload and mounting locations are essential for proper engineering of a new ambulance. It is the responsibility of the purchaser to properly load the ambulance and place equipment to comply with the GVWR, the front-to-rear weight distribution, and the right-to-left load balance requirements of this standard.

A.4.16.2.3 Suppliers of components and equipment installed or supplied by the contractor often supply operations and maintenance documents with those components or equipment. This standard requires that the contractor deliver these documents to the purchaser. The purchaser should specify if multiple copies of these documents are required.

A.4.16.3.1 The label shown in Figure 4.16.3.1 is a suggested format. Deviations in dimensions are acceptable.

A.5.1.3.2 It is important for ambulance drivers to understand the height and weight of the vehicle compared to their personally owned vehicles. It is also important that this information be accurate. If anything is added above the roofline height as delivered, the plate should be changed to reflect the new height. Suggested wording for the plate is shown in Figure A.5.1.3.2.

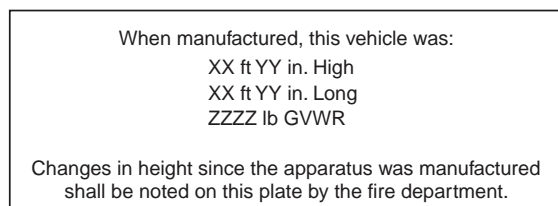


Figure A.5.1.3.2 Vehicle Height and Weight Plate.

A.5.2 For weight distribution measurement and calculation methods payload determination subtract the total curb weight of the completed vehicle from the GVWR. Any permanently attached, optional items of equipment specified by the customer are to be included in the curb weight of the completed vehicle. Any other items of optional equipment (i.e., not permanently attached and/or removable) are to be included in the payload requirement.

A.5.2.2 The projections of total equipment payload and mounting locations are essential for proper engineering of a new ambulance. The purchaser of the ambulance should maintain the side-to-side loading requirement in 5.2.2 as equipment is loaded or installed on the ambulance.

The percentage difference in side-to-side tire load should be calculated as shown in the following formula:

$$\frac{(\text{Heavier weight} - \text{Lighter weight})}{\text{Total weight}} \times 100 = \text{Percent difference}$$

A.5.4.1 An increase in engine speed provides increased alternator output, increased engine cooling, increased air conditioner output, and increased output or performance from other devices that derive their power from the chassis engine.

A.5.5.1 Where local environmental extremes exist, that is, high humidity and temperatures or extreme low temperatures, the purchaser should state specifically under what environmental conditions the ambulance is expected to operate.

A.5.7.3 Purchasers of ambulances should also consider equipping the ambulance with an auxiliary braking system. Ambulances commonly make repeated stops from high speeds that cause rapid brake lining wear and brake fade, sometimes leading to accidents.

Auxiliary braking systems are recommended on ambulances that are exposed regularly to steep or long grades, operate in congested areas where repeated stops are normal, or respond to a high number of emergencies.

Examples of auxiliary braking systems include engine retarders, transmission retarders, exhaust retarders, and driveline retarders. These devices have various levels of effectiveness on braking. In addition, the systems can be activated by various means and settings, both automatic and manual in operation. The purchaser should carefully evaluate all auxiliary braking systems based on vehicle weight, terrain, duty cycle, and many other factors.

Some auxiliary braking devices should be disconnected when the ambulance is operated on slippery surfaces. Follow the auxiliary braking device manufacturer's recommendations for proper instructions.

A.5.8.1 The angle of approach or departure affects the road clearance of the vehicle going over short, steep grades such as would be found in a driveway entrance, crossing a high crowned road at a right angle, or off-road service. Too low an angle of approach or departure will result in the vehicle scraping the ground. Figure A.5.8.1 shows the method of determining the angle of departure. The angle of approach (front of vehicle) is measured in the same fashion.

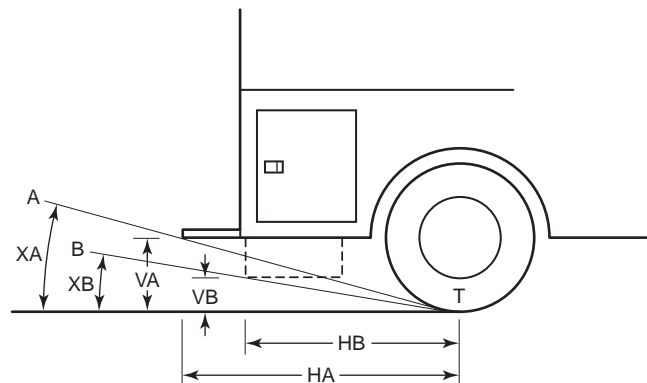


Figure A.5.8.1 Determination of Angle of Approach.

In Figure A.5.8.1, the line AT represents the circumstance in which the rear bumper is the determining lowest point. The line BT represents a circumstance in which the rear bumper is not the lowest point (in this case, the lowest point is a fuel tank). The angle of departure is shown as XA or XB. To determine the angle of departure, complete the following steps:

- (1) Place a thin steel strip against the rear of the tires where they touch the ground or stretch a string tight from one rear tire to the other at the rear of where they touch the ground
- (2) Determine the lowest point (the bumper, fuel tank, or other equipment or component) that would make the smallest angle of departure

- (3) Hang a plumb bob from the lowest point and mark the point on the ground where the point of the plumb bob touches
- (4) Measure the vertical distance from the ground to the point where the plumb bob was hung (distance V)
- (5) Measure the horizontal distance from the plumb bob point to the front of the steel strip or to the string running from rear tire to rear tire (distance H)
- (6) Divide the vertical distance (V) by the horizontal distance (H)

The ratio of V/H is the tangent of the angle of departure. If this ratio is known, the angle of departure can be determined from a table of trigonometric functions of angles or from a math calculator.

A.5.8.2 Traction control features can include positive locking differential, limited slip differential, electronic traction control, and so forth.

A.5.9.5 Proper tire inflation is essential to the safe operation of any motor vehicle. Proper inflation improves the handling characteristics and minimizes the risk of rollover.

A.5.10 Electronic stability control (ESC) uses a steering wheel position sensor, a vehicle yaw sensor, a lateral accelerometer, and individual wheel brake controls in conjunction with the antilock brake system (ABS). The system tracks the direction that the driver intends to steer and uses brake application at individual wheels to help straighten out the vehicle. This system greatly enhances the safety of the vehicle, and the purchaser should consider adding ESC to the ambulance if available as an option or consider purchasing an ambulance configuration that offers ESC.

A.5.11.1 The purchaser may wish to specify front and/or rear tow hooks or tow eyes be attached to the frame structure to allow towing (not lifting) of the ambulance without damage.

A.5.11.2.8.7 The intent of step size and placement requirements is to ensure that the foot is supported when it is placed on the step in the normal climbing position. In some cases the most natural method of mounting a step may not be perpendicular to the leading edge (common on chassis where it would be natural not to open the door completely to the 90-degree point and enter the door opening at a diagonal from the rear). In these cases, the clearance measurement can be taken diagonally across the step in the natural direction of climb.

