EMT-A Program Changes

After almost two years of intensive study, an enhanced EMT-A program is being implemented in Maryland.

Both MIEMSS and the Maryland Fire and Rescue Institute have been working this past year to develop the new programs that were recommended by the EMT-A Task Force and approved by the Maryland Fire and Rescue Education Training Commission.

"The excellent cooperation and hard work of hundreds of people throughout Maryland, and especially the support of the Maryland State Firemen's Association, have made this a true consensus effort," said State EMS Director, William E. Clark.

Changes in the EMT-A program, the EMT-A continuing education program, and the reentry policy for former Maryland EMT-As will become effective July 1, 1986. These changes are detailed below. For further information, call the MIEMSS Prehospital Training and Certification Office at 301/528-3666.

EMT-A Program Curriculum

EMT-A courses beginning on or after July 1, 1986 will use the U.S. Department of Transportation, National Highway Traffic Safety Administration's 110-hour Emergency Medical Technician National Standard Curriculum (1984, 3rd edition). This course consists of 95 hours of classroom training; 10 hours of "local company level" internship; and 5 hours of testing and certification.

Classroom training will be based on the knowledge and skills objectives outlined in the National Standard Curriculum as referenced to the *Maryland EMT-A Skills Manual.*

MIEMSS will work with the local jurisdictions in developing their internship training programs. MIEMSS will also review and approve the "local company level" internship training program as each of the 23 counties and Baltimore City finalizes its program.

Textbook

The approved textbook for the 110-hour EMT-A training program will be the 4th edition of *Emergency Care,* by Grant, Murray, and Bergeron and published by the Brady Communications Company, Inc., a Prentice-Hall publishing company.

The delivery date for the 4th edition is set for early August (in time for the start of the new 110-hour EMT-A training program).

If you have a recently purchased 3rd edition of the Brady textbook in excellent condition and you have the receipt, the Brady Communications Company will exchange your 3rd edition for the 4th edition. Details about the exchange policy will be available when the 4th edition is on the shelf.

Lesson Plans

EMT-A instructors will utilize National Standard Curriculum lesson plans that have been reformatted by the Maryland Fire and Rescue Institute and referenced to the *Maryland EMT-A Skills Manual.* These standardized lesson plans will be distributed to the sponsoring agencies as soon as possible before the start of the new 110-hour EMT-A basic classes.

Exams

MIEMSS will use standardized written and practical exams statewide.

The written exam will consist of multiple-choice questions, and each of these questions will be referenced to the approved textbook and/or the *Maryland EMT-A Skills Manual.*

The practical skills exam will consist of three independent stations, including:

1. CPR Station (approximately 10 minutes). At this station, candidates will demonstrate their ability to perform CPR, manage airway obstructions, and use adjunctive airway management equipment.

2. Trauma Station (approximately 20 minutes). At this station, candidates will be presented with a scenario involving a trauma victim. As a team, the EMT-A candidates will be expected to assess the patient's condition and to provide the appropriate care, according to the *Maryland EMT-A Skills Manual.*

3. Medical Station (approximately 20 minutes). At this station, candidates will be presented with a victim in a scenario involving a medical emergency. As a team, the EMT-A candidates will be expected to assess the patient's condition and provide the appropriate care, according to the *Maryland EMT-A Skills Manual.*

This revised EMT-A practical skills evaluation will require less time to complete than the 5-station practical exam given previously. EMT-A candidates can expect to spend about one hour at the new practical skills evaluation. In addition, more realism will be incorporated into the new practical skills evaluation. As part of this effort toward realism, "victims" at the trauma and medical stations will be moulaged accordingly.

Maryland EMS NEWS
Vol. 12 No.12 JUNE 1986

Quizzes

Sponsoring agencies conducting courses leading to EMT-A certification will give quizzes that they have developed and that are standardized (for their specific courses).

"Maryland EMT-A Skills Manual"

EMT-A candidates will be trained and tested (practical skills evaluation), according to the *Maryland EMT-A Skills Manual.* Each student will receive a copy of the *Maryland EMT-A Skills Manual* and a copy of the practical skills evaluation forms at the start of the EMT-A course.

Certification of First Responders

Individuals currently certified as first responders in Maryland can enter the 110-hour EMT-A basic course at lesson 14 if space is available in the class.

Individuals who enroll for the first lesson and who successfully complete the first 23 lessons of the 110-hour EMT-A basic course will be eligible to become certified as first responders.

