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TRIAL

AAJ
search

Go

[Search Tips](#)
[Printable Version](#)

[Table of Contents](#) | [Features](#) | [News & Trends](#) | [Departments](#) | [Classifieds](#)

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When rescue is too risky

Hazardous medevac flights too often endanger the lives they were dispatched to save. Crashes usually have more than one cause, and a thorough investigation will often reveal more than one responsible party.

[Justin T. Green](#)

On the night of September 9, 2002, an emergency medical services (EMS) helicopter went out of control and crashed into a South Dakota bean field. Investigators determined that pilot error caused the crash because the pilot's deficiencies—especially in night flying—were well documented.¹ In fact, his employer (a leading EMS company) previously grounded him from night missions because he was not capable of flying safely at night.

So why was the pilot flying on the night of the crash? After the employer's safety manager identified the pilot's night-flight problems and the base manager wisely restricted the pilot from flying night missions, the employer's chief pilot overturned the decision and cleared the pilot to fly at night. The pilot crashed the helicopter on his fourth night mission.

The company's decision to clear the pilot for night flight after it had identified his serious deficiencies is typical of endemic safety problems in the EMS industry. Despite the company's denial, it appears that the decision was made for business purposes—so the company could schedule more night missions, putting profits over safety.

The EMS industry—which is now largely populated by private, for-profit companies—operates on narrow profit margins and has not invested properly in safety. By failing to hire trained and experienced pilots, who command high salaries, or equip and maintain aircraft, the industry has not served its aircrews and passengers well.

EMS aviation is some of the most dangerous nonmilitary flying in the United States. According to the U.S. Bureau of Labor Statistics, "aircraft pilot" is among the most dangerous of all professions,² but EMS aviation is in its own class—with a crash rate closer to that of combat flying than commercial aviation.

In the past five years, more than 10 percent of air ambulance helicopters crashed, a total of 84 accidents resulting in 60 deaths.³ If patients knew of these lethal statistics, many probably would choose not to fly in EMS planes and helicopters.

The National Transportation Safety Board (NTSB)—the independent agency of the federal government that investigates civil aviation and other transportation accidents in the United States—attributes many EMS crashes to pilot error. But a pilot is only as good as his or her aircraft, which must be properly equipped and maintained. Aircraft manufacturers, maintenance companies, and operators must understand the unique risks involved in emergency medical aviation and work to avoid them. To date, the industry has failed to live up to its responsibilities.

Victims of EMS accidents often have difficulty obtaining justice because workers' compensation usually provides immunity to the operating company against claims by crew members and their families. However, aviation disasters usually have more than one cause, and trial attorneys who zealously investigate a crash often find other potential defendants.

Unique hazards

Many risk factors contribute to high EMS accident rates.

The flight environment. Emergency flights are often made into ad hoc landing zones and in hazardous conditions, including bad weather, high altitude, and rough terrain. Night flying and flying in "instrument meteorological

conditions” (IMC)—where the pilot cannot see enough visual cues outside the aircraft to fly and must rely on instruments—are common on EMS missions. These conditions greatly increase accident rates. Poor visibility induces pilot vertigo and increases the chance of crashing.

Over the last six years, 13 percent of fatal EMS helicopter accidents involved pilots inadvertently flying into weather conditions that required them to rely on their instruments to navigate.⁴ Flying in bad weather, regardless of the time of day, exposes a pilot to all the dangers of night flying and introduces other hazards, such as icing, snow, severe winds, and lightning.⁵ Fatal accident rates increase by nearly two-thirds at night and triple in weather conditions requiring instrument flying.⁶

The pilot’s training, judgment, and experience. A general pilot shortage has prompted some EMS operators to hire inexperienced pilots and send them on missions well beyond their capabilities. For example, many EMS pilots are not instrument-rated (certified to fly when weather conditions restrict visibility, using instruments only) but are required to fly in poor weather and at night,⁷ when they are more likely to encounter serious flight hazards and have to rely on instruments.

