The Maryland State Police Aviation Command

by Martin J. Pociask

The Maryland State Police (MSP) Aviation Command, formally known as the Aviation Division, operates under the Field Operations Bureau. The Aviation Command is the lead law enforcement agency in the State of Maryland, the oldest multi-purpose airborne emergency medical service in the United States, and the nation's first and largest public agency to use helicopters to transfer sick or injured persons in a non-military medevac situation. Aviation Command officers alternately serve on law enforcement and emergency medical response assignments. The organization is an important component of Maryland's statewide emergency medical services system.

An HAI member, the Aviation Command began as many such specialty units do—small. The Command began in 1954 with a single fixed-wing aircraft, a two-seat, radio-equipped Stinson L5. They didn't call it the Aviation Division right away. The name change came later, in 1961. Back then, the mission was strictly limited to airborne law enforcement and search and rescue missions. Today, they do so much more. The change started in March of 1970, when the agency made history by transporting its first patient via helicopter. That auspicious beginning in a single Bell 206B Jet Ranger—assigned to cover the entire state—began the metamorphosis of what many now consider to be the best public service medical evacuation system in the country and, quite possibly, in the world. In October 2004, the Aviation Division was renamed the Aviation Command. The MSP performs all "scene" medical evacuation missions in the state. Inter-facility transfers are performed by private, commercial operators.

The Jet Ranger fleet eventually grew to 10. They have since been replaced with 12 Aerospatial (Eurocopter) Dauphin AS365N3 helicopters, powered by Turbomeca.
cle pursuits, and serious traffic accidents requiring immediate medical attention. The agency is also unusual in that it uses a single airframe model to perform three distinct missions, that of emergency medical services, search and rescue, and law enforcement.

Charged with covering the State of Maryland, from the Eastern Shore of the Chesapeake Bay to the mountainous regions of the Appalachian Highlands, the Command operates from eight fixed-base helicopter section locations, strategically placed throughout the state. These eight helicopter sections are grouped into regions for supervisory purposes. A First Sergeant is responsible for each region.

The Command provides a quick scene-to-hospital response from Baltimore, Frederick, Salisbury, Cumberland, Centreville, Norwood, and Southern Maryland. They also operate out of Andrews Air Force Base to support Washington, D.C. The division is poised to provide rapid patient transport to Maryland Specialty Referral Centers. These centers include the R. Adams Cowley Shock Trauma Center at the University of Maryland, Johns Hopkins Hospital, Union Memorial Hospital, and Johns Hopkins Bayview Medical Center, all in Baltimore. Other state locations include Prince Georges Hospital Center in Cheverly, Peninsula Regional Medical Center in Salisbury, Suburban Hospital in Bethesda, Washington County Hospital in Hagerstown, and Cumberland Memorial Hospital in Cumberland. There are also two Washington, D.C. Specialty Referral Centers—Children's National Medical Center and Washington Hospital Center.

In addition to the eight helicopter sections at the state's disposal, three other helicopters provide law enforcement and medevac assistance to the State of Maryland. The United States Park Police (USPP) maintains three helicopters dubbed Eagle 1, Eagle 2, and Eagle 3. The aircraft are based at the "Eagles Nest," at Anacostia Park in Washington, D.C. The three are a valuable resource and asset to...
Maryland's emergency medical services system.

To date, the MSP has performed over 110,000 Medevac transports. Last year they transported over 5,300 patients. Since their founding, they have transported over 100,000 patients.

The decision to purchase the Aerospatiale AS365N1 Dauphin IIs was based on the Command's multiple mission needs. The aircraft are rated for single-pilot IFR flight, with a three-axis autopilot, two 706 horsepower turbine engines, and are composed of 85 percent carbon fiber. The remainder is a fiberglass, aluminum, and titanium construction called Kevlar®, which allows for transporting a pilot, two paramedics, and two patients, or a total of four passengers. The Dauphin is equipped with a 600 pound lift capacity electric hoist, Global Positioning System (GPS), a 30 million candela-power NightSun® retractable searchlight, and FLIR (forward-looking infrared heat profile camera) to locate missing or wanted persons in complete darkness.

Ground EMS providers and police can request the services of any of the eight sections by calling their dispatcher, who then dials a special "800" number linked directly to Systems Communications (SYSCOM), located at the Maryland State EMS office in Baltimore. Here, the calls are received and prioritized. Once the call has been accepted, SYSCOM gives the duty officer, a Maryland State Police Sergeant, an estimated time of arrival for each section. This can be critical in the event that the nearest location may already be on an assigned mission.