A.5.14 Purchasers may wish to consider specifying that all mirror head faces be independently adjustable from the driver's position when this feature is available from the OEM.

A.6.7.5 Unless otherwise specified by the purchaser to delete walkthrough or to specify or approve alternate door opening dimensions, the door opening shall be at least 17 in. (43 cm) wide and 46 in. (117 cm) high and shall provide an aisle between the compartments. The door shall have at least a 150 in.² (968 cm²) transparent, shatterproof viewing panel in the center section at the driver's eye level. The door should be secured cab side self-latching device in the open and closed positions.

A.6.9.7 The requirement of 6.9.7 does not apply to both rear doors – only the primary door.

A.6.16 The following measuring guidelines are for cabinets and compartments: [Consider making this a separate annex. The amount of info and level of detail would be best suited as an annex]

- (1) Cabinet depth: The dimension from the cabinet inside back wall to the outside cabinet face.
- (2) Compartment depth: The dimension from the compartment inside back wall to the outside compartment face.
- (3) Door OD: The door overall outside thickness (dimension).
- (4) Depth ID: The actual interior depth either measured or figured by subtracting the Door OD from the cabinet or compartment measured depth.
- (5) Height ID: The dimension from the interior bottom surface to the interior surface of the cabinet or compartment top.
- (6) Width ID: The dimension from one interior surface to the next interior surface of the cabinet or compartment.
- (7) Sliding window track: The track used for sliding cabinet windows.
- (8) Sliding cabinet windows: The sliding doors used on interior cabinets.

The *area* of an interior cabinet with sliding doors or roll-up doors [shown in Figure A.6.16(a)] is determined as follows:

- (1) Measure from the back of the rear wall to the back of the sliding window track and record that dimension for Depth ID

- (2) Measure from cabinet interior wall to wall and record dimension for Width ID
- (3) Measure from the interior top to bottom and record dimension for Height ID
- (4) Multiply Height ID \times Width ID \times Depth ID and divide by 1728 for cubic feet

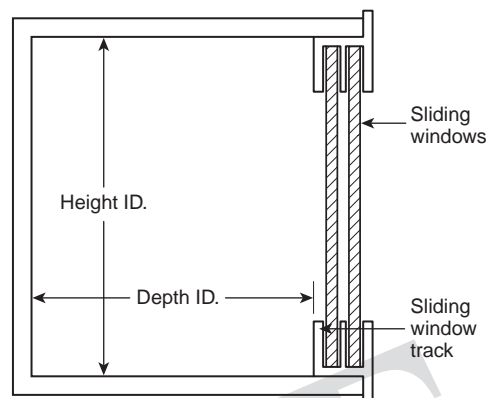


Figure A.6.16(a) Measurements of Interior Cabinets with Sliding Doors or Roll-up Doors.

The *area* of an interior cabinet with hinged doors [shown in Figure A.6.16(b)] is determined as follows:

- (1) Measure from the back of the door to the face of the door and record dimension for Door OD
- (2) Measure from the back of the rear wall to the cabinet face and record dimension for cabinet depth
- (3) Subtract the Door OD from the cabinet depth for Depth ID
- (4) Measure from cabinet interior wall to wall and record dimension for Width ID
- (5) Measure from the interior top to bottom and record dimension for Height ID
- (6) Multiply Height ID \times Width ID \times Depth ID and divide by 1728 for cubic feet

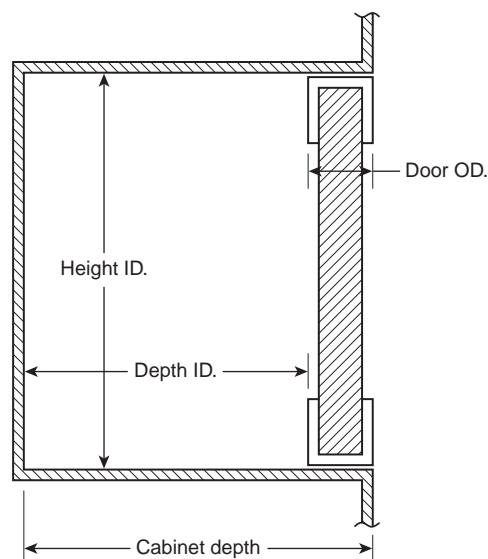


Figure A.6.16(b) Measurements of Interior Cabinets with Hinged Doors.

The area of an exterior compartment with hinged doors [shown in Figure A.6.16(c)] is determined as follows:

- (1) Measure from the back of the door to the face of the door and record dimension for Door OD
- (2) Measure from the back of the rear wall to the cabinet face and record dimension for cabinet depth
- (3) Subtract the Door OD from the cabinet depth for Depth ID
- (4) Measure from cabinet interior wall to wall and record dimension for Width ID
- (5) Measure from the interior top to bottom and record dimension for Height ID
- (6) Multiply Height ID \times Width ID \times Depth ID and divide by 1728 for cubic feet

NOTE: Subtract any notches for spring shackles or fuel systems from the total to get the correct total cubic feet.

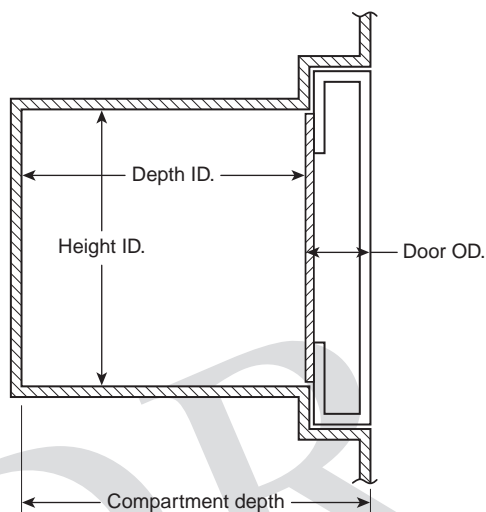


Figure A.6.16(c) Measurements for Exterior Compartments with Hinged Doors.

A.6.19 Each disposable container should be mounted inside a fixed container capable of withstanding a moderate crash without dispersing its contents into the patient compartment.

A.6.21.2 It is not recommended that SCBA packs be stored in the patient compartment because of the risk of contamination. If the purchaser does specify SCBA storage in seat backs, then they should meet the requirements found in NFPA 1901.

A.6.21.3.1 The ultimate mission of any ambulance is to safeguard the health and welfare of the patient being transported. This mission fails if the ambulance does not arrive safely. To this end it is essential that the ambulance is driven in a safe manner and that all occupants are seated and belted while the vehicle is in motion. During emergency responses, emergency medical personnel could be inclined to take more risks than usual and to skip basic vehicle safety precautions. To encourage safe practices, ambulance operation management should consider employing some method of monitoring the driving habits of the ambulance personnel. Several methods of monitoring compliance of all safety precautions by personnel in the vehicle including available live video monitoring, video recording, and vehicle data recording. Any monitoring method should include monitoring of the use of seat belts, and an indication of how carefully the ambulance is being driven.

