

# Contract for Helicopter Fleet Awarded to Aerospatiale Corp.

The contract for building Maryland's new fleet of Med-Evac helicopters has been awarded to Aerospatiale Helicopter Corporation. Final approval for the agreement was given by the state's Board of Public Works on September 7, 1988. The company was selected in June, through a competitive bid process, by the Maryland Executive Helicopter Advisory Committee (MEHAC). The contract with Aerospatiale calls for the construction of six helicopters, called 365N-1 Dauphin II, at a cost of \$25.8 million — about \$4.3 million per aircraft.

According to MIEMSS Director R Adams Cowley, MD, who wants "the very best for the citizens of this state—I want all of them to survive," the 365N-1 Dauphin II helicopters are the best vehicles for the enhancement of the Med-Evac system.

"The advantages of these helicopters are their greater speed, range, and lift," stated John Stafford, MD, MIEMSS state aeromedical director. "These larger vehicles can accommodate more medical equipment and patients than the helicopters currently being used."

"The Bell Jet Rangers have served Maryland very well," noted Dr. Stafford. The first Med-Evac transfer to the MIEMSS Shock Trauma Center was made in 1970. More than 32,000 patients have been transported by the Maryland State Police (MSP) Aviation Division in the subsequent 18 years. "As we enter the 1990s," continued Dr. Stafford, "with our expertise in the management of traumatic injuries, it is time to upgrade our Med-Evac system."

A leasing arrangement for a Dauphin will give the state use of the new model by the end of 1988. Delivery of the first purchased vehicle is expected in March; the sixth helicopter will arrive in late 1989.

The medium-size, twin-engine aircraft can fly 180 mph, and they have a range of 520 miles. On-board instrumentation will allow pilots to fly more safely if unanticipated limited visibility is encountered. The helicopter engines and frames are being constructed in France and will be shipped to Texas, where the final assembly of the vehicles will take place.

The awarding of the contract was the result of a careful, thorough review of the needs and resources of the state's helicopter program. MEHAC, an oversight policy committee established by the legislature and chaired by Lt. Gov. Mel-

vin Steinberg, directed the process and reported its work to the executive branch of the state government. The committee consists of representatives of agencies involved in the Med-Evac system: the state legislature, MIEMSS, the MSP, the Maryland Department of Health and Mental Hygiene, the state's Department of Budget and Fiscal Planning, and the fire/rescue services.

A Maryland Department of Transportation procurement team was formed to create the request for proposals and evaluate the five bids that were submitted. The team made its findings known to MEHAC, which in turn selected the contract award. The procurement team had three components: a medical team, a technical team, and a price team. Members of those subgroups were experts in the respective areas and represented agencies such as MIEMSS, the MSP, PHH (the consultant firm that studied the Med-Evac system after the fatal crash in 1986), the Maryland Department of Transportation, and the Maryland Department of Budget and Fiscal Planning. Their evaluation checklists totaled almost 12,000 points that were tallied to produce scores for each bidder. Reviews by each team were conducted independently.

The "mission profile" of the Med-Evac program contains three "operating scenarios": medical evacuations; search and rescue flights; and law enforcement aerial support such as transporting bomb detection dog teams and pursuit of and search for escapees. Medical evacuations remain the top priority mission, as they were jointly established by the MSP and MIEMSS at the program's inception.

About 75 percent of flights are medical evacuations, many of them transports from the scene of injury to a medical facility. The Bell Jet Rangers have enough



space for two patients in a stacked configuration, a pilot, and a flight paramedic. The Dauphin can carry two critically injured patients on side-by-side litters, the pilot, two medical attendants, and a co-pilot if needed.

The new helicopters are to be fitted with medical equipment that will expand the use of Med-Evac missions in inter-hospital transports and to special patient populations. Ventilators, monitors, and IV pumps will enable aeromedical teams to provide the support needed by such patients. One example of this enhanced capability relates to spinal-cord-injured patients who need to be moved from one facility to another. As Dr. Stafford explained, some of these patients are dependent on dopamine drips, which must be maintained during transport. The IV pumps in the Dauphin will allow uninterrupted administration of the drug, which cannot be guaranteed on the smaller helicopters due to vibration.

Special training programs will be scheduled throughout the state to introduce prehospital care providers and hospital personnel to the Dauphin and to

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Six new 365N-1 Dauphin II helicopters will soon be added to Maryland's Med-Evac fleet under a contract with Aerospatiale Helicopter Corporation.