Some EMS pilots may be influenced by a hero mentality: They may believe that completing a flight is critical to the survival of their passengers and continue missions that they should cancel. Even experienced EMS pilots can succumb to this thinking and fail to weigh the risk of delayed medical treatment against the risks of continuing into worsening weather or attempting dangerous landings.⁸

The aircraft’s suitability, condition, and outfitting. Medical emergency aircraft must be capable of handling hazardous conditions, such as high-altitude flight and landing at dangerous sites. EMS aircraft should be outfitted and certified for instrument flight and equipped with modern devices—such as night-vision systems and power-line-detection systems—that mitigate the limited visibility of weather and night flying in bad weather and at night.

Hitting power lines, telephone wires, and other objects has been the leading operational cause of fatal EMS helicopter accidents in the last decade.⁹ Power lines and wires are difficult to see in flight; detection systems provide audio and visual warnings to the pilot when an aircraft is flown too close to them.¹⁰

The EMS industry has dropped the ball on safety. While limited visibility and weather are recognized as leading factors in fatal accidents, the Association of Air Medical Services has made no recommendation to its 300 members on the use of night-vision goggles or a requirement that EMS pilots be instrument-rated.¹¹

In addition, the helicopter air ambulance service industry increasingly uses single-engine aircraft, which increases the risk that an engine malfunction will result in a catastrophic accident.¹² And most of the helicopters used in EMS flights are not equipped with available safety mechanisms such as power-line warning systems.

Economic pressures. In the nonprofit, hospital-based model of a decade ago, medical centers controlled air medical services, including the aircraft and flight crew.¹³ But the EMS industry now predominantly consists of for-profit companies with large capital investments, including aircraft and equipment purchases or leases, repair and maintenance costs, medical and aviation personnel staffing, and crew training. If economic pressures force cost-cutting measures, safety often suffers.

EMS operators may buy or lease cheap aircraft that have fewer safety features than more expensive models do and fail to purchase necessary, but costly, safety devices. Aircraft maintenance is also expensive, and a plane or helicopter grounded for maintenance is not earning money for the company. This creates tremendous financial pressure to ignore or put off necessary aircraft maintenance. Also, many companies refuse to pay for comprehensive safety and training programs. “Multiple safety layers don’t exist,” said one former EMS pilot.¹⁴

Financial incentives also can result in risky flights. Often, operating companies are not paid unless they complete missions, and many send their aircraft on missions where there is insufficient medical need for air transport. A January 2005 study, for example, found that of 37,500 patients transported by helicopter, two-thirds had only minor injuries. One of four had injuries too minor to require hospitalization.¹⁵

Lack of government oversight. There are 350,000 helicopter and more than 100,000 fixed-wing EMS flights in the United States each year,¹⁶ which means an EMS aircraft takes off on a mission every 90 seconds on average. Most aviation in the United States is highly regulated, but air-medical transport is an exception.

The Federal Aviation Administration (FAA) has not sufficiently addressed the safety problems in EMS aviation. EMS aircraft operate under different flight rules depending on the phase of flight, and EMS operating companies set their own standards for pilot qualifications and decide what safety equipment will be installed on their aircraft.

Currently, EMS flights may begin—without passengers—under Federal Aviation Regulations (FAR) part 91 rules, which allow flight even if weather conditions are not good enough for passenger-carrying commercial operations (governed by FAR part 135 rules).¹⁷ Once a patient is collected, the mission becomes a part 135 flight, so if the weather has not improved at the evacuation scene, pilots are forced to choose between flying back without the

patient or breaking FAA regulations and completing the mission.

The practice of flying out in bad weather and hoping for the best has been identified as an ongoing problem by both the FAA and the NTSB, which proposes that medical flights be considered FAR part 135 flights from the time they are dispatched.

The FAA has not promulgated necessary regulations, but has issued only recommendations to the industry on EMS flight crew and management training.¹⁸ These were prepared with substantial industry input and influence, and the industry has resisted new recommendations in the form of safety requirements that would reduce its profit margins. The FAA currently is working on additional recommendations in the form of nonmandatory advisory circulars for the industry.¹⁹

The NTSB has recognized the dangers of EMS aviation and is considering recommendations—of which the FAA and EMS industry should take note—about the following:

- night-vision goggles and training in their use
- ground-collision warning devices
- flight-data and cockpit-voice recorders;
- more standard rules on training, night operations, and limited-visibility conditions
- inadequate training of pilots, aging equipment, and vague rules for flights in limited-visibility conditions.