Conducting Practical Skills Exams

The practical skills exam (leading to certification) may be conducted by the sponsoring agency provided that the MIEMSS guidelines are followed. MIEMSS must provide an "on-site" coordinator to ensure that these guidelines are followed. Coordination between the sponsoring agency and MIEMSS regarding the practical skills exam is necessary prior to the exam.

Retraining and Retesting

No "on-site" retraining or retesting will be conducted at the practical skills exam. All retraining will be scheduled in advance by the sponsoring agency. Following this, MIEMSS will establish a schedule for retesting.

EMT-A Continuing Education

Instead of taking a 21-hour recertification course and written exam every three years to maintain EMT-A certification, an EMT-A will participate in a 24-hour continuing education program (with quizzes but no written exam) within three years of his/her most recent certification. This continuing education program (12 hours of skills development and 12 hours of knowledge development) is outlined below.

The Maryland Fire and Rescue Institute will sponsor the 12-hour skills development courses statewide. Skills covered in the course include: CPR, airway management, oxygen administration; trauma management, immobilization; medical emergencies, assessment; and situational reviews. (The instructor must sign off on the practical skills.)

MIEMSS will fund local continuing education courses in a manner similar to the funding of CRT continuing education. The details will be worked out individually with each county and Baltimore City. Each candidate for EMT recertification must complete continuing education courses in the following areas: medical emergencies (4 hours), trauma emergencies (4 hours), continuing education designed to meet local training needs (4 hours), and review quizzes.

To successfully implement, maintain, and monitor this statewide continuing education program, MIEMSS has developed an operational plan. This plan includes, but is not limited to, continuing education course approval; methods of instruction; self-study programs; data collection; and an information feedback system.

Continuing Education Course Approval

As in the past, all courses must be approved by the MIEMSS Office of Prehospital Training and Certification 30 days prior to the scheduled course date.

All approved courses will be assigned an identification code that will be used to generate reports back to each jurisdiction. These reports will provide helpful information regarding individual attendance records and recertification requirements for the prehospital care providers within that jurisdiction.

Methods of Instruction

MIEMSS will develop and provide continuing education program lesson plans to the local jurisdictions upon request. Locally developed lesson plans and review quizzes MUST be reviewed and approved by MIEMSS 30 days prior to the scheduled course date.

Self-Study Programs

MIEMSS is continuing to develop computer-assisted learning programs that can be used in the continuing education program. These self-study programs will be available in the future.

MIEMSS is also continuing to develop a series of video tapes that are designed for self-study use. Several of these progams have been approved for continuing education credits, and can be obtained from the MIEMSS Office of Prehospital Training and Certification.

Data Collection

The MIEMSS Office of Prehospital Training and Certification will collect and store information relevant to individual prehospital care providers attending approved continuing education courses. When EMT-As complete each of their continuing education courses, they will fill out a simple attendance card that will be verified by the instructor, sent to MIEMSS, and optically scanned and recorded. Details regarding this service will be available before July 1.

Information Feedback System

The MIEMSS Office of Prehospital Training and Certification will provide periodic reports to each of the 23 counties and Baltimore City. These reports will include important information regarding individual attendance at approved continuing education courses and provide helpful information regarding the future planning of courses.

EMT Reentry Policy

MIEMSS has developed a policy whereby previously certified EMT-As can become prehospital care providers after their certifications have lapsed. To do this, a person must:

1. Have previously certified as a Maryland EMT-A;
2. Have a current valid CPR card;
3. Successfully complete the new 24-hour EMT-A continuing education program;
4. Pass the current EMT-A written exam; and
5. Pass the current EMT-A practical exam.

THIS REENTRY POLICY IS IN EFFECT FROM JULY 1, 1986 THROUGH JUNE 30, 1987.

Disaster Mitigation

"Natural disasters can no longer be dismissed as 'acts of God.' They do not occur randomly in space or time. If they did, we could do little to reduce their effects. Because we can recognize patterns of occurrence in space and time, we can focus on particular areas to increase investment in strengthening buildings or to decrease investment by not locating buildings in areas with high disaster potential."

The process of mitigation, the reduction of the impact of disasters, was described by Frederick Krimgold, PhD, at the Second International Assembly on EMS. Dr. Krimgold is the associate dean for research and extension of the College of Architecture and Urban Studies at the Virginia Polytechnic Institute and State University.