# Survey Assesses Regional Systems

Results of a nationwide survey indicate that Maryland is one of only two states that have all the essential components of a regional trauma system. The survey was conducted in 1987 to assess the nation's progress toward goals set forth in previous publications. In 1966, the National Research Council published a monograph titled "Accidental Death and Disability: The Neglected Disease of Modern Society," which described the

magnitude of the program of traumatic injuries and stated specific recommendations for solutions. Twelve years later, the Council issued another document, "Emergency Medical Services at Midpassage: A Report of the Committee on Emergency Medical Services." That study also found "disappointingly slow" progress in implementing regional trauma systems.

The 1987 study was conducted by

John G. West, MD, from St. Joseph Hospital in Orange, California; Donald D. Trunkey, MD, of the Oregon Health Sciences University in Portland, Oregon; and Charles C. Wolfert, Jr., MD, from Hahnemann University Hospital in Philadelphia. Their findings were published in the June 24, 1988, issue of the *Journal of the American Medical Association (JAMA)*.

Using the criteria established by the American College of Surgeons regarding the designation of trauma centers and the establishment of trauma systems, the investigators developed eight questions, which were asked of state EMS directors or members of health departments responsible for emergency and trauma planning. Information was obtained from all 50 states and the District of Columbia.

The following questions were posed:

1. Does your state have the legal authority to designate trauma centers?
2. Does your state have a formal process for designating trauma centers?
3. Does your state use the American College of Surgeons' standards for trauma centers?
4. Do you use out-of-area survey teams for trauma center designation?
5. Is the number of trauma centers based on patient volume or the population of the area?
6. Are triage criteria in writing and do they form the basis for bypassing nondesignated hospitals and sending patients to trauma centers?
7. Are there ongoing monitoring systems for trauma centers?
8. What percentage of the state is covered by trauma centers?

Only Maryland and Virginia had all eight components of a regional trauma system. Nineteen states and the District of Columbia had incomplete statewide coverage or lacked essential components. The process of trauma center designation has not been initiated in the other 29 states.

The authors offer a five-step strategy for the implementation and management of a comprehensive system of trauma care. They conclude by cautioning the medical community that, if the public's expectations for high-quality health care are not met, "outside control and regulation" may be imposed on the health care community for the development of regional trauma systems in areas that currently lack them.

## Fleet's Capabilities Expanded

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discuss patient care and loading procedures to be used for Med-Evac transports.

The pilots, mechanics, and medics of the MSP Aviation Division are fine-tuning their proficiency with the new aircraft. Maj. Warner Sumpter, commander of the division, explained that all pilots were instrument trained by the end of August. At the Aerospatiale facility in Texas, they will attend ground school training in aspects such as the craft's engines, hydraulics, and avionics. They will also attain at least 20 hours of flight time, during which they will gain experience with the aircraft and rehearse responses to emergency procedures such as hydraulic or electrical failures, one- and two-engine shutdowns, and landing gear lockup.

Mechanics will attend several weeks of training on the electronics and airframe of the Dauphin. An additional 2-week program will focus on the overhaul and repair of the helicopter engine.

By July 1989, all flight medics will have completed EMT-P training. Maj. Sumpter noted that the enhanced medical equipment and increased space on the Dauphin will enable the medics to more fully apply their ALS skills, some of which they could not use in the limited space of the Bell Jet Rangers.

The Dauphin expands the division's abilities in search and rescue missions. A hoist mechanism can be used to raise victims to the hovering aircraft. The vehicles are also equipped with a FLIR (forward-looking infrared) system that detects body heat and therefore is useful in locating lost or injured people in wooded areas or on water.

The MSP is working in conjunction with fire departments throughout the state to train personnel in operational procedures. Maj. Sumpter stated that "it is a matter of awareness of the differen-

ces between the old and new helicopters. We are going from an aircraft with skids to one with wheels. The clearance below the Dauphin is different than that of the Ranger. The rotor clearances and loading procedures are different. These things must all be considered when a landing zone for the Dauphin is chosen by rescue personnel at the scene."

Maj. Sumpter further noted that the MSP Aviation Division has expanded in pilot, paramedic, mechanic, and other support staff from 76 personnel in the spring of 1986 to 127 positions commencing in FY 1989 (July 1988—June 1989). These increases were approved by the executive department and legislature to increase the operational sections from six to eight and to meet the resulting needs for maintenance and other support.