Purchasers may wish to consider specifying seat belt colors such as bright red or bright orange. Bright belt colors are easier to see on videos or by observation through the window when enforcing seat belt use compliance.

Seat belt design is critical to safety during a crash. Seat belts should conform to FMVSS 210 S4.3.1.1 which requires that the lap portion of the belt in any designated seating position does not constrain the occupant high across the belly.

A.6.23 Some chassis used on ambulances may not be capable of providing independent control of the HVAC units between the cab and the patient compartment. Purchasers may wish to consider chassis selection if this is a feature that is important in the climate where the ambulance will be used.

A.6.25 Retro-reflective contour stripes of any color affixed to the front, rear, and side surfaces of the ambulance to outline the vehicle profile may provide additional conspicuity. The purchaser may wish to consider including this in the specification.

A.6.25.1 If the purchaser specifies exterior doors, consideration should be given to affixing the stripe of reflective material in a location that will not be obscured or lost when the doors are open.

A.7.1 This chapter defines the requirements for alternators, batteries, load management, and instrumentation to detect incipient electrical system failure. The intent is to require an electrical system that will operate the ambulance using power supplied by the alternator, shed nonessential electrical loads when necessary, and provide early warning of electrical failure in time to permit corrective action.

A.7.2.1.1 The 125-percent requirement for wiring and circuits is intended to provide reduced voltage drop over wire rated based on ampacity due to heating. In low voltage wiring, voltage drop becomes a problem before the thermal limit of current carrying capacity of a wire is reached. This requirement also ensures that the circuit protection will prevent damage to the wire in the event of a short or an overload. It is not the intent of this requirement to have the final-stage manufacturer replace the chassis manufacturer's original equipment wiring to meet the 125-percent requirement. It is also not the intent of this requirement to have electrical accessories purchased by the ambulance manufacturer rewired to meet the 125-percent requirement. Electrical device manufacturer-supplied wiring can be used to the point where it connects to the ambulance manufacturer's installed wiring.

A.7.2.2.9 It is the intent of 7.2.2.9 to provide a unique means of identifying a wire or circuit to prevent confusing it with another wire or circuit if electrical system repairs become necessary. If a color coding scheme is used instead of some other unique identification, that color should not be reused for a wire in any unrelated circuits within the same harness. However, 7.2.2.9 covers low voltage wiring only and does not apply to shielded cables commonly used for communication purposes or wiring used in line voltage circuits.

A.7.3.2 The minimum alternator size is developed using the loads required to meet the minimum continuous electrical load. Most ambulances will actually have loads exceeding the minimum requirements of this standard. The purchaser should review the maximum current output of the alternator versus the load study supplied for the ambulance from the manufacturer for on-scene and responding modes.

A.7.4.1(10) The purchaser should analyze the electrical loads that need to be maintained to fulfill the mission of the ambulance and define those loads for the manufacturer of the ambulance. The purchaser needs to understand, however, that there is a limit to the output capacity of an alternator system on the ambulance's engine and that this standard requires that the ambulance be capable of maintaining the minimum continuous electrical load under the conditions defined in 7.3.2. When that load is exceeded and larger alternators are not available, the purchaser and the manufacturer need to work together to determine how to reduce the minimum continuous electrical load to that which can be sustained under the conditions defined in 7.3.2.

A.7.4.3 The unexpected shutdown of an ambulance during a response can place patients in mortal danger and seriously affect the life-saving ability of the crew. With computer-controlled engines and transmissions as well as other controls, an electrical system failure could result in an immediate and total shutdown of the ambulance. The low voltage monitoring system is intended to provide an early warning of an impending electrical failure and provide enough time to permit operator intervention.

A.7.5.1 Electrical loads on ambulances frequently exceed the alternator capacity. Exceeding alternator capacity will result in the deep discharge of the ambulance batteries. Automatic load management is intended to protect the batteries and electrical system from needless damage while maintaining the operation of essential devices.

It is important that the priority of all managed loads be specified by the purchaser so that, as electrical loads are disconnected from the ambulance's electrical systems, they are shed in an order least likely to affect emergency operations. Optical warning devices in excess of the minimum required in this standard can and should be load managed.

A.7.6 Batteries usually have two ratings: "cold cranking amperes," which determine the size engine that can be started, and "reserve capacity," which provides a measure of the total power that can be provided at a much lower constant rate of discharge. Ambulance batteries should be sized to have enough cold cranking amperage and reserve capacity to restart the engine after being substantially discharged.

A.7.6.3.3 Overheating of a battery will cause rapid deterioration and early failure. Evaporation of the water in the battery electrolyte can also be expected.

A.7.6.5 The power cord from the onboard charger or battery conditioner should be plugged only into a receptacle protected by a ground-fault circuit interrupter (GFCI) at the shoreline origination point.

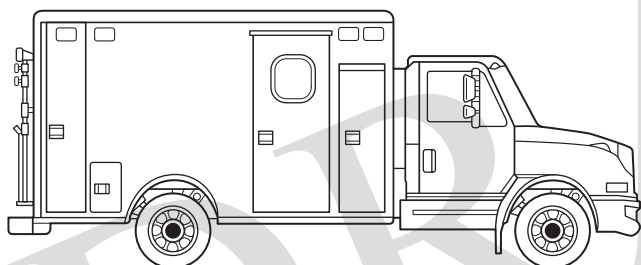
A.7.6.7 The purchaser might want to add an illuminated “Module Disconnect” switch that could control all electrical loads for the module. The illuminated switch could control a solenoid. If the switch is specified, it should be located in the driver’s compartment, be legibly marked, illuminated when “ON,” and rated to carry at least 125 percent of the circuit’s maximum current, unless it operates a solenoid. If the switch operates a solenoid then the solenoid should be rated for 125 percent of the circuit’s maximum current. The module disconnect switch or device should be different in feel from other switches or be physically isolated from them.

A.7.8 SAE J551/1 provides test procedures and recommended levels to assist engineers in the control of broadband electromagnetic radiation and in the control of radio interference resulting from equipment installed on the ambulance. Adherence to the recommended levels will minimize the degradation effects of potential interference sources in the communication equipment or other devices susceptible to electromagnetic interference.

Procedures are included to measure the radiation from a single device or the entire ambulance. Compliance could be determined through actual tests on the completed ambulance or predictions based on tests previously conducted on similarly equipped ambulance. If compliance certification is required, it should be so indicated in the ambulance specifications.

A.7.9.1 The upper-level optical warning devices provide warning at a distance from the ambulance and the lower-level optical warning devices provide warning in close proximity to the ambulance. (See Figure A.7.9.1.)

Upper-level optical warning device



Lower-level optical warning device

FIGURE A.7.9.1 Upper- and Lower-Level Optical Warning Devices.