Predisaster activities such as early warning and preparedness planning mitigate the effects of disaster. However, in engineering, architectural, and planning terms, mitigation is the reduction of impact of natural phenomena such as earthquake, flood, and wind through reduction of damage to buildings and other facilities used by people.

If the disaster can be avoided by locating human activity outside the path of earthquake, flood, or wind, much of the destruction can be eliminated. The foundation of mitigation is understanding geological and meteorological phenomena, their location and impact, and the behavior of facilities when exposed to those phenomena.

Emergency medical services deal with the failure of mitigation. When a disaster occurs, it is too late for this type of mitigation.

There is an important relationship between response activity and predisaster mitigation activity. A great deal of the effort that goes into identifying areas at increased hazard is also relevant to the efforts of warning and preparedness and facilitates planning for response.

Mitigation is part of a continuum of disaster-related activities. Following a disaster and response to it are the rehabilitation and reconstruction phases. Risk reduction and mitigation should be implemented in the reconstruction phase, leading to the anticipation of future disasters. Mitigation overlaps with reconstruction and is an element of preparedness for the next potential disaster.

Maps that depict the occurrence

(Continued on page 5)

Conference Focus: Disasters, Terrorism

Editor's Note: The presentations at the Second International Assembly on Emergency Medical Services: Focus on Disasters were summarized by Ameen Ramzy, MD. Portions of the text of his talk are reproduced here.

I won't pretend that I can summarize everything that has been said here in the past 2½ days or that I can capsulize the most important things that have been said. What I will do is comment on three areas, underlining those that have had an impact on me and, I suggest, are things that we should think about.

I'll divide my comments into three areas: first, a few aphorisms; second, a few issues that have been raised; and third, some recommendations.

Some of the quotes that stuck in my mind:

"The dogs became depressed when they didn't find live bodies" (Linda Wallace). That should tell us something about what happens to people.

"Coordination is akin to leadership without domination" (General Julius Becton, Jr.).

"Natural disasters are not 'acts of God' in the sense of being random in time or space" (Frederick Krimgold, PhD).

"EMS deals with failures of mitigation" (Frederick Krimgold, PhD).

"Improving conditions beyond predisaster levels is not a goal of immediate disaster relief" (Miguel Gueri, MD).

"Donations can delay national development" (Miguel Gueri, MD).

In the context of analyzing terrorism, the following statement was made: "When a patient is hemorrhaging, we usually don't worry about nutritional concerns" (Robert Kupperman, PhD).

"With a picture ID and a clipboard, you can usually go anywhere" (Robert Kupperman, PhD).

"The terrorism was beyond the imagination of those who were planning for security" (Commander Joseph Henderson, MD).

What are some of the issues that came forth clearly? I think we as a group recognize that risk assessment is a very real entity. The technology and expertise exist, not to predict disasters, but to develop "probabilistic scenarios."

Mitigation, meaning reduction of loss and damages once we know that a disaster is coming, is also a very real entity.

Medical response to a disaster raised a number of issues. We clearly heard from our international colleagues that international disaster medical teams are rarely needed, may cause problems, and should not be sent unless specifically requested. More specifically, volunteers should not be accepted unless they are affiliated with recognized agencies, self-sufficient, and familiar with the language and culture of the area involved.

This brings up that murky question of motivation. We have to find a way, particularly in disaster planning and disaster management, to sort out those who are genuinely concerned about their communities and their fellow man from those who are simply disaster ghouls. Disasters may bring out the best and worst in people.

If in certain planning scenarios it is determined that medical response teams are indeed needed, one must try to understand why busy clinicians don't jump at the opportunity to spend a few extra hours or weeks to get more training. We also need to understand the price that would be paid if, rather than selecting active clinicians to serve on medical response teams, we select inactive clinicians who may no longer be performing health care on a regular basis. All these inactive clinicians may be far more motivated for extra training but their skills may not be as current.

Triage was mentioned but not really discussed at any length. Some genuine difficulties of triage need to be recognized. We all have this notion of switching from trying to save *everybody* who is brought to the hospital or who is in the field to trying to save everyone who is *salvageable*. I don't know a universally acceptable definition of when one makes that switch. I do know that triage is probably the toughest job around. In most communities, the person who should be doing triage is probably the oldest, crustiest surgeon around (maybe even the surgeon who doesn't operate any more because his tremor is a bit enhanced). I learned that lesson from a surgeon who told of his experiences in Boston when the Coconut Grove fire, a horrible massacre, occurred. In the initial response, residents and interns were assigned to the parking lot for triage, and senior staff attending physicians were in the emergency departments, starting IVs on burn patients. It didn't work. The senior attendings hadn't started IVs in a while, and the poor interns and residents didn't have the emotional and intellectual baggage under their belts to be able to make those decisions. By switching roles, the attendings and residents functioned much more effectively.