Once the aircraft has arrived, the patient is transferred for transport. This transfer is a quick and orderly process, generally taking less than 10 minutes. Time is a major factor in the transportation of critically ill and injured patients. Medical services have found that the helicopter can help reduce the mortality rate by staying within the "Golden Hour." The "Golden Hour" is that time frame when delay could result in death. The "Golden Hour" marks the period of time that a body, though in a state of shock, can survive by receiving appropriate medical attention after sustaining a serious injury. To save additional time during the flight to the medical centers, the paramedic on board completes a full patient assessment and calls in his patient report to the receiving and waiting doctors and nurses at the point of delivery facility. The dispatcher updates the pilot and medic on their destination and provides timely information as needed.

The crewmembers are in a constant learning mode, attending yearly rotations in the operating room and in the cadaver lab. All required training is paid for by the Maryland State Police and is conducted "on-duty." Minimum requirements for acceptance into the Aviation Command include being a Nationally Registered Paramedic (NREMT), Maryland certified or eligible paramedic, and a minimum of three years of full-time pre-hospital Advanced Life Support (ALS) experience or equivalent, with extensive experience in the management of patients suffering from "difficult" or obstructed airways and critical injuries. Applicants who complete all of the steps in the hiring process are presented to the Police Selection Committee (PSC). The PSC selects only the most qualified candidates to enter the State Police Academy. Each pilot is commercially licensed by the Federal Aviation Administration, and holds an instrument rating with a minimum of 2,000 hours of helicopter flight time. New pilots are sent to American Eurocopter for ground school training on the Dauphin, followed by flight training with an instructor. The Command is in the process of transitioning to an all-civilian force. This has become necessary in order to replace pilot/troopers as they begin to retire.

The MSPAC employs a staff of 145 in the Aviation Command. These include supervisors, civilian and sworn pilots, trooper-medics, aircraft mechanics, and other support personnel. The pilots are a mix of sworn state troopers and civilian personnel, many of whom are retired trooper-pilots. The paramedics are all nationally registered and trained to the highest level of pre-hospital care. The paramedics are all Maryland State Police.

Some officers serve as instructors, while others are taking instruction, learning about such important
aspects of their job as officer survival, accidents, firearms, and driver and vehicle inspection training. Pilots learn how to navigate the helicopter, using maps and GPS. Members may also receive certification in speed measurement using RADAR, VASCAR, and LASER. Other training on how to use the Witsburg C5000 radio control system, the hoist, with its retractable steel cable, and training courses to fulfill continuing education and re-certification requirements are also provided. The crewmembers also receive training to familiarize themselves with the onboard shock trauma equipment. New pilots typically draw flight duty at every state base before receiving a permanent assignment.

Nearly all maintenance work is performed by 20 aviation mechanics, working on site at the Aviation Headquarters, just east of Baltimore, at Martins State Airport. Each hangar is equipped with an automatic fire control system, with four deck cannons fitted with AFFF foam. The cannons are capable of outputting two feet of foam on the hangar floor in less than five minutes. The fire control system can be triggered manually, and can arm and trigger itself from sensors that are mounted inside the hangar.

Operating around the clock, under most weather conditions, the crew is professional and mission focused.

Lives and peoples' safety depend on it. The safety of the crewmembers is also of great concern. For their safety, the MSP has instituted guidelines that define what conditions they are allowed to fly under. These guidelines are referred to as "weather minimums." These minimums call for a ceiling minimum of 600 feet and visibility of at least 2 miles. The night minimum is 800 feet and visibility of at least 3 miles. In addition to these minimums, no lightning or icing conditions can exist. Even "fly-along" guests receive a standard 35-minute safety briefing, on working both inside and outside the aircraft.

Passengers are to remain seat-belted until given permission to unbuckle by the pilot or medic.

An example of the quick response and lifesaving performance of the Maryland State Police, both in state and out of state, can best be illustrated by the following recent story. On Saturday, March 4, at 9:50 p.m., four members of the Helicopter Emergency Aerial Team (HEAT), which included Maryland State troopers, Alexander Kelly and Lawrence Levasseur, both Trooper First Class and paramedics, and LCDR David F. Cooper, USCG, Retired, Civilian Pilot, Maryland State Police, along with Cumberland, Maryland firefighters Lt. Steve Grogg and Capt. Buzz Davis, responded to a nighttime emergency call about a raging fire on top of a chimney stack at the Kammer-Mitchell Plant in northern West Virginia, south of Moundsville.

The troopers were dispatched from Cumberland because their unit had the nearest helicopter with the necessary capabilities. Upon arrival, after their 50-minute flight, they discovered three men who had been huddled together, trapped 1,000 feet up on a platform engulfed by fire, which covered nearly the entire platform. The men were stranded when an explosion damaged the lift that had carried them to the top. One of their colleagues had perished. The men

Photos by Mark M. Odell Governor's Press Office

Paramedics are nationally registered and trained to the highest level of pre-hospital care. All are Maryland State Police.
were gasping for air, suffering from smoke inhalation, as the high and extremely cold winds threatened hypothermia. Flames were closing in on them and setting their clothes on fire. Pilot Cooper went into a hover 60 feet above the burning stack, and using a hoist, the state police crew lowered the rescue basket retrieving the men.