A.7.9.7.3 Under typical conditions, the specified optical warning system provides effective, balanced warning. In some situations, however, the safety of the ambulance can be increased by turning off some warning devices. For example, if other vehicles need to pass within close proximity to the parked ambulance, the possibility of distracting other drivers can be reduced if the headlights and lower-level warning lights are turned off. In snow or fog, it might be desirable to turn off forward-facing strobes or oscillating lights to reduce visual disorientation of the ambulance driver.

The intent of the warning light system is to provide full coverage signals through the operation of a single master switch when the ambulance is either responding or blocking the right-of-way. There is no intent to prevent the use of lower levels of warning when the ambulance driver believes such reductions are appropriate, given the vehicle’s mission, the weather, or other operational factors. Additional switches downstream of the master switch can be specified by the purchaser to control individual devices or groups of devices.

Purchasers might want to specify traffic flow-type lighting such as amber directional indicators for use in alerting approaching motorists of blocked or partially blocked highways.

A.7.9.10 When a component such as a flasher or power supply is used to operate more than one optical source, the optical sources should be connected so that the failure of this component does not create a measurement point without a warning signal at any point in any zone on either the upper or lower level. Although a single optical source can be used to provide warning signals into more than one zone, the possibility of a total signal failure at a measurement point is increased when the same flasher or power supply is used to operate multiple optical sources, each providing signals into more than one zone.

A.7.9.12 Flashing headlights are used in many areas as warning lights and provide an inexpensive way to obtain additional warning to the front of the ambulance. Daylight flashing of the high beam filaments is very effective and is generally considered safe. Nighttime flashing could affect the vision of oncoming drivers as well as make driving the ambulance more difficult.

In some jurisdictions, headlight flashing is prohibited or limited to certain types of emergency vehicles. If flashing headlights are employed on ambulance, they are to be turned off when the ambulance headlights are on. They should also be turned off along with all other white warning lights when the ambulance is in the blocking mode.

Steady burning headlights are not considered warning lights and can be illuminated in the blocking mode to light the area in front of the ambulance. Consideration should be given, however, to avoid shining lights into the eyes of oncoming drivers.

A.7.9.13 The minimum optical warning system should require no more than an average of 40 amperes for the operation of the upper-level and lower-level devices in the blocking mode. On ambulance whose length requires midship lights, no more than 5 amperes of additional current should be required for the operation of each set of midship lights. Optical warning systems drawing more than 40 amperes might necessitate modification of the electrical system specified in Section 7.3 in order to supply the additional power required.

See Figure A.7.9.13(a) and Figure A.7.9.13(b) for illustrations of an optical warning system on a large ambulance.

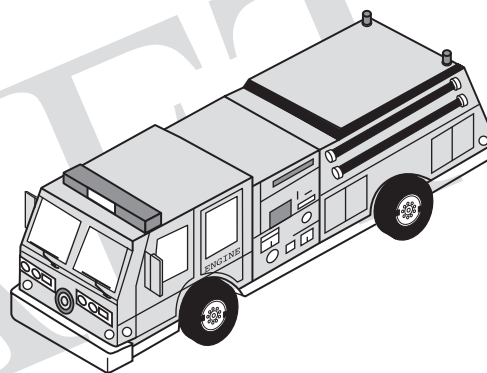


FIGURE A.7.9.13(a) Front and Left Sides of Ambulance with Optical Warning System.

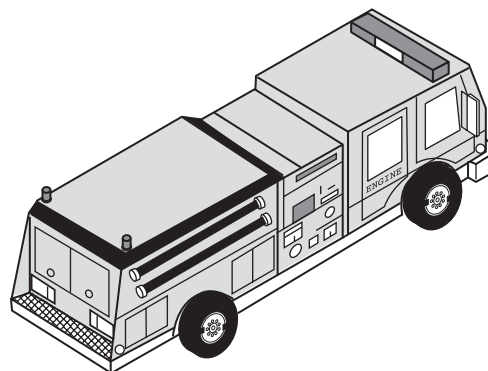


FIGURE A.7.9.13(b) Rear and Right Sides of Ambulance with Optical Warning System.

A.7.9.13.5 The zone totals reflect the combined performance of the individual optical warning devices oriented as intended on the ambulance when viewed along the perimeter of a circle of 100 ft (30.5 m) radius from the geometric center of the ambulance. The zone total is the sum of the optical power of all optical sources projecting signals of permissible color into the zone as measured at 5-degree increments along the horizontal plane passing through the optical

center, *H*, throughout the 90 degrees included in the zone (19 data points). The calculation of zone totals assumes that all optical sources are mounted at the geometric center of the ambulance. With the optical center of each optical source oriented as installed, the optical power contributed by every optical source at a given point is taken from the test report, and they are added together to determine the total optical power at that point. The zone total is the sum of the optical power at the 19 measurement points in the zone. The upper- and lower-level optical sources are calculated independently.

The engineering basis of Section 7.9 permits both the design and the certification of an optical warning system by mathematical combination of the individual test reports for any number of optical warning devices of different color, flash rate, optical source, and manufacturer. Using the test reports provided by the device manufacturer, the contribution of optical energy from each optical source is determined for every data point. The total candela-seconds per minute of optical energy is determined at each point, and then the zone totals are calculated and compared to Table 7.9.13.5.

A.7.9.14 The minimum optical warning system should require no more than an average of 35 amperes for the operation of the devices in the blocking mode.

A.7.9.16 In a few cases, a manufacturer might wish to type certify by actual measurement of the optical warning system on an ambulance. Certification of the actual measurement of the performance of the optical warning system is made with each optical source either mounted on the ambulance or on a frame duplicating the mounting of the device on the ambulance. The performance of the system can be directly measured along the perimeter of a circle with a 100 ft (30.5 m) radius from the geometric center of the ambulance. Each optical warning device used should be certified by its manufacturer as conforming to all the requirements of this standard pertaining to mechanical and environmental testing. Photometric testing of the system should be performed by qualified personnel in a laboratory for such optical measurements.

The test voltages and other details should be as called for in this standard for the photometric testing of individual optical warning devices. The elevation of the photometer, however, could be set at the elevation that maximizes the performance of the upper-level devices and at a second, different elevation that maximizes the performance of the lower-level devices.

With the optical center of each device oriented as installed, the sum of the actual value of the optical power contributed by every optical source is then determined at each measurement point. The zone total is the sum of the optical power at the 19 measurement points in the zone.

Measurements are made to determine all the optical requirements of this standard, including the optical power at each of the required measurement points, the zone totals at the horizontal plane passing through the optical center, and the zone totals at 5 degrees above and 5 degrees below the horizontal plane passing through the optical center. Any upper-level warning devices mounted above the maximum height specified by the manufacturer(s) should be tested to demonstrate that at 4 ft (1.2 m) above level ground and 100 ft (30.5 m) from the mounted device, the optical energy exceeds 50 percent of the minimum required at the horizontal plane passing through the optical center.