It is extremely difficult to make triage decisions on a mass scale, that is, to be able to say, "We're not going to do anything with this one in order to save all of those." We need to consider that in response team planning.

We learned that earthquakes can be anticipated to some extent. Structures can be built and placed appropriately. At least in the large recent earthquakes, there were not great numbers of casualties needing major medical attention. The victims of earthquakes were either dead, had minor injuries, or could be managed by existing medical facilities, even in a community where more than one medical structure had collapsed. That should tell us something about our planning and how we place our resources. Obviously, between those who were dead and those who had minor injuries were those who were trapped for a significant period of time. The problems were not lack of medical teams, but were ones of extrication. We should think about that in our planning.

Amputations in the field are occasionally mentioned. In most situations, an amputation in the field represents a failure of rescue extrication and a failure of medical support. Sometimes, there is nothing else that can be done to preserve life. That is a very difficult decision and one that probably rarely has to be made.

The issue of "who's in charge?" has been discussed for years. It has been somewhat resolved with the incident commander concept, as if that solves the problem. Maybe the reason that we have so much trouble with "who's in charge" in disasters is not just because of the disaster but because it is a problem in everyday life and simply becomes intensified in a disaster. Obviously, "who's in charge" should be omniscient and omnipotent. A divinely designated king would be very nice but in a democratic society, that's a problem. The problems are not just over turf.

(Continued on page 4)

Conference Focus: Disasters, Terrorism . . .

(Continued from page 3)

They probably have another dimension besides space: a lot of people want authority; nobody wants too much responsibility; and nobody wants to give anybody else authority, even if he needs it to fulfill his responsibility.

We didn't talk a great deal about evacuating large populations. Dr. Miguel Gueri, in his presentation about the Colombian volcano, told us what happened when a large population wasn't evacuated, even with warning. I could relate to that.

The authorities in Ocean City, Maryland, had a recent experience in trying to evacuate a community. The third time they went through town before the hurricane arrived, they said, "We urge you to leave promptly." For those who refused, they simply asked for the name and phone number of the next of kin, so they would know whom to notify in the event of death. Some people simply will not leave.

I was reassured in the presentation on legal issues that "legal issues should be a minor concern in disasters." It would be more reassuring if we could say that legal issues are a minor issue in our everyday lives, but we haven't reached that point yet.

A question came up about the litigation issue in this country (not just medical, but medical malpractice, EMS malpractice, local jurisdictional malpractice). Some people connected the litigation crisis with a different attitude toward authority and professionals in the United States compared with other countries. One participant suggested that the problem is not a difference in attitude toward authority or professionals but a difference in attitudes toward life and death. In other countries, when you are sick or injured and you receive treatment and you die, it's part of the natural consequence of life. It was the "will of God." It was fate. But obviously in our country, when you die after treatment, we're getting to the mind set that "that doesn't happen. Somebody must be responsible. Somebody must have made a mistake."

Let me move now to terrorism. Dr. Robert Kupperman gave a very interesting presentation. He indicated that he would not address the social and economic conditions that might generate terrorism. As a surgical analogy, he said that, if a patient is hemorrhaging, you usually don't worry about nutrition. To carry the metaphor another step, once the hemorrhaging has stopped, you do worry about nutrition because it is critically important for healing, warding off infection, and recovery.

A recent edition of *Newsweek*, an unfortunately prophetic one, devoted several pages to terrorism. The author made the interesting observation that terrorists are made and not born. I understand those who refer to terrorists as "sick people," because behavior that is so abhorrent to our perception of ourselves as civilized human beings often cannot be understood in any way other than a disease. Yet in this increasingly complex society with its tremendous technological vulnerability, we must learn to understand more about the roots of terrorism if we are to contain it, control it, and eradicate it.

What reverberates in my mind is that discussion about the rescue dogs. The dogs didn't like finding dead bodies in the same sense that individuals involved in the treatment of critically ill people don't like losing patients. Paramedics have similar frustration if they are unfairly trained with the expectation that every day they are going to be saving lives. They take ACLS, they learn drip rates, they learn about drugs, and they do a tremendous job. Nobody told them ahead of time that a salvage of 6 percent in the field from heart attacks is common in some areas and, at best, 22 percent.