During the 1988 session of the Maryland General Assembly, \$3.5 million was allocated for the expansion of hangars and the construction of maintenance facilities. "We will begin by modifying and building structures at Martin's Airport in Baltimore County," stated Maj. Sumpter. "Facilities will be expanded in other parts of the state in subsequent fiscal years as funds are designated by the legislature."

A study is being done by the MSP regarding the disposition of the Bell Jet Rangers. Possible cost-effective uses include pilot training and noncritical transport of state personnel.

Dr. Cowley sums up the feelings of many when he says, "We have waited for these new helicopters very patiently during the last 2 years. With the new helicopters and the new Shock Trauma Center building coming on line at about the same time, we will make a quantum leap into the future for improved trauma and EMS care for the citizens of Maryland."

— Linda Kesselring

— Linda Kesselring

# CISD: Help for Coping with Stress

"It's very important to help EMS personnel, firefighters, and police officers—who respond to human tragedy every day—to overcome their severe stress reactions. They are probably doing some of the toughest jobs in the world and giving the highest quality service," says Marge Epperson-SeBour, director of the MIEMSS Critical Incident Stress Debriefing (CISD) program.

"CISD is an all-volunteer effort. Mental health professionals, some of whom manage federal agencies or are private practitioners specializing in stress-management practice, emergency department psychosocial clinicians, employee assistance personnel, or other skilled personnel, join with peer support persons from the field to show that they care about emergency personnel just as the emergency personnel care about the people in their communities," according to Ms. Epperson-SeBour.

Maryland has 85 volunteers on the CISD teams: 25 professionals and 60 peer support members. From January 1 to June 30, 1988, CISD teams did 14 defusings, 22 debriefings, and 16 public education sessions. CISD volunteers worked 1,226 hours and met with 614 personnel in that time period.

A brief description of the services offered by the CISD teams follows.

**Defusing:** This takes place on or near the scene of a critical incident or immediately after return to the station. On site, team members work one-on-one or in small groups with emergency personnel, make recommendations to command officers on needed respite for personnel, and monitor stress levels of individuals on the scene. Defusings are done before the units go off duty. CISD teams educate response personnel about what reactions they might experience, such as changes in sleeping or eating habits, wanting to withdraw, an increased level of anxiety, or other physical or emotional reactions. Defusings are usually very brief and are followed later by a formal debriefing session(s).

**Debriefing:** Focused on a specific event, a group psychological debriefing usually takes place within 48 hours of a defusing. Debriefings ordinarily take 2-4 hours and are needed when a critical incident has a heavy emotional impact on first response people, when it closely follows other incidents, or when it involves children or colleagues. This is a chance for personnel to share feelings, to find out

they are not alone in the way they feel, and to learn how to overcome the impact of the incident.

**Stress Management:** When personnel are "stressed out" by many things but not one specific incident, the CISD team conducts stress management workshops; techniques including mental focusing are taught. In addition, workshops are often offered to the spouses and families of emergency personnel who are under great stress, and educational workshops are offered to teach emergency personnel how to prevent becoming "stressed out."

Although the CISD program is statewide, in keeping with the regional approach of the Maryland EMS System, it is recognized that different regions have different needs. Therefore, CISD teams are based all over the state and staffed, as much as possible, by people from the region. This has two advantages: the CISD team can respond faster and the team members are familiar with the needs of the area. Every region has the backup support of the other regions throughout the state when needed. To strengthen this aspect of the system, meetings are being held in each region to identify key people, analyze the needs of each area, and adapt policies appropriate to each area. At this point, the Eastern Shore area is in the need of more CISD team members.

## Recruiting EMTs

As part of a Maryland Department of Transportation grant, MIEMSS will conduct a series of workshops on the problems of recruitment and retention in the volunteer EMS and fire services. The workshops will provide participants with information and ideas to boost their local recruitment efforts.

The workshops will be open to company officers and interested persons from the fire or EMS service and will be held in each region on the following dates:

Region I	October 22
Region II	December 10
Region III	November 12
Region IV	November 19
Region V	November 5

For additional information, locations, and times, contact your regional administrator.

The goal of the CISD program is to deliver high-quality service. The full team meets four times a year to provide in-service education, discuss policies, and evaluate the system. Ultimately, it is hoped that there will be certification and accreditation for debriefers. CISD team members now carry identification cards; when they are certified, they will wear patches.

