

# MEDEVACS ARE NOT ROUTINE

By Keith Johnson, ALEA Safety Program Manager

***Although Airborne medical flight operations are not routine missions for most law enforcement aviation units, and those who are involved are invariably engaged in the most accident-prone aspect of medevac operations – helicopter accident-scene extractions.***

In a special investigation report adopted on January 25, 2006, the National Transportation Safety Board (NTSB) called for the FAA to impose new requirements on all EMS flights, which referred to all air medical service flights, including positioning flights.

The NTSB report addressed 55 EMS accidents between January 2002 and January 2005, noting that the rate of accidents is up significantly in recent years. Seven fatal EMS accidents (five helicopters and two fixed-wing aircraft) were highlighted to illustrate the issues that most concerned the NTSB – nighttime flights, adverse weather conditions, inhospitable terrain, flight crew fatigue, pressures to attempt missions despite adverse conditions, the absence of aviation-knowledgeable flight dispatchers and lack of flight following.

The NTSB acknowledged ongoing FAA efforts to improve EMS flight safety, including its publication of Advisory Circular 135-14A, “Emergency Medical Services/Helicopter (EMS/H),” and other FAA notices that provide temporary guidance to aviation safety inspectors, but said that further action was justified. The NTSB said its recommendations were “not intended to burden operators with undue requirements or to handicap this vital function in any way; rather, the purpose of the report is to identify and recommend operational strategies and technologies that will help to ensure that these vital EMS flights arrive safely and continue to provide valuable service to the public.”

The NTSB also concluded that the safety of EMS operations would be improved if EMS flights were operated under Part 135 regulations during all flights with medical personnel on board.

The NTSB’s investigation also examined the decision-making process of EMS operators when evaluating risks, such as inclement weather, darkness, lack of visual cues along a possible flight route, unfamiliar landing sites, pilot training and experience and pressures to take the flight. The NTSB said that safely operating in this environment calls for systematic evaluation of risks; however, it found that none of the operators involved in the highlighted accidents had an established aviation risk evaluation program at the time of the accident. Therefore, the NTSB recommended that the FAA require EMS operators to develop and implement flight risk evaluation program.

It is important to note that while only relatively few law enforcement aviation programs conduct EMS operations on a full-time basis, there are many similarities between EMS and more traditional law enforcement missions. This includes mission urgency, adverse weather and low level operations over densely populated and rural areas, as well as the need to land in unfamiliar and unimproved landing zones. Additionally, there is a higher percentage of pilots with limited experience conducting EMS. EMS operations are high-risk even for experienced pilots. Therefore, it is important that law enforcement managers set clear standards for conducting EMS operations that are similar to more traditional but high-risk law enforcement missions.

In conjunction with the lack of risk evaluation programs, the NTSB’s investigation revealed that many EMS operators lack a consistent, comprehensive flight dispatch procedure to assist pilots in determining the safety issues of the mission. EMS hospital dispatchers have no aviation expertise and are not aware of the flight requirements, particularly for night flights and flights into adverse conditions. Therefore, the NTSB asked the FAA to require EMS to use formalized dispatch and flight-following procedures that include a dispatcher with aviation experience, up-to-date weather information and experience with flight risk assessment decisions. These recommendations are equally applicable to law enforcement supervisors who have the responsibility for making similar decisions, including “go, no go” standards.

A synopsis of the report and recommendations can be found on the NTSB’s website, [www.ntsb.gov](http://www.ntsb.gov).

The John Hopkins University’s Bloomberg School of Public Health conducted a study of EMS accidents between January 1, 1983 and April 30, 2005 from data taken from the NTSB’s accident

database. The study reported that there were 182 helicopter accidents during the 22-year study period, an average of 8.1 per year.

From 1998 through April 2005, there were 88 helicopter EMS accidents, an average of 12 per year, compared with 8.6 per year from 1983 to 1989 and 4.3 from 1990 through 1997. Seventy-one crashes (39 percent) were fatal. One hundred eighty-four occupants died, a rate of 1,011 per 1,000 accidents, or one fatality per accident. Twenty of 44 patients (45 percent) and 164 of 513 crew members (32 percent) died. These are sobering statistics. Law enforcement officers should take careful note when making risk assessments of similar missions that they routinely fly.

The contribution of darkness and bad weather that affects EMS flights and law enforcement accidents is well documented. The John Hopkins study noted that when a helicopter accident occurs, darkness more than triples the risk of fatalities, and adverse weather increases the risk eight-fold. Both threats underscore the importance of clear standards, good risk management and decision-making when determining the necessity for such flights.

The study also documented a three-fold increase in the odds of a crash being fatal when a pilot cannot see well enough to anticipate a crash and guide the helicopter to a less severe collision. This points the benefits that can be provided by night vision goggles (NVGs). The introduction of NVG technology also necessitates the modification of cockpit equipment and professional training. While there is no comprehensive empirical data that NVG technology reduces EMS accidents, there have been no reports of EMS accidents due to controlled flight into terrain while using night vision goggles.

The ability to reduce or eliminate accidents relies largely on clear, comprehensive standards for safety, operations, training and effective organization management and leadership. Airborne officers must adopt and live by safety principles that reduce or eliminate risks, which include:

- Safety has the highest priority and the mission has a lower priority.
- Always operate in the safest manner possible.
- Never take unnecessary risks.
- Familiarity and prolonged exposure without a mishap leads to a loss of appreciation of risk.
- Leaders must hold people accountable for their actions. What is rewarded today will get done tomorrow. Ultimately, it's people that make the difference. They always have been, and always will be, the key to success or failure. The choice is ours. Make Safety First!

Author's Note: The information contained in this article was compiled from the NTSB Accident Database, Helicopter Association International website, FAA website, ALEA website, and a Johns Hopkins University Study.