I found myself feeling tremendous sympathy for the dog who was unhappy. If we can feel such sympathy for a dog, how can we adapt that sympathy to understanding the behavior of some people?

Let me turn now to some recommendations:

Most of us are used to speaking primarily with those of our discipline. We need to recognize that all of us have a part to play and something to contribute. All of those individuals who have something to contribute should be involved in a community risk assessment at least annually. Those same individuals also need to determine a mitigation plan. When risk assessment and mitigation fail, EMS comes into play. It would be helpful if EMS personnel were involved in the risk assessment as well as the mitigation plan.

One of the recollections I'll take away is something that I heard in a breakout group. A person described a situation in another city in which EMS services are provided to a stadium. Every Sunday there are 60,000 people in that stadium. Outside the stadium runs a train, which occasionally handles nasty chemicals. Inside the stadium is an exhaust system that blows air into the stadium to keep the roof up. Is anybody looking at that? Is anybody at least scheduling the train when the people aren't inside? I should ask our legal expert what liability we all have for recognizing this potentially disastrous situation and not acting upon it.

We need to remember that during and after the response, we have to keep providing the public with good information. The next time we hear of a far-away disaster and we hear on the evening news about the fear of epidemics because of dead bodies and the need for mass vaccinations, we'll question that. We'll all hesitate to send our winter clothing to the tropics every time there's a request for clothing following a far-away disaster.

Let me turn to a couple of points about responsibility. Who should be doing that risk assessment? Summary sessions this morning made the point that somehow we're all responsible. We need to define that a bit further, because if everyone is responsible, as you know, nobody's responsible. I don't know who that person or authority should be. Is it a public safety manager, is it the EMS agency, is it the governor's office? We need to define that function and that person much more clearly.

We also clearly heard that people function better if they know that their families are safe and secure. Those contingencies should be put into prehospital disaster plans as well as hospital disaster plans. You can't call in single parents at 3 am to ask them to function for 24 hours unless they have a contingency for taking care of their children.

The interesting observation was made by Dr. Raquel Cohen, in discussing the effects of disasters on children, that it takes a level of sophistication to be afraid, so that the reaction of children is somewhat age-dependent. I suggest that

(Continued on page 5)

. . . Mass Casualty Incidents

(Continued from page 4)

the reaction of adults is also age-dependent and dependent upon our levels of sophistication.

Psychological Impact

We need to know how to get people out of a disaster situation psychologically, with the solid scientific approach that Dr. Cohen presented. We also need to look at the behavioral consequences of growing up in a state of chronic catastrophe. Growing up in Northern Ireland, South Africa, or West Beirut certainly alters one's approach to life and the value one places on tactics and life.

Statistically we may have one opportunity to contribute solidly to a major disaster in our life time. We really ought to get it right the first time.

Nuclear Disaster

Finally, there is a kind of disaster that I'd like to discuss because no one else wishes to. I'm speaking not on behalf of any of the participating organizations or for the organization which employs me. I'm speaking on behalf of myself, as an individual physician expressing a concern. We as health care providers need to be aware of the greatest risk. If we define our community as somewhere within the boundaries of the planet, what's the greatest risk? We can categorize earthquakes, hurricanes, building collapses, fires, but there is one that we just don't want to talk about. To deny that the threat of nuclear injury exists is the ultimate denial. To say that it is so unthinkable, so totally unmanageable, so totally overwhelming that we can't discuss it is pure nihilism. I don't buy the standard answer that "I wouldn't want to live in that kind of world," because that presumes that everything is all or none, that the entire continent is going to go up. Because of personal experience, I believe that people use what's at their disposal when they feel that their backs are to the wall. I also don't accept the philosophy that thinking about it, reading about it, and knowing something about it somehow make an event more likely. That's like saying encouraging people to wear seat belts makes them more likely to crash. I don't think that discussing nuclear injury hastens nuclear war. I simply disagree with organized groups of physicians who say that nothing can be done and therefore our total effort should be political. Someone else can work on the political efforts; they are valid. There are some things that we as health care providers need to know: every health care provider should know something about radiation (rads and rems). We should know about acceptable exposure levels. Every surgeon should know how to take care of wounds and how to do a skin graft. Prevention and management are not mutually exclusive.