The need for CISD is being recognized in other areas. Currently there are 64 CISD teams throughout the country, but only three states have statewide CISD programs. Ms. Epperson-SeBour, who is also director of MIEMSS psychosocial services, was a consultant to the state of Nebraska in helping them set up a statewide CISD system patterned after Maryland's. Nebraska's governor mandated that emergency agencies—fire, police, EMS, and public health—work together. Their protocols and procedures are almost identical to those in Maryland. One important difference is that in Nebraska the CISD team is transported by police; in Maryland the team is responsible for its own transportation.

Ms. Epperson-SeBour was also a consultant to the US Department of Justice Special Task Force to develop a network of special emergency response teams to provide psychological support for critical incidents within the federal prison system.

Maryland's CISD program has been utilized so frequently that there is now a need for a full-time person to do the paperwork, alert the teams, and maintain the computerized data.

"Before the CISD program was used, good emergency personnel were lost when stresses built up to such a high level of distress that they had to leave emergency service. We give them the opportunity to deal with their feelings effectively and educate them so they will know that what they experience is usually a normal human response to an unusually stressful event," Ms. Epperson-SeBour says.

For further information about CISD programs, contact MIEMSS psychosocial services at 301-328-6416 or call your regional administrator: Region I: Dave Ramsey—301-895-5934; Region II: Dick Metettal—301-791-2366; Region III: John Donohue—301-328-3996; Region IV: Marc Bramble—301-882-1799; Region V: Marie Warner-Crosson—301-474-1485.

— Erna Segal

# Washington County HazMat Team . . .

The Washington County Hazardous Incident Response Team (HIRT) has been in operation since November 1987. Its creation was the result of three years of assessment of the county's preparedness for hazardous materials (haz mat) incidents. With the growing number of industrial parks and trucking terminals in this western Maryland county, members of the fire and rescue association, county government officials, and representatives of industrial companies agreed that a HIRT was needed.

One of the members of the Washington County HIRT is Douglas DeHaven, who is also assistant chief at the Volunteer Fire Company of Halfway. He noted that most of the haz mat situations in the county are related to transportation incidents. The interchange of Interstates 70 and 81 is in the center of Washington County. The heavy use of those highways by tank trucks hauling many kinds of chemicals was an impelling reason for the establishment of the HIRT.

Just before the team officially went into service, a serious haz mat incident occurred at the intersection of Routes 65 and 70. A tanker containing 40,000 pounds of the industrial solvent dimethylformamide went down an embankment after the driver experienced a fatal heart attack. Although the leak from the tanker was significant, evacuation of homes in the area was not necessary because they were some distance from the crash site and weather conditions did not create additional complications. Washington County HIRT members had received training in containment of hazardous materials but had not yet acquired funding to purchase the protective equipment needed to enter the hazardous area. They contacted the manufacturer of the chemical, E.I. Du Pont de Nemours & Co., and a clean-up team was flown to the site from West Virginia.

Since the day of that incident, the Washington County HIRT has proceeded with its plans for development of a fully operational team to provide immediate response to local incidents. Greg Socks, who led the effort to establish the team and who is now its coordinator as well as a member of the Montgomery County Fire Department, described the training that is required of team members. Nineteen members have completed a 40-hour level II course in hazardous materials management. Training has also been obtained through other agencies,

including the Maryland Fire and Rescue Institute, the Montgomery County Haz Mat Unit, the Safety Systems Training Center in Florida, and the Washington County Civil Defense and Disaster Preparedness Agency. Members obtain 24 hours of additional training in aspects of haz mat response annually. Financial support for the training modules has been provided by the Washington County commissioners.

Two trainees are at level I, having met the educational requirements in basic and special fires and in tactics/fireground operations. Other prerequisites for membership in the HIRT include EMS certification at a minimum of first responder level (EMT certification is recommended), membership in a county or city fire/rescue department, and three years of fire/rescue experience.

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*(Top) During a July Sunday morning training exercise in Hagerstown, the Washington County HIRT practiced using communications equipment enabling them to talk with one another and the command center. (Bottom) In a mock hazardous spill, air sampling and drum patching techniques were also practiced. Team members participating included: Doug DeHaven, Dave Harmon, Greg Socks, Rus Grim, Kevin Kotanko, John Bentley, and Chris Amos.*

# ... Prepared for Chemical Emergency

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The team conducts two drills per month. A 40-foot box trailer, donated by United Parcel Services, is used to simulate chemical leaks in a confined area, the kind of haz mat situation most frequently encountered in the team's response area.