A.7.10.1.2 If the purchaser wishes to have the siren controls within convenient reach of persons riding in both the right and left front seat positions, that should be specified. In some ambulances, multiple control switches might be necessary to achieve convenient reach from the two positions. If other signal devices, such as an additional siren, bell, air horn(s), or buzzer are desired, the type of device and its control location also should be specified.

A.7.11.6.1 The user might want to consider a map light or additional task lighting in the cab.

A.7.11.6.3 The purchaser might want to add “checkout lights” that can be controlled by a timer or switch wired directly to the batteries. These “checkout” lights are usually fluorescent lights wired to the line voltage shoreline and can be wired so that the ambulance ignition or battery switch need not be turned on.

A.7.11.6.3.4.2 The purchaser should be aware that, even if technically considered “white” through industry standard color tolerances, care should be taken to insure interior lighting fixtures, primarily patient dome lights, maintain a uniform color hue (measured by color temperature in degrees Kelvin), across all like installed light fixtures.

Experience indicates a color temperature nearest “daylight” (6500°K) may be preferred, though commonly achievable only with LED or fluorescent light sources. Lower cost incandescent and halogen patient dome lights typically fall within the “warmer” range of 2500°K to 3500°K. Care should be taken when selecting lighting fixtures to avoid wide variances in lighting temperature within the patient treatment area of the patient compartment.

A.7.12.1 Electronic displays that are visible in all ambient light and that project narrative information can be used in lieu of discrete, colored, indicator/warning lights, provided the projected message is at least as visible as the basic required warning light.

A.7.13 The purchaser might wish to add camera(s) at the sides or rear of a vehicle with cab monitoring screens or automatic vehicle-stopping devices that sense an obstruction at the rear of the vehicle. In addition, angled backup lights mounted in the wheel well areas will provide additional scene lighting for personnel who might be at the side of the vehicle or lighting of folding tanks or other obstacles on the side of the ambulance. Any such devices will improve safety while vehicles are backing.

A.7.15.2 The purchaser should specify the appropriate features to accommodate their communication equipment, including but not limited to metal ground planes, grounding, coaxial cable, and antenna placement.

A.8.2.2.1 The purchaser should specify the location on the apparatus for the power inlet. Consideration should be given to placement of the power inlet so that it disconnects if the apparatus is moved forward or an auto-eject device can be utilized. The shoreline and circuit breaker should be sized for the anticipated electrical load.

A.8.2.5.3 Portable line voltage electrical equipment added by the ambulance service should also be listed and utilized only in accordance with the manufacturer’s instructions.

A.8.2.6.4 Although a splash shield will lessen the amount of road spray that reaches the generator, it will not protect the generator if the ambulance is driven through deep water. Care should also be taken if the ambulance is driven off-road, because a splash shield is not a skid pan and will not protect the generator from physical abuse.

A.8.3.1 It is important that all metal parts of the ambulance and the electrical system be bonded to the vehicle chassis. Any electrical boxes, conduits, or fixtures that are not permanently mounted to the metal body should be bonded to the protective ground wire. It is especially important that the metal light fixtures or housings of pole lights, light towers, and portable lights be grounded through the protective ground wire. *NFPA 70, National Electrical Code*, requires the following:

The normally non-current-carrying metal parts of equipment and the equipment grounding conductor terminals of the receptacles are connected to the generator frame. [70:250.34(A)(2), 250.34(B)(3)]

Use of a ground rod on an ambulance is not recommended. If one is used, the requirements of *NFPA 70*, Article 250, should be followed. These requirements are difficult to achieve in a portable application.

Supplying a building electrical system from an ambulance is not recommended, because it commits the ambulance to the task and requires a significantly different grounding scheme, at least while being used for this application, in accordance with *NFPA 70*, 250.20, “Alternating-Current Systems to Be Grounded”; 250.30, “Grounding Separately Derived Alternating-Current Systems”; and other applicable sections of *NFPA 70*. In this situation, the grounding allowed by 250.34 is no longer applicable.

A.8.3.1.4 This refers to the protective ground (green wire), not the “neutral” wire. The ground is the chassis/body of the vehicle, not a connection to an earth ground.

A.8.4 Ground-fault circuit interrupters (GFCIs) are intended to provide protection from electrical shock, but experience in the emergency services has pointed out the following several considerations about using them:

- (1) GFCIs integrated into outlets or circuit breakers or as stand-alone devices can be used.
- (2) Where possible, GFCIs should be located at the end of cords (i.e., in the distribution box at the end of a cord reel) to reduce tripping associated with long cord lengths and to put the reset function closer to the user.
- (3) GFCIs might not be compatible with 120/240-volt 4-wire cord reels frequently used in emergency services unless the GFCI is located at the end of the cord.
- (4) Many plugs and receptacles used in the emergency services are twist lock instead of standard nonlocking household plugs and receptacles, and in these cases, the GFCIs integrated with an outlet cannot be used, requiring circuit breaker GFCIs or standalone GFCIs.

A.8.5.4.1 The 120°F (49°C) requirement is for air inlet temperature to the power source. The completed ambulance is required to operate at an ambient temperature of 110°F (43°C). This difference of only 10°F (6°C) is difficult to achieve due to heat produced by the ambulance. The installer should take this temperature into consideration in selecting a location for the power source. If the ambulance is intended to operate at high temperatures, the purchaser may want to specify a larger nameplate rating on the generator and derate it to allow for a higher temperature capability. Consult with the power source manufacturer for more information on extended temperature range operation. In the testing required in Chapter 9, the ambient and air inlet temperatures are recorded, giving a measure of the temperature difference in actual operation.

The following factors could be relevant to power source testing, depending on the type of power source:

- (1) *Sampling.* The selection of test unit(s) should be representative of the construction and settings for units that will be supplied to the ambulance manufacturer. The standard does not require that all production units be tested; however, the power source manufacturer should test as needed to maintain confidence in its declaration of the continuous duty rating for all production.
- (2) *Clearances, cooling, and ventilation.* Testing should be conducted at the worst-case clearance (usually minimum clearance or minimum compartment size) and worst-case ventilation conditions (minimum inlet/outlet dimensions and maximum inlet/outlet restrictions) specified in the literature. If not in the literature, the power source manufacturer's declaration should indicate the clearances, compartment size, and ventilation that are applicable to the declared continuous duty rating.
- (3) *Test duration.* "Continuous" ratings are usually established by tests run until thermal stabilization is achieved. A minimum test of 2 hours, matching the ambulance test duration indicated in Section 9.9, is recommended.
- (4) *Air inlet temperature.* Power sources should be tested in a chamber or room where the air temperature supplied to all inlet ducts (radiators, engine induction, windings, heat sinks, and so forth), and the air surrounding the test unit, is maintained at 120°F (49°C).
- (5) *Barometric pressure.* Pressure (air density) varies with changes in altitude and weather. Its effect is generally greatest on engines, where it affects combustion and cooling efficiency. There is a lesser effect on wound machines due to cooling only. To show compliance with the 2000 ft (600 m) requirement, a test in a chamber simulating 2000 ft (600 m) would be ideal, but it is not expected. Alternatively, connecting more or less than the rated load can be used to simulate/demonstrate that the engine is capable of the power required for rated output at 2000 ft (600 m). (Several standards' organizations, such as SAE and ISO, have standards that describe how to compute load/output correction factors for barometric pressure.)
- (6) *Fuel temperature.* Fuel supply for the test should be stabilized at 120°F (49°C) before testing. Increases in fuel tank temperature that can occur as a result of fuel returned to the tank should be controlled so as to provide a result that is representative of expected fuel temperature conditions for the ambulance.
- (7) *Intake and exhaust restrictions, accessories, hydraulic pumps, and reservoirs.* Components and accessories that might reduce engine power available for electrical output or that consume electrical output from the power source should be installed and be of the type used for the model that will be ordered for ambulance use, or their effect should be separately determined and reflected in the certified output.
- (8) *Break-in.* Acceptance of a reduced output rating until completion of an in-use break-in period is subject to the prior agreement of the ambulance manufacturer, who might request test evidence. When applicable, the reduced output amount and duration of the break-in period should be indicated in the power supply literature.
- (9) *Voltage and frequency.* Tests should be run while maintaining the ± 10 percent voltage and ± 3 Hz frequency required by 8.4.2.1. Furthermore, settings for voltage and frequency should be representative of production units.
- (10) *Engine speed and hydraulic flow/pressure.* The engine speed and/or hydraulic flow and pressure ranges indicated in the power source's literature should be used to verify that the declared ratings are achievable.
- (11) *Hydraulic fluid temperature.* The entire hydraulic power supply system, including hydraulic fluid piping and reservoir, should be located within a test chamber where temperature is controlled to maintain 120°F (49°C). Hydraulic fluid reservoirs should be stabilized at the ambient air test temperature [120°F (49°C)] prior to the testing.
- (12) *Component and material temperatures.* Although not specified in the standard, when a power supply designed for light-duty use in open air is proposed for fixed ambulance use, the power source manufacturer should evaluate the components to determine whether they will operate within their rated or design temperature limits.

A.8.5.7.3 The instrumentation should be protected from vibration, which can lead to false readings. Particular attention should be paid to reed-type frequency indicators. Digital electronic instrumentation should be selected that incorporates sample times and intervals that accurately report system performance under varying conditions.

A.8.5.9 The indicator lights and interlocks specified in this section are minimums. Some manufacturers or users might choose to add additional indicator lights or interlocks.

A.8.5.9.3 Generators are operated from the side, top, front, or rear of the ambulance, and stationary operation requires that no power is applied to the wheels while operating. Therefore, it is essential that any generator system controls that shift the ambulance out of the road mode of operation to place the generator system in operation be equipped with a means to prevent dislocation of the control from its set position in the power generation mode.

A.8.6.1 A PTO generator system typically consists of a propulsion engine, a controller to regulate the propulsion engine's speed (if required), an appropriate PTO arrangement, drivetrain components, a generator, and other miscellaneous parts.

Where possible, the generator PTO system should be prevented from engaging if engine speed is above idle.

PTO gear ratios and engine governor components should be selected and matched to provide an engine speed high enough to maintain rated performance of the alternator and air-conditioning system (if provided). Engine speed should be high enough to maintain rated performance of the low voltage electrical system. Continuous excessive engine speed will result in premature generator drivetrain component failure and unnecessary fuel consumption.

The purchaser should consider specifying a means to automatically disconnect the generator or reduce engine speed to idle in the event of engine overspeed.

A.8.6.2 A hydraulic generator system generally consists of a variable displacement hydraulic pump deriving its power from the propulsion engine, a controller to regulate the hydraulic fluid flow rate, a hydraulic motor driving the generator, hydraulic fluid cooler, reservoir, and other miscellaneous parts.

All hydraulic generator systems have a window of operation (speed range). When selecting the power output of the hydraulic generator system, its speed range should be compared to the operating window of the ambulance's engine and the PTO ratios available. By selecting the hydraulic generator system and PTO ratio to match the application, electrical power can be provided over a wide operating range.

The selected PTO should have a gear ratio that will allow the widest possible range of engine speeds without overspeeding the hydraulic pump.

Where possible, engagement of the generator PTO system should be prevented if engine speed is above idle.

A.8.6.2.1 The means can be a mechanical, hydraulic, or electronic device.

A.8.6.3 Engine-driven generator systems use an internal combustion engine close-coupled to a generator. Some installations are capable of producing power while the ambulance is in motion. Generators used in these applications should be specifically designed for mobile applications. Remote generator controls in the driving compartment should be considered and specified if desired.

A.8.6.3.2 The purchaser should consider the following additional remote instruments where a prime mover, other than the propulsion engine, is used to drive a generator:

- (1) Oil pressure gauge and low pressure indicator light and audible alarm
- (2) Engine temperature gauge and high temperature indicator light and audible alarm

The purchaser might want to specify a high temperature indicator to help troubleshoot automatic shutdowns.

A.8.6.3.9.1 Emissions from exhaust discharge pipes should be directed away from any tools or equipment, because such emissions contain an oily substance that could make the tools difficult to handle and possibly dangerous to use.

A.8.6.4 Brief descriptions of several different types of systems follow. All of these systems can overload the low voltage electrical system and cause the load management system to terminate the generation of line voltage. As a result, the amount of line voltage power that can be supplied at any given time is totally dependent on the other, higher priority demands placed on the low voltage system.

Dynamic Power Inverter. A dynamic power inverter converts alternator output power to 120 volts ac (or 120/240 volts ac). Power is electronically inverted to ac. Usually the largest system of this type is 7500 watts. Voltage and frequency control are typically very good. These types of systems are suited to providing electric power while the ambulance is in motion.

Static Power Inverter. A static power inverter converts 12-volt to 14-volt dc power to 120-volt ac (or 120/240-volt ac) power. Power is electronically inverted to ac. Usually the largest system of this type is 2000 watts. Voltage and frequency control are typically very good. These types of systems are suited to providing electric power while the ambulance is in motion.

Motor-Driven Generators. A motor-driven generator system converts 12-volt dc power to 120-volt ac (or 120/240-volt ac) power. The 12-volt dc motor drives an ac generator. Typical power ratings are less than 1600 watts. Voltage

and frequency control are less precise than some of the other systems available. These types of systems are suited to providing electric power while the ambulance is in motion.

Transformers. Transformer systems convert energy from the alternator, which is then rectified to 120-volt dc power. Typical installations provide 1000 watts. Output voltage is directly dependent on input voltage. Input voltage is dependent on engine and alternator speed.

In most cases, other power sources that do not draw power from the low voltage system are preferable.

A.8.6.4.2 In order to provide adequate power, it can be necessary to provide a means to advance engine speed as described in 8.6.5.

A.8.6.5.3 Operations in conjunction with any other component driven off the ambulance's engine could require special or alternate interlock systems.