Mostly, I think that we need to remember to stay a ltttle humble as health care providers, EMS managers, scientists, and engineers. If we're in the business of helping people, our ultimate goal is not supposed to be to make ourselves more important, more needed, or more secure in our jobs. Our ultimate goal as helpers of people is to make ourselves obsolete so that they don't need us anymore.

—Ameen Ramzy, MD
State Medical Director
for Field Operations

Trauma Symposium

The 9th National Trauma Symposium, to be held November 3–5 at the Sheraton Inner Harbor in Baltimore, will focus on trauma as the neglected disease—20 years later. (In 1966, the National Academy of Science/National Research Council outlined the problems of the lack of services, facilities, and care for trauma and emergency victims in its landmark white paper, "Accidental Death and Disability: The Neglected Disease of Modern Society.")

The symposium will address the initial recommendations to reduce accidental death and injuries contained in the paper and will assess the progress made to date.

Subjects to be discussed include: accident prevention; emergency first aid and medical care; emergency facilities; trauma registries; hospital trauma committees; convalescence, disability, and rehabilitation; autopsies of victims; trauma research; and caring for casualties from natural disasters.

For more information, contact Patricia McAllister, MIEMSS, 301/528-2399.

Mitigation of Natural Disasters

(Continued from page 2)

and severity of geological phenomena (for example, earthquake, land slides, tsunami, and floods) are being developed all over the world. Modern technological capabilities are combined with historical data extending as far back as 2500 to 3000 years to produce these depictions of probability of occurrence of natural phenomena.

Seismic maps provide a simple, direct message regarding seismic exposure and the forces to be considered in the design of structures. According to Dr. Krimgold, many people in the eastern United States assume that the earthquake threat is limited to the west coast and Alaska. However, there are significant seismic zones in the east, which are probably more vulnerable to significant damage because the population has had less experience with earthquakes.

"Seismic risk maps really should be used to make a difference in how people behave," said Dr. Krimgold. "They should influence how people value a scenic view versus safety and where they place their money and their lives in terms of natural hazards."

Despite the knowledge of natural disaster potential, communities are being developed in areas with high risk for these phenomena. Dr. Krimgold cautioned that the "invisible threats" must be taken into account.

Some communities are being developed downstream from dams that may be threatened by future earthquakes. "Natural threats are exacerbated when development occurs in ignorance or without respect for potential hazards," stated Dr. Krimgold.

A comprehensive program of flood plain mapping has been established and is directed toward creating disincentives for flood plain development. It is difficult to directly outlaw building on flood plains, not only because of legal impediments but also because of the very complex economic, social, and cultural aspects of determining what risks private individuals and organizations should be allowed to take.

Based on analysis and experience with tsunami (large sea waves produced by earth movement under the ocean), estimations have been made of potential tsunami run up in coastal areas. Mea-

(Continued on page 8)

Rescue Dogs Assist Earthquake Victims

Rescue dogs from the United States found 22 people alive in buildings that collapsed in the September 1985 earthquake in Mexico City. The dogs searched through the ruins, where humans could not go, to locate survivors.

Linda Wallace, who is the chief program administrator for the Montgomery County Health Department, and her dog Bourbon were one of many teams that participated in the international response to the Mexican disaster. Ms. Wallace described their experiences in a presentation at the Second International Assembly on EMS, which was held in Baltimore in April.

Services of the American dog teams were obtained by the Agency for International Development (AID) and the transportation of dogs and handlers was facilitated by the Department of Defense and funded by AID's Office of U.S. Foreign Disaster Assistance.

The rescue dogs employed in this disaster response are air-scenting dogs. They are trained to search for human scent and to communicate with their handlers when they make a "find." These dogs are often used in wilderness searches and, because they can locate human scent through water, mud, and snow, they are also called in to locate victims of drownings, mud slides, and avalanches. (Man-trailing dogs are trained differently: they detect the scent of an individual rather than of humans in general.)

All humans (alive or dead) have a similar scent, just as all cows smell alike and all deer smell alike. Air-scenting dogs are trained to search off their lead at the command of their handler, hunt for human scent, bark or paw the ground when they find that scent, return to their handler, and lead the handler to the person.

Many of the dogs that are trained to search are sporting and working breeds. The group of dogs that was taken to Mexico from the United States included a Labrador retriever, a Golden retriever, a Doberman, German shepherds, and an Australian Kelpi. The dogs must pass a basic obedience course, be familiar with the noise and movement of aircraft that take them to the disaster scene, and be able to search from boats and land vehicles. They also must be motivated to participate in search and rescue.