The HIRT is based at Station 25 in Halfway, Maryland, near Hagerstown. That station also houses the county's two air units, trucks that are equipped to refill air packs used by firefighters and the HIRT team. By July 1987, the HIRT had raised enough money to purchase a 1981 Ford van that, through volunteer efforts, was converted into Haz Mat 25, the team's response vehicle.

The HIRT has a close working relationship with local industrial firms. These businesses donated equipment for the team and money for purchases of other items. Industry representatives are available to lend their expertise on chemical compounds; formal agreements with

industrial chemists and business representatives are being developed.

The county commissioners have supported the HIRT with allocations in the past three annual county budgets. They most recently marked \$30,000 for the purchase of encapsulated suits, breathing apparatus, and communications equipment. Local support has also come from private organizations, which donated funds for equipment.

The HIRT is notified of a hazardous spill through the county's fire and rescue communications system. It may be requested by the fire/rescue company on the scene, or the county dispatcher may request a haz mat response with the initial call.

The first action taken in any haz mat incident is to secure the scene. By establishing a hot zone or contaminated zone, civilians as well as emergency services personnel are kept out of the area until the hazardous material is positively iden-

tified and a plan of action established. When the hazardous material is identified, protocols for containment and control of the spill are activated; simultaneous evacuation of the immediate area is conducted by fire/rescue personnel if movement of a toxic cloud or spill is likely to affect nearby homes or businesses. When necessary, HIRT members enter the contaminated area in encapsulated suits and seal the ruptured container or otherwise control the source of the hazard.

A minimum of six members responds to an incident. In addition to the team leader, two men use total containment suits and two provide back-up for them. Other members prepare to decontaminate the team members coming out of the hazardous zone.

The HIRT reports to the incident commander, who is usually the fire chief of the company in the area where the incident occurred. Team members are also an important liaison between the incident commander and the industry representatives in communicating instructions related to the equipment and procedures needed for a particular response.

Mr. DeHaven emphasized the need for fire company personnel to respect the importance of staying out and keeping others out of the contaminated zones. The area is identified with colored cones or barrier tape, depending on its size.

Washington County experiences approximately 30 haz mat incidents per year. The HIRT was called to five spills in the first five months of its operation.

"The Washington County HIRT is a tremendous asset," stated Dick Mettetal, MIEMSS Region II administrator. "I have seen the team members in action on Interstate 70, and they do a fantastic job under very hazardous conditions. We are fortunate to have the availability and capabilities of these trained professionals to handle the serious emergencies that are inevitable along the region's busy interstates."

—Linda Kesselring

## 11th National Trauma Symposium

The 11th National Trauma Symposium, sponsored by MIEMSS, will be held December 1-3 at the Baltimore Convention Center. The theme for this year's event, "Building . . . Today's Foundation, Tomorrow's Systems," stems from the January 1989 opening of the R Adams Cowley, MD, Shock Trauma Center on the campus of the University of Maryland at Baltimore. Symposium participants are invited to a Hard Hat Reception in the new building, which will be held from 6-8 pm on Thursday, December 1.

As in previous years, trauma care specialists from across the country will present lectures, workshops, abstracts, and poster displays on a variety of topics. The intended audience includes trauma surgeons; anesthesiologists; emergency, critical care, and rehabilitation physicians and nurses; operating room nurses; psychosocial clinicians; and respiratory, physical, and speech therapists.

Plenary session lectures will focus on subjects such as rural trauma, corporate ethics, designing specific treatments for brain injury, pediatric trauma, aesthetic rehabilitation, alcohol and trauma, and HIV seropositivity among the MIEMSS Shock Trauma Center patient population. Twenty-eight workshops will be offered in five time slots, allowing participants to choose presentations specific to their disciplines and interests. In the

abstract sessions, scheduled for the afternoon of Friday, December 2, trauma center personnel will share the results of clinical studies, research projects, and case presentations.

On Wednesday, November 30, pre-symposium workshops will be offered. Topics are neurotrauma nursing, legal issues, lessons learned from building the new shock trauma center, MIEMSS' critical incident stress debriefing program, and challenges of reintegrating traumatically injured young adults into the community.

The Trauma Nurse Network will meet on Wednesday at 5:30 pm. Agenda items include an update on standards and formalization of the organization's structure.

Also prior to the convening of the symposium, three ATLS provider courses will be held: Adult ATLS for Physicians, Adult ATLS for Nurses, and Pediatric ATLS for Nurses. These 2-day courses are scheduled for November 28 and 29. Registration is open only to symposium registrants.