A.8.6.6 Devices that produce modified sine waves can be less expensive than devices that produce pure sine waves. Power from electric utilities and most traditional mechanical generators are close to a pure sine wave. A modified sine wave output is satisfactory for many types of equipment but can cause problems with some types of equipment, including the following:

- (1) Some computer and electronic equipment
- (2) Some fluorescent lights with electronic ballasts
- (3) Some tools with variable speed motor controls
- (4) Some battery chargers
- (5) Some medical equipment
- (6) Some other equipment

The purchaser should identify what equipment is intended to be powered from the power source and verify with the equipment manufacturers that the equipment is compatible with modified sine wave power sources before specifying such a power source.

A.8.7 Portable generator systems are generally designed with an integral fuel tank and controls in one modular package. This allows the system to be picked up and transported to a remote location from the ambulance. Generators designed for portable use should be accessible for removal. These generators are generally not suited for "enclosed" compartment operation or should be mounted on a slide-out tray for adequate ventilation. Such installations require interlocks or a high temperature alarm to ensure that the generator is operated in slide-out condition.

The generator performance specifications should be evaluated carefully to ensure that the required level of performance can be met. Article 445, "Generators," of *NFPA 70, National Electrical Code*, requires that overcurrent protection be provided on portable generators.

A.8.9.3 Where the wire could be exposed to temperatures above 194°F (90°C), higher temperature-rated wire should be used.

A.8.10.3.4 Similar fixed loads should be paired on opposite legs of the power source where practical. If pairs of receptacles are provided on the same side of the ambulance or on the front or rear of the ambulance, they should be connected to opposite legs of the power source. If two 120-volt cord reels are provided, they should be connected to opposite legs of the power source. 120/240-volt cord reels should always be connected to both legs of the power source.

A.8.11 Where the wire could be exposed to temperatures above 194°F (90°C), higher temperature-rated wire should be used.

A.8.11.6.1 Locations in which flexible cord might be damaged include but are not limited to compartment walls and floors, exposed outside areas, and exposed interior areas near equipment or walkways.

A.8.12.3 Common connectors and terminations that comply with these requirements include but are not limited to the following:

- (1) Welded or brazed connectors
- (2) Crimped connectors
- (3) Soldered connections that are mechanically secured before soldering
- (4) Screw-type positive pressure connectors

- (5) Ring terminals
- (6) Hooks
- (7) Upturned spade
- (8) Crimped-on pins

A.8.12.4 The following switch terminology can be helpful in understanding the different types of switches:

- (1) *One Pole (1P) or Single Pole (SP)*. A switch device that opens, closes, or changes connections in a single conductor of an electrical circuit.
- (2) *Two Pole (2P) or Double Pole (DP)*. A switch device that opens, closes, or changes connections in both conductors of the same circuit.
- (3) *Two Circuit (2 CIR)*. A switch device that opens, closes, or changes connections in a single conductor of two independent circuits.
- (4) *Single Throw (ST)*. A switch that opens, closes, or completes a circuit at only one of the extreme positions of its actuator.
- (5) *Double Throw (DT)*. A switch that opens, closes, or completes a circuit at both extreme positions of its actuator.
- (6) *Normally Open (NO)*. A switch in which one or more circuits are open when the switch actuator is at its normal or rest position.
- (7) *Normally Closed (NC)*. A switch in which one or more circuits are closed when the switch actuator is at its normal or rest position.

Switches are rated for the type of load they are designed to control. Switch ratings include the following:

- (1) Resistive
- (2) Inductive
- (3) Horsepower (i.e., motor loads)
- (4) Tungsten (i.e., incandescent lamp loads)
- (5) Alternating current
- (6) Direct current

The ampere rating of a given switch is dependent on the type of load. In particular, switches used to control dc circuits should have the appropriate dc rating.

A.8.12.4.2 In lieu of a switch-rated circuit breaker, a standard circuit breaker could be used with a separate switching device.

A.8.12.5 The purchaser should specify the number and location of receptacles that are needed to operate the devices to be powered by the system. The purchaser should specify the NEMA number (if applicable), manufacturer, and style of the receptacles desired. For other than NEMA-type receptacles, the purchaser should additionally specify the wiring configuration.

A.8.12.5.6.3 If the off-road ambulance is to ford water, the receptacle distance should be increased above 30 in. (750 mm). The purchaser should review the proposed height for any receptacles on the ambulance and specify a higher mounting height if desired.

A.8.12.5.11 While NEMA configurations as defined in NEMA WD 6, *Wiring Devices — Dimensional Requirements*, are recommended to promote compatibility of equipment during mutual aid operations, other configurations are in use and have been adopted by various ambulance services.





































Acceptable NEMA-type plug and receptacle configurations for various ac voltage and current ratings are shown in Figure A.8.12.5.11.

The letter "R" following the configuration number indicates a receptacle, and the letter "P" denotes a plug. For example, the nonlocking, 15-ampere, grounding receptacle found in most homes is configuration 5-15R and accepts a three-prong plug in the configuration of 5-15P.

Locking-type plugs and receptacles are designed to prevent accidental disconnection when subjected to moderate pull-apart loads. Neither locking nor nonlocking connectors are designed to withstand the loads that can be created when pulling long cords up buildings and stairs.

(See Figure A.8.12.5.11 on the following page.)

NONLOCKING PLUGS AND RECEPTABLES

		15 Ampere		20 Ampere		30 Ampere		50 Ampere		60 Ampere	
		Receptacle	Plug	Receptacle	Plug	Receptacle	Plug	Receptacle	Plug	Receptacle	Plug
2-pole 3-wire grounding	5										
	6										
3-pole 4-wire grounding	14										
	15										

LOCKING PLUGS AND RECEPTABLES













































		15 Ampere		20 Ampere		30 Ampere		50 Ampere		60 Ampere	
		Receptacle	Plug	Receptacle	Plug	Receptacle	Plug	Receptacle	Plug	Receptacle	Plug
2-pole 3-wire grounding	5										
	6										
3-pole 4-wire grounding	14										
	15										
4-pole 5-wire grounding	21										

Figure A.8.12.5.11 NEMA WD-6, Wiring Devices—Dimensional Requirements. (Source: National Electrical Manufacturers Association.)

A.8.13.5 A suggested minimum capacity of a reel is at least 100 ft (30 m) of cord rated to carry 20 amperes at 120 volts ac. When sizing the reel, extra capacity should be provided when multiple receptacles are attached to the cord stored on the reel.

A cord reel to supply a single 120-volt circuit requires three collector rings and three conductors in the cord, for line, neutral, and ground. If the power source has 120/240-volt outputs, as most power sources do, a second equivalent circuit with the same rating requires only one additional conductor, because the neutral and ground can be common to both circuits. Thus, with approximately 25 percent more reel space and cord cost, the cord reel can supply twice the number of lights or other loads.

A.8.13.6 Table A.8.13.6 lists the suggested cord size for cord reels based on the desired circuit ampacity and the cord length. All cord reels with one or more outlets should be rated at 15 amperes or greater.