Rescue workers search for victims trapped in a collapsed apartment building in Mexico City. (Photos courtesy of Linda Wallace.)

One of several dogs assisting in the search for victims of the Mexican earthquake.

Seventeen people and 13 dogs from this country spent approximately 1 week in Mexico City. They searched 68 buildings during that time. Dogs and handlers can be expected to work 12-hour shifts with appropriate food and water breaks. They can work day and night and in most weather conditions.

The dogs travel and stay with their handlers. Because of their intensely close relationship in Mexico, the handlers were able to distinguish between the dogs' excited reaction to a survivor and their depressed response to a dead person. The dogs could also tell when it was useless to search a building. In one particularly devastated area, a dog started up a rubble pile but quickly came back down and refused to go up again. An immediately adjacent pile was searched enthusiastically and resulted in a live find.

The search for survivors of the Mexican disaster was both exhilarating and emotionally devastating for the humans and the dogs involved. In describing the emotional toll for the dogs in finding so many dead people, Ms. Wallace told of her own experience with Bourbon on their third day in Mexico. When it was

(Continued on page 7)

Bourbon takes a break from searching the rubble from the Mexican disaster.

(Continued from page 6)

time to start the day's search, Ms. Wallace couldn't find her dog. She looked around her quarters and finally found Bourbon under the bed, obviously reluctant to go back to the disaster site. The other dogs were having a similar reaction: they were depressed about finding so many dead bodies and so few survivors.

A "stress debriefing" was planned for the dogs. The group's interpreter was sent into a building to hide in the rubble. The dogs were sent in one at a time to search. Bourbon's reaction to finding someone alive was to jump on a nearby desk, with her ears up and tail wagging, and bark excitedly. From then on, she worked happily.

Several countries sent rescue dog teams to Mexico. After a few days, it became obvious that more coordination of their work was needed to avoid duplication of building searches. To increase their effectiveness, representatives from the various groups met in a hotel each evening to share information about the day's search and to plan for the next day. One of the most resourceful members of this group was an American who speaks five languages fluently. Interpreters for the many facets of the rescue effort were provided by the American embassy.

The American dog teams arrived in Mexico City 48 hours after the earthquake. If they had been able to respond sooner, more lives could have been saved. Since the experience in Mexico, an international dispatch system has been established so that dog teams can be sent promptly to disasters anywhere in the world.

In addition to the Mexico disaster response, dog teams have participated in the rescue of victims of the mud slide in Puerto Rico and the floods in West Virginia, all without injury to any dog.

In the United States, there are 49 rescue dog units, with more than 200 dog/handler teams. Each unit has its own operational standards, capabilities, and resources. For more information about these units, contact the National Association for Search and Rescue, P.O. Box 50178, Washington, DC 20004.

—Linda Kesselring

Terrorism Is Highly Choreographed Theater

"When terrorists attack Americans on an airplane, the real target is not those people on the plane, but the American public as a whole. The primary interest of the terrorists is to cause insecurity, to show a lumbering giant of a country unable to protect its citizens. Terrorism is political extortion, the warfare of the weak," says Robert H. Kupperman, PhD, director of science and technology at the Center for Strategic and International Studies at Georgetown University in Washington, DC.

Dr. Kupperman, who serves as a consultant on security matters to governments and industries around the world, spoke in Baltimore recently at the Second International Assembly on EMS.

"Terrorism is highly choreographed theater, aided and abetted by the media," Dr. Kupperman says. "The weapons used may be low-tech handguns, grenades, or automatic weapons, but their logistics support is of the highest magnitude of technology—jet airplanes and satellite communications that instantly reach around the world. The purpose of terrorism is to make large governments look impotent." During 1985 there were 800 terrorist incidents worldwide, causing approximately 1,000 deaths. Dr. Kupperman says that compared with traffic fatalities worldwide that is a minor phenomenon. However, it engenders feelings of helplessness.

New forms of terrorism are emerging. Tactics have already changed from using handguns to trucks carrying bombs that require intricate fusing systems. It is not the terrorist with an atom bomb in his suitcase that we have to fear, Dr. Kupperman says; nations/states will withhold that advanced technology for fear of creating a monster that they cannot control. But terrorists of the future will be technologically more sophisticated. They will threaten the fabric of modern society: water supplies, computer systems, natural gas or oil pipelines, and regional electrical grids. This will create a whole new set of medical, economic, and emotional problems.