After the conclusion of the symposium on Saturday afternoon, a tour will be conducted of the USNS Comfort, the navy's newest hospital ship—a 1000-bed floating medical facility.

For information and a brochure, contact Kimberly Unitas at 301-328-2399.

### Region II Phone Change

The Region II EMS Office has changed its phone number for Frederick County residents to 293-7249. Washington County residents can reach the Region II Office by dialing 791-2366.

# Statewide Hurricane Drill Successful

Weather forecasters suspect there will be a heavy crop of hurricanes this year. In this area there are normally seven tropical storms a year, most of which do not become hurricanes; this year 11 tropical storms are expected, of which seven might become hurricanes.

To prepare for these possible emergencies, Gov. William Donald Schaefer arranged a statewide integrated emergency management course and hurricane drill involving department heads of appropriate state and federal agencies. The course and drill were held July 7-8 using two emergency operations centers (EOC) at the Maryland State Police Headquarters in Pikesville and at the Howard County Office of Emergency Management and Civil Defense in Ellicott City.

The course, which was developed by the Federal Emergency Management Agency (FEMA), had never before been given on a statewide basis. Participants included representatives of the US Coast Guard, Maryland State Police, US Department of Health and Human Services, MIEMSS, Civil Defense, Department of Agriculture, Fire Marshal, Bell

Atlantic Telephone, Baltimore Gas & Electric, Red Cross, Maryland National Guard, Maryland Office on Aging, and the Maryland Departments of Health and Mental Hygiene, Human Resources, Transportation, Natural Resources, Environment, Public Safety and Corrections Services, Housing and Community Development, Economic Development, Personnel, General Services, and Education.

Each agency explained its responsibilities, resource capabilities, communications capabilities, and key points of coordination. The scope of the course was to initiate actions to manage emergency operations within the sphere of responsibility; select and deploy resources to support state and local operations; coordinate activities with other organizations; record, report, and disseminate information; use communications within the EOC; participate in briefings to update authorities; and coordinate with operational personnel to prepare emergency public information and news releases.

Simulated emergency situations were introduced using a control team

that used simulated newscasts, reports from field personnel, and county situation reports.

The drill, labeled "Hurricane Bob," had the following scenario:

- Coastal flooding 8-12 feet above normal with maximum winds of up to 130 mph
- Possibility of tornadoes on the Eastern Shore and in western Maryland
- Significant beach erosion
- High tides along the coast 8-12 feet above normal
- Heavy rainfall of 10-12 inches
- Tidal flood warning on the Potomac River; water 10-11 feet high at the Wisconsin Avenue gauge (about 7-8 feet above what is normal at high tide)
- Bay floods 6-10 feet above normal
- Major river and small stream flooding over the Potomac River and Chesapeake Bay tributaries
- Hurricane Bob would pass Baltimore and continue north/northwest toward Pennsylvania.

Simulated incidents during the hurricane drill included the flooding of Conowingo Dam; a two-bus accident with injuries; the evacuation of Ocean City; phone outages; the closing of bridges; the closing of the Baltimore Harbor Tunnel; the closing of BWI Airport; power outages; and no rail traffic north of Washington, DC.

MIEMSS' responsibility during the storm was to support local EMS and coordinate emergency medical care for critically ill and injured patients; coordinate transport for those patients; determine bed availability at emergency medical facilities; and reserve the beds as needed. A critical incident stress debriefing (CISD) team and a disaster medical assistance team (DMAT) were "set up" in Somerset County and a second DMAT team was "set up" on the west side of the Bay Bridge. MIEMSS was also responsible for determining medical support needed for the evacuation of Ocean City.

The Maryland State Police "evacuated" its helicopters to the mountains of West Virginia for safety, since the scenario had Martin's Airport under water.

According to Ken Young, director of prehospital care and one of MIEMSS' representatives at the drill, the participants were pleased with the response to the drill which identified potential problems, and they agreed that the key to survival is preparation — and Maryland will be prepared for nature's surprises.

— Erna Segal

## ALS Program Serves Caroline County

The ALS program in Caroline County went into service on June 1, 1988. Its establishment followed a needs assessment conducted in early 1987 by a committee of the Caroline County Firemen's Association. The MIEMSS Region IV office and Memorial Hospital at Easton also participated in the study and development of the program.