Cooper stated that the experience was unique, "Something I'd never experienced or trained for before." He added, "With over 9,300 helicopter flight hours, I probably had as much preparatory experience for the mission as anyone. A 20-year Coast Guard career gave me the opportunity to perform hundreds of hoists (somewhere around 2,000), practice and live. An exchange program tour with the "Jolly Greens" gave me practice in holding a hover in the face of threats. And I've hovered over burning trees, dropping water from a "Bambi Bucket." However, hovering over a 1,000 foot chimney was unique."

Cooper pointed to newscaster Harry Reasoner's commentary about the brooding introverted helicopter pilot expecting trouble, as a good introduction to the mindset that makes the decision to do something like this—a calculated risk. "If anything goes wrong during a mission like this (power loss, tail rotor failure, etc.), recovery would be extremely difficult to impossible. So you make your decision, say your prayer, and put it out of your mind."

Trooper Alex Kelly added, "First and foremost I'm most appreciative of the people and equipment I operate with everyday. While personnel shortages and the inevitable maintenance issues are universal, the way our crews, mechanics, and support staff contend with adversity is truly inspiring. One of the best compliments I can give to our mechanics is the fact that I NEVER thought about the aircraft during the rescue. I just KNEW that it would work."

The events at Moundsville leading to the catastrophe were beyond anyone's control. But the response from TFC John Proper, the Duty Officer at our SYSCOM, the dispatchers at West Virginia MEDCOM, the EMS and fire responders on the ground at the plant, the commercial MED-EVACS on the scene and Mr. David Cooper, TFC Larry Levasseur, Capt. "Buzz" Davis and Lt. Steve Grogg of the Cumberland Fire Department HEAT team response to the disaster was an example of resources, both professional and volunteer, coming together and taking control to effect a wonderful outcome.

The rescue itself was demanding and could have been intimidating if I had time to reflect on all the possible bad outcomes. But when we did our first recon and realized the limited time available (due to the burn-through of the platform holding the three victims and the welding tanks in the fire beside them), our response escalated to the highest level. From then it was a matter of applying techniques learned in previous rescues and training. There were many hazards associated with this mission, but when weighed against the options for the three victims (none) it was an easy choice to commit to the hoist and do our best to mitigate the hazards. The "victims" themselves were only the victims of circumstance.
They certainly did all they could to contribute to the positive resolution. The whole experience had a "surreal" quality to it. There was so much going on that time seemed to slow and expand. In those milliseconds when the basket was coming up or going down and nothing was immediately required from me, I found myself thinking...is this really happening?"

Cooper agreed, "This mission was a team effort. A lot of maintenance folks at our facility at the Martin State Airport work hard to provide us with a safe aircraft. Our training department provided our trooper-medics with great initial and sufficient recurrent hoist training. And civilian pilot David Delisio was the primary advocate in our procurement of the Coast Guard-type rescue basket that materially helped the hoisting evolution. Before we even began our flight, Trooper First Class Larry Levasseur, with a few phone calls, prepared us for all contingencies. TFC Alex Kelly came in from a family function to assist, and Captain Buzz Davis and Lieutenant Steve Grogg, from the Cumberland Fire Department's HEAT Team, volunteered to come along in case we needed trained personnel to be lowered to package injured workers for hoisting. When we arrived on the scene, it was a helicopter pilot's worst nightmare: several 1,000-foot smokestacks and numerous cooling towers were spewing smoke and water vapor, with high tension wires and their support towers running in all directions, including across the Ohio River, from several generator buildings."

Cooper elaborated, "I was the most apprehensive during the entire evolution when I was landing and taking off from the landing site they designated for our pre-rescue briefing, amongst those obstructions. The actual hoist had a couple of things in our favor. A fairly steady 20-knot northwest wind kept most of the smoke from the numerous fires on the construction cap clear for our hover. Also, our primary obstruction, a small construction crane tower, provided me with a decent reference for my hover. With TFC's Levasseur and Kelly working together, and using the new rescue basket, the hoisting went quickly and smoothly. The cool wind meant that engine power would not be an issue. We were able to deliver the three survivors to several MEDEVAC helicopters at the Moundsville airport within 15 minutes of our approach to the stack." Cooper added, "A reminder of what we had been through during our flight back to Cumberland was the smell of burning fiberglass, etc., which permeated the interior of the helicopter."

The event can best be summed up with words of gratitude from West Virginia State Police Sgt. Tom Wood, "Thank God we have a neighbor like the Maryland State Police over there."

Over the years, the Maryland State Aviation Command has received numerous awards for the skill of their medics and pilots ensuring mission success. The citizens of Maryland, those passing through requiring their services, and some out-of-state agencies requesting assistance when their local resources have been exhausted or were unavailable, would agree that the Command justly deserves them.

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