Dr. Kupperman expects an increase in terrorism in Europe and the Middle East within the next few months. He says that terrorism will take longer to reach the United States—perhaps two or three years—because it will take time for the terrorists to build the infrastructures they need, including training, a base of people willing to help, money, equipment, safe houses, and forged travel documents.

Sponsorship of terrorism is changing. Syria, Iran, and Libya are actively directing and using terrorist groups as surrogates for specific operations for very specific political purposes. According to Dr. Kupperman, "Some people say that we should stop the underlying social problems to stop the terrorism; my contention is that when you see someone hemorrhaging you do not first attend to his nutritional deficiencies."

Dr. Kupperman states that to learn of impending events this country must develop its covert intelligence capabilities, with operations such as the successful penetration of violent organizations by the FBI. "The rules of warfare have changed; we cannot deal with this chivalrously. These actions require responses that are repugnant to us," he says. Countries like the United States and other democracies that insist on the dignity of man and the protection of human rights are particularly vulnerable. He suggests that international cooperation should be increased, with informal relationships between intelligence agencies and police departments to share information about terrorists. Physical security must be improved at airports, with hand inspection of all luggage on dangerous routes. There should be supervison of maintenance personnel, caterers, mechanics, and cleanup crews, who in many instances may have been bribed to plant bombs or weapons aboard planes. Seats should not be preassigned; this will introduce uncertainty as to where to look for weapons hidden on board. These measures may cause inconvenience and delays, but we will get used to them, Dr. Kupperman says.

Are these infringements on our civil liberties? They may be, but the experts consider it a small price to pay.

—Erna Segal

Published monthly by the
Maryland Institute
for
Emergency Medical Services Systems

University of Maryland at Baltimore
22 S. Greene St., Baltimore, MD 21201–1595

Director: R Adams Cowley, MD
Editor: William E. Clark,
(301) 528-7800
Managing Editor: Beverly Sopp,
(301) 528-3248

Address Correction Requested
MIEMSS, Maryland EMS News,
22 S. Greene St., Baltimore, MD 21201-1595

Mitigation Reduces Effects of Disasters

(Continued from page 5)

sures are being taken to restrict the development of the areas with the greatest potential for damage. Those areas are often the choicest development sites for hotel and beach resorts, but, in the interest of public safety, local authorities should not allow people to be exposed to the risks of those areas.

A great deal of research has been done on structural engineering, building materials, and building configurations related to disaster damage reduction. This has enhanced our ability to respond to known threats by establishing standards for building construction. "It is no longer a mystery," said Dr. Krimgold. "We can build safe structures."

In addition to standards for new construction, research has provided ways to evaluate existing buildings and techniques to strengthen them. In single family homes, for example, masonry chimney braces and foundation tie downs can greatly reduce damage and the threat of injury.

Another major problem associated with natural disasters is damage to critical facilities. Life line systems, communications systems, and nuclear power plants and industrial facilities that can release secondary hazards must be given special priority in disaster mitigation plans.

Life line networks can be evaluated to determine where failure may occur. Reinforcement of the nodal points, introduction of redundancy, and other defensive mechanisms will decrease the potential for loss of function.

Vulnerability assessment of existing structures is a very important carry-over from mitigation to response planning. This process is particularly relevant to EMS because, in the assessment of the current status of buildings in urban areas, we are able to predict, with a good deal of reliability, where problems are most likely to arise in the next incident.

Introducing mitigation into a society is even more complex than increasing response preparedness. In mitigation, we are really trying to influence the location of buildings, the management of development, the character of construction, and basic economic investment decisions in terms of public works and private development. We have to get the message of natural hazards out in many different formats to very different audiences: to the local community, to professionals (engineers and technical people), and to public and private policy makers (the people who decide where major investments are made.)"

Dr. Krimgold noted that "the phenomena about which we need to educate the public are abnormal: they do not occur regularly or predictably." A difficult problem in many parts of the world is giving the public a tangible sense of what those disasters are like and what the possible ramifications could be. The Tokyo Fire Department has assembled a truck that is taken to schools, shopping centers, and other public centers to demonstrate the effects of earthquake. The truck can shake at various intensities to give people the experience of an otherwise totally abstract concept.

"All these activities are intended to add up to a contribution to comprehensive development planning," said Dr. Krimgold. "Ultimately, mitigation is a set of actions that have to be understood not only by professionals but also by the general public and by public and private sector investors in terms of modifying the direction of development and modifying public behavior permanently."

—Linda Kesselring