In June 1987, the county commissioners provided funding for the purchase of a vehicle and equipment and the salary for one ALS provider. CRT Robert Schoonover accepted the position; he is on duty between 7 am and 5 pm, Monday through Friday. ALS coverage is provided on night shifts and weekends by 15 volunteer CRTs and paramedics.

The ALS unit is based at Station 10 in Denton. Satellite units are operated by the Ridgely and Federalsburg volunteer fire departments. The president of Caroline County ALS is Alan Bradley. Mr. Schoonover is the ALS Coordinator.

With funds allocated by the state legislature, MIEMSS procured a radio and monitor for the county unit as well as for the Ridgely and Federalsburg volunteer fire departments. John Barto,

assistant administrator of MIEMSS Region IV, noted that "this is a good example of the state's EMS system working to help local program development." Mr. Barto and Marc Bramble, Region IV administrator, have worked closely with county fire and rescue personnel during the establishment of the ALS program.

Valuable support for the program has been extended by Margie Callahan, RN, and Charles Schoenfeld, MD, at Memorial Hospital at Easton. Community organizations have been generous in their donations of equipment and funds.

During the first month of the program's operation, 94 calls for ALS were received. The county averages 2,000 ambulance calls per year, half of them requiring ALS. The need for ALS response is determined by standard operating protocols for priority dispatch and evaluation of calls by the county dispatcher.

Plans are in place for expansion of the program. The county commissioners have allocated funds for another vehicle, which will be purchased in the fall. It is anticipated that an additional ALS provider will be hired in November.

# Programs Focus on Behavioral Crises

A behavioral emergency occurs when a person who is believed to be mentally disordered creates a clear and imminent danger of causing bodily harm to himself or herself or to others. Maryland's Behavioral Emergencies Project offers training about the roles of prehospital care providers, law enforcement officers, and emergency department personnel in the care and management of people in these crises. The project is part of the Department of Psychiatry, University of Maryland Medical School, and is operated in cooperation with the Maryland Department of Health and Mental Hygiene, Mental Health Administration,

## Workshop Schedule

Upcoming presentations of "Responding to Behavioral Emergencies" for first responders, EMTs, CRTs, and paramedics appear below. The program has been approved for four hours of continuing education credit (local option). There is no registration fee. To register for one of the classes, contact your regional administrator.

### Region I

November 9, 1988 6:30 pm - 10:30 pm  
Garrett County Community College,  
McHenry

March 16, 1989 6:30 pm - 10:30 pm  
Sacred Heart Hospital, Cumberland

### Region II

December 3, 1988 8:30 am - 12:30 pm  
Frederick Memorial Hospital, Frederick

### Region III

October 29, 1988 8:00 am - 12:00 pm  
Essex Community College, Baltimore

January 21, 1989 8:00 am - 12:00 pm  
Essex Community College, Baltimore

February 11, 1989 8:30 am - 12:30 pm  
Howard Community College, Columbia

### Region IV

October 12, 1988 7:00 pm - 9:00 pm  
Denton Fire House, Denton

### Region V

October 15, 1988 9:00 am - 1:00 pm  
Valley Lee Firehouse, Valley Lee

March 4, 1989 9:00 am - 1:00 pm  
Physicians Memorial Hospital, LaPlata

and with MIEMSS. Paul McClelland, MD, director of the Division of Consult Liaison Psychiatry, is the director of the project.

In 1980, Richard Hann, MA, a psychologist with the Baltimore County Police Department and a police officer with more than 20 years of experience, organized classes for law officers to teach them how to respond safely to behavioral emergencies. In 1983, a new component was developed for emergency department personnel. The program designed for prehospital care providers was formalized in February 1988.

Joan Perrault, RN, MPH, who is the associate director of the project, notes that alcohol and other drug intoxication or withdrawal and head injury may also cause people to become disoriented and combative, creating safety concerns for the law officers and medical personnel

who are called to assist them. Many life-threatening emergencies can present as behavioral emergencies due to changes in body chemistry related to conditions such as diabetes, hypoglycemia, and fever.

As reported in the July 1988 issue of *Annals of Emergency Medicine*, the scope of the problem of combative patients in the field has not yet been defined. Only 5 of 15 EMS systems surveyed have a formal protocol to guide the management of these potentially dangerous patients. A Maryland protocol has been drafted for inclusion in the upcoming revision of the state's ALS protocols manual.

Programs for any of the three specific audiences can be scheduled by contacting Joan Perrault in the MIEMSS Field Nursing Program at 301-328-3930.