Until the industry and government take the necessary steps to safeguard EMS crews and passengers, plaintiffs and their attorneys must use the civil justice system to deter the wrongful conduct that takes so many lives.

Complex claims

EMS aviation cases present difficult challenges. Most crashes have more than one cause and more than one responsible party. Multiple plaintiffs and third-party actions can make cases even more complicated.

A perfect example of this complexity is reported in *Walker v. Messerschmitt Bolkow Blohm GmbH*.²⁰ In that case, a BO-105 helicopter crashed on an EMS training flight, killing three crew members. The helicopter was seen flying over one of the airport's runways when it suddenly banked hard to the right, pitched downward, and crashed.

Representatives of the decedents' estates brought a claim against the manufacturer. The owner, North Central Texas Services, and the operator, Lone Star Helicopters, intervened to recover for the loss of the aircraft, and the manufacturer counterclaimed, seeking indemnity or contribution. Not surprisingly, the manufacturer claimed that pilot error caused the accident.

The manufacturer ultimately settled with the plaintiffs, and the case proceeded to trial to determine the relative responsibility of the manufacturer, the owner, and the operator. Lone Star Helicopters and North Central Texas Services intervened to recover for the total loss of the helicopter. The manufacturer filed a third-party complaint against the pilot. The manufacturer also counterclaimed against Lone Star Helicopters and North Central Texas Services, seeking indemnity or contribution on grounds that the pilot's negligence caused the accident. The jury found that the helicopter was defective and that the manufacturer was negligent in designing and manufacturing it. It also found the pilot negligent.

In this case—typical of one with more than one cause and more than one responsible party—the plaintiffs, who probably could not sue the operator, were successful with their claims against the manufacturer. Ultimately, both the operator and manufacturer were held liable.

Not all victims in EMS crashes have the same legal options, and you need to approach cases differently depending on whom you represent. The issues involved in a passenger's case are unlike those involved in a crew case.

Passenger cases. The family of a passenger killed in an EMS accident has a uniquely strong case. The passenger is a victim who can't have contributed to the crash, and the law favors his or her family's claim. Even tort "reformers" recognize the special status of these passengers. The leading piece of aviation law tort "reform," the General Aviation Revitalization Act of 1994, exempts suits "if the person for whose injury or death the claim is being made is a passenger for purposes of receiving treatment for a medical or other emergency."²¹

Most important, workers' compensation law almost never bars passengers from suing potential defendants. A passenger can sue the pilot and the pilot's employer, while EMS pilots and crew usually cannot sue their employer.

Crew cases. Operating companies that employ EMS flight crews and their families are protected by workers' compensation laws in most jurisdictions. The operator is responsible for aircraft selection and equipment, pilot

hiring and training, and mission assignment, and is legally responsible for the errors of its pilots. Yet, even when the operator is clearly at fault, it often enjoys immunity from employee suits.

The voluntary settlement insurance that many operators carry is a further complication. This insurance provides coverage for settlements that the operator can offer to the families of its employees killed in a crash. This is a terrific benefit in pure pilot-error cases, where the victim's family may have no other options, but it can complicate the case if the surviving family intends to bring claims against the aircraft manufacturer or other defendants.

These settlements come with strings attached. The operator will ask that the victim's family sign releases indemnifying it if it is later sued in a third-party action brought by a defendant (such as the aircraft manufacturer), that has been sued by the family. The releases may even require the settling families to pay for the operator's legal defense. If your clients are asked to sign such a release, scrutinize the language and negotiate the terms so that family members do not sign away their rights.