A.9.9.2 The purchaser should check the polarity of the wiring in a building prior to interconnecting the ambulance-mounted electrical system to the electrical system in a building.

A.9.9.6 It is important that the power source meet the purchaser's requirements for output. Power sources may be advertised with power ratings for operating conditions that are more favorable than the conditions that might be encountered in ambulance use. Some power sources are advertised at peak output or intermittent duty ratings and not the continuous duty output required for ambulances. The power source manufacturer and ambulance manufacturer might need to establish a reduced rating that is appropriate for ambulances. The standard calls for two steps. The power source manufacturer provides a declared rating for 120°F (49°C) air inlet temperature and 2000 ft (600 m) altitude for the minimum clearance and ventilation indicated on the declaration (*see 8.5.10*). Then the ambulance manufacturer verifies that the rating printed on the power source specification label can be attained during the line voltage load test (*see 9.2.7*).

Table A.8.13.6 Wire Size (AWG) for Various Electrical Cord Lengths

Circuit Ampacity (amperes)	Cord Length					
	50 ft (15 m)	100 ft (30 m)	150 ft (45 m)	200 ft (60 m)	250 ft (75 m)	300 ft (90 m)
15	12	12	12	12	10	10
20	12	12	12	10	10	8
25	12	12	10	10	8	8
30	10	10	10	8	8	6
35	8	8	8	8	6	6
40	8	8	8	8	6	6
50	6	6	6	6	6	4

For heavy loads such as large smoke fans and hydraulic rescue tool power plants, the purchaser should consider 240 volt units instead of 120-volt units. This will allow the use of smaller cords and reels. For example, a 200 ft (60 m) reel to supply a hydraulic rescue tool (HRT) power plant that draws 15 amperes at 240 volts would require 12-AWG wire. The same power unit in a version to run on 120 volts would draw 30 amperes and would require 8-AWG wire.

Cord reels for three-phase power or other specialized applications should be designed with the assistance of a qualified electrical engineer.

A.8.13.7 The purchaser may want to specify that the cord on the reel be provided with a disconnect means within 18 in. (457 mm) from the reel for cord removal if the cord is 8 AWG or smaller. A disconnect makes it easier to replace damaged cord or to use the cord to extend another cord, although it reduces the capacity of the reel and makes it harder to coil the cord on the reel.

A.8.13.8 The purchaser might want to color code the cord or cord reel to identify the voltage.

A.8.13.9.2 It might be advantageous to specify a remote power distribution box that has a provision for hanging the unit from a door or ladder.

A.8.13.9.5 The lamps used in this application should be rough-service type. Scene lighting around the remote power distribution box can be provided with an integral, mechanically protected light fixture.

A.8.13.9.5.1 For increased visibility, reflective tape can be applied to the distribution box.

A.9.4(6) Damaged parts can include hooks, antlers, or side bars. Rotation or deformation of retention mechanisms does not constitute failure.

A.9.5.1 The purchaser might wish to have the entire low voltage electrical system and warning device system certified by an independent third-party certification organization.

A.9.9 The purchaser should consider the range of temperatures in which the power source is to be operated. If extreme conditions are anticipated, the purchaser should specify the test conditions that are desired.

Generator Set Rating. Auxiliary engine-powered generator sets are the type of power source most likely to require a reduction from advertised ratings, and generator set literature usually provides rating correction factors for altitude and temperature. These factors could be based on standards for engines, such as ISO 3046-1, *Reciprocating internal combustion engines — Performance — Part 1: Declarations of power, fuel and lubricating oil consumptions, and test methods — Additional requirements for engines for general use*, and SAE J1349, *Engine Power Test Code — Spark Ignition and Compression Ignition — Net Power Rating*; standards for generators, such as NEMA MG 1, *Motors and Generators*; or manufacturer testing. As an example of how altitude and temperature affect output capability, consider a typical 10 kW generator set with 0.8 generator efficiency and naturally aspirated diesel engine that is rated at 500 ft (150 m) and 85°F (30°C) for continuous operation without overload or reserve capacity. ISO 3046-1 indicates a factor of -2.1 percent output per 10°F (5.5°C) ambient increase, and a -2.6 percent per 1000 ft (300 m) altitude increase. Generator output is also affected by temperature [about -0.5 percent per 10°F (5.5°C)] and altitude (small and ignored in this example). There is also an effect from combining engine and generator into a generator set due to each heating the other. This may require an additional factor of -1 to -4+ percent per 10°F (5.5°C), depending on the effectiveness of the cooling system and temperature (the factor increases with increasing temperature). Altogether, these factors suggest the 10 kW generator set in this example is capable of about 8.8 kW at the maximum temperature of 110°F (43°C) and altitude of 2000 ft (600 m) specified in the standard. Another way to view this result is that an 11.4 kW generator set would be required to provide 10 kW at 110°F (43°C) and 2000 ft (600 m).

Where there is concern that installation or operational circumstances could cause power source intake air to heat above 120°F (49°C) or where the flow of cooling, induction, or exhaust air is more restricted than what is allowed by the manufacturer's literature, advance consultation with the power source manufacturer(s) could help in the selection of a power source that will pass the ambulance test with an output that meets the purchaser's needs. Also, weather, like altitude, can affect air density and thus engine and generator set output. The combined effect of altitude and weather is reported as barometric pressure on local weather reports. Low barometric pressure will reduce engine and generator set output capability. High barometric pressure (usually clear cold days) will increase engine and generator set output capacity.

Other Power Source Types. Some output correction factors described in the generator set example apply to other types of power sources, depending on circumstances. For example, PTO and hydraulically driven generators also rely on engine power, but the engine will usually have substantial reserve power, so increased altitude or temperature will not affect their power supply rating. Regardless, best practice for longest life and lowest maintenance is to provide unrestricted airflow at the lowest temperature.

A.9.15.2(4) For the purpose of this test, 110 L/min of breathing air or dry nitrogen is considered equivalent to 100 L/min of oxygen.

B.1.2.3 SAE Publications. Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, www.sae.org.

SAE J551/1, *Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz)*, 2006.

SAE J1349, *Engine Power Test Code — Spark Ignition and Compression Ignition — Net Power Rating*, ____.

B.2 Informational References.

NFPA 70, *National Electrical Code*, 2011 edition.

B.3 References for Extracts in Informational Sections.

Annex B Informational References

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

B.1 Referenced Publications.

B.1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. NFPA 70, *National Electrical Code*, 2011 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus*, 2009 edition.

B.1.2 Other Publications. (Reserved)

B.1.2.1 ISO Publications. International Organization for Standardization, 1, ch. De la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland.

ISO 3046-1, *Reciprocating internal combustion engines — Performance — Part 1: Declarations of power, fuel and lubricating oil consumptions, and test methods — Additional requirements for engines for general use*

B.1.2.2 NEMA Publications. National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209, www.nema.org.

NEMA MG 1, *Motors and Generators*, ____.

NEMA WD 6, *Wiring Devices — Dimensional Requirements*, 2002.