— Linda Kesselring

## EMS Exercise on Rail Emergencies

The Anne Arundel County Fire Department's EMS Division recently conducted exercises on rail emergencies with the assistance of Amtrak's Baltimore Safety Office. The program held on May 18 and 19 was conducted at the Amtrak rail maintenance facility in Odenton where a four-car train afforded practical, hands-on experience to participants.

The first day began with lectures and practical training on rail operations, safety considerations, rail car construction, and means of egress and access; during the afternoon, Capt. Gary Warren from the Baltimore County Fire Department critiqued the response to the Amtrak-Conrail crash in Chase, MD, in January 1987.

The second day consisted of morning lectures to review the concepts of incident command, incident command as applied to mass casualty situations, and triage. Evacuation drills were conducted during the afternoon.

The value of hands-on experience cannot be overestimated. A classroom session can in no way give you the feel of removing a rail car window or of operating the various mechanical components of the cars.

Although we hope that we will seldom have the opportunity to use the skills learned in this course, we at least feel a greater confidence in our ability to respond to rail emergencies in the future.

Additional contributors to the success of the program include George Smith of MIEMSS; Bobby Brooks of Amtrak's Safety Office; Division Chief Roger C. Simonds and Battalion Chief Nelson Pyle of the Anne Arundel County Fire Department; and the staff of the county's EMS training section.

—Capt. Steven K. Frye  
Division of EMS  
Anne Arundel County  
Fire Department



Members of Anne Arundel County Fire Dept.'s EMS Division remove a rail car window during the hands-on portion of a rail emergencies exercise.



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# Prehospital Treatment of Neonates

The physiologic and anatomic differences between neonates and adults were discussed in an EMS Care '88 workshop led by Cheryl Bowen, RN, who is assistant director of the MIEMSS Field Nursing Program and administrator of the Maryland Regional Neonatal Program. This article begins a series based on that presentation. Also included are questions submitted to Ms. Bowen during the workshop and the answers that she compiled. Other topics related to the prehospital care of neonates will appear in subsequent issues of the Maryland EMS News.

"Neonates must be treated differently than adults. It is important for prehospital care providers to recognize those differences," advised Ms. Bowen, "and to administer care accordingly."

The most obvious differences between neonates and adults are physical size and weight. The average full-term newborn weighs about 7 pounds, one-twentieth the weight of an average adult. Infants weighing less than 5½ pounds (2500 grams) are considered to be low-birth-weight babies. Not all low-birth-weight babies are premature: the length of pregnancy (gestation), not birth weight, determines maturity. Full-term infants are born at 38-42 weeks' gesta-

tion; infants born at 37 weeks or less are premature.

With expanding medical technology, the age of viability of a fetus has been decreasing. Ms. Bowen noted that in some neonatal intensive care units there are infants as immature as 23-24 weeks' gestation. Mortality and morbidity are high among these babies, but some of them survive and go home with their families. The prehospital care provider seeing a newborn this small and immature for the first time may mistake it for an aborted fetus. Ms. Bowen stressed the importance of checking for a heart rate and respiration and, if the baby is alive, providing whatever support is needed.

The definition of a live birth is set by law in the General Health section of the Annotated Code of Maryland, 1982, as "the complete expulsion or extraction of a product of human conception from the mother, regardless of the period of gestation, if, after the expulsion or extraction, it breathes or shows any other evidence of life, such as heart beat, pulsation of the umbilical cord or definite movement of voluntary muscle, whether or not the umbilical cord has been cut or the placenta is attached." The chances of survival for a very immature infant born outside an intensive care setting are not

good; however, to give these babies every possible chance of survival, the prehospital care provider should support these babies and transport them as quickly as possible to a hospital where they can be examined and cared for more thoroughly.

**What age ranges define the groups labeled as neonates, infants, children, and pediatric patients?** The neonatal period is defined as the first 4 weeks or 28 days of life. An infant is usually defined as a child under the age of 1 year; however, some regard infancy as extending through the first 24 months of life. The word "infant" is frequently used interchangeably with "neonate," so it is important to note how terms are defined when using different educational materials, reporting mechanisms, or other references to these age groups. For example, when a neonatal death is reported in Maryland, it is defined as a death occurring to a person under 28 days of age. An infant death is a death occurring to a person under the age of 1 year, which includes the neonatal period. Childhood can be generally defined as the period between infancy and puberty, and different ages are used as cutoffs when describing the pediatric population.