Proving the case

Even before discovery, it is relatively easy to determine safety problems concerning the pilot, operating company, and aircraft. The NTSB maintains comprehensive and searchable databases of accidents.²² The FAA holds a vast amount of information regarding service difficulties of the aircraft, maintenance performed, pilot qualifications, and other issues. Filing a Freedom of Information Act (FOIA) request with the FAA²³ produces this information relatively quickly, and much of it is now posted on the Internet.

While it's easy to blame the pilot for a crash, you should be sure to pursue all factors contributing to it. Often, a full investigation will show that an accident attributed to pilot error actually was the result of a mechanical failure. In discovery and at trial, focus on the following:

The manufacturer's marketing and sales documents, and correspondence between the manufacturer and the EMS operator. These documents may provide a basis for misrepresentation and warranty claims. EMS operators often purchase or lease aircraft for use in a particular flight environment, such as at high altitude. Documents about the suitability of the aircraft for these environments may be crucial evidence to establish the manufacturer's liability.

Evidence of the hospital's involvement. If the crash occurred at a hospital landing zone, problems with the zone may make the hospital liable to the victims. For example, the hospital may be liable for negligent selection of the EMS operator.²⁴ In certain circumstances, the hospital should be liable for requesting EMS air transportation when the patient's condition did not require it.

The EMS operator's financial records. These will tell you how much money the operator spends on safety, including flight training. They will also reveal how the operator makes money, which may speak to its motives for scheduling a mission.

The EMS operator's flight mission records. These will show why the operator sends its crews on missions and may demonstrate a history of pushing missions that were not necessary based on the passenger's medical condition. These records should also provide information regarding the crew's flight experience.

The operator's training records. These will reveal whether the operator has complied with FAA recommendations and employed reasonably safe practices. Test whether the training reported in the records ever took place by comparing it with the number of hours flown on the training flights. You may find that too much training was purportedly accomplished in too little flight time.

Also look for whether the operator overused simulators to complete necessary training. While simulators are important training tools, there is no substitute for actual flight time. Operators tend to rely too much on simulators to save flight costs.

Correspondence between the operator and the FAA. As government oversight of the industry increases, communications may reveal that an operator's shortcomings have come to the FAA's attention. Independently seek from the FAA, via FOIA, all documents relating to the operator.

Aircraft records. These will reveal whether the aircraft was properly equipped for its missions. Was it instrument-certified? Did it have power-line-avoidance equipment? Was it properly equipped for night flying? The records will also show whether the aircraft received appropriate maintenance. You may find a history of a relevant defect that the operator, maintainer, or manufacturer failed to correct.

The operator's accident/incident history. Many operators have terrible safety records. Look beyond major crashes, because relatively minor incidents or difficulties may prove to be important evidence.

The pilot's logbooks and training records. Here you'll find a pilot's qualifications, flight time, training, and experience, which will show whether he or she should have been flying the aircraft at all.

A plaintiff lawyer must approach an EMS crash case from every angle. When a lawsuit determines all the causes of an EMS disaster and holds liable those who are responsible, it sends a strong message to the industry.

Justin T. Green, a former Marine Corps helicopter pilot, is a partner at Kreindler & Kreindler in New York. He thanks Christine Negroni, his firm's lead investigator, for her valuable assistance with this article.

[back to top](#)

Notes

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7. See, e.g., Levin, *supra* note 1.
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10. Safe Flight Instrument Corp., *Powerline Detection System*, at www.safeflight.com (select "Products," then "Powerline Detector") (last visited Dec. 22, 2005).
11. See generally Levin & Davis, *supra* note 3.
12. See Rigsby, *supra* note 4.
13. Telephone Interview with Dawn Mancuso, Executive Director, Association of Air Medical Services (Sept. 23, 2005).
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15. Bryan E. Bledsoe et al., *Helicopter Transport for Trauma Patients: A Meta Analysis*, 9 PREHOSPITAL EMERGENCY CARE (forthcoming Jan.-Mar. 2006).
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21. Pub. L. No. 103-298, 108 Stat.1552 (1994), as amended by Pub. L. No. 105-102, §3(e), 111 Stat. 2215 (1997) (codified at 49 U.S.C. §40101 note).
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