



EMS helicopter crashes raise complex liability issues

Fatal crashes of EMS helicopters are not uncommon. In fact, when compared to other aviation, they're off the chart

BY MIKE DANKO

Emergency Medical Services helicopters don't get paid for being on call. They earn money only when transporting patients. But, when they do transport a patient, they are paid handsomely – up to \$20,000 per trip.

This simple business model has worked out well for the industry. In fact, the number of EMS helicopters crisscrossing our skies has quadrupled since 2002. With nearly a half million flights per year, the air ambulance business is now a \$2.5 billion industry. Not too shabby.

But the business model that has been a boon for helicopter operators has been a bane for flight safety. Since an operator doesn't get paid unless the helicopter carries a patient, there's an incentive to fly the mission regardless of how hazardous the conditions. And because operators are paid the same rate no matter what equipment they use, operators tend to use only older helicopters, and to run them as inexpensively and as ill-equipped as possible.

Not surprisingly, the EMS helicopter fatal accident rate is, when compared to other forms of commercial aviation, off the charts. In fact, it's off the charts when

compared to just about anything. With a crash rate that is 6000 times that of commercial airliners, flying an EMS helicopter is the second most dangerous job in America. Only working on a fishing boat is riskier.

Industry response

The industry, for its part, acknowledges that crashes are always regrettable. But it argues that it's critical to deliver trauma victims to a hospital within the first "golden hour" after an injury. A helicopter best serves that need. Though the accident rate is high, in the end, more lives are saved by EMS helicopters than



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are lost. At least that's how the industry's argument goes. But the industry's math doesn't pencil out. Here's why.

- **The need for speed.** Helicopters are fast. But when it comes to getting the patient to a hospital, a ground ambulance is often faster. At least in urban areas, ground ambulances are more widely distributed than EMS helicopters. That means a ground ambulance is more likely to be stationed closer to the trauma victim. A well-positioned ground ambulance can often get the trauma victim to a nearby hospital quicker than a helicopter crew can plan its flight, start up, get to the site, land, load, and then fly to a hospital served by a helipad. By and large, a helicopter's speed advantage is limited to rural environments, where ground ambulances are fewer and farther between. The helicopter's speed advantage is overrated.

- **The myth of the "golden hour."** Of course, any delay in medical intervention should be avoided. But there is nothing "golden" about the first hour after the accident. At least not for the patient. That's because survival rates do not drop off precipitously 60 minutes after an injury. In fact, the peer-reviewed studies have been unable to establish that there is *any* "magical time" for saving trauma victims. Sure, getting the patient to the hospital quickly is generally better. But the "golden hour" argument is marketing hype.

- **"Life flights" that aren't.** A highway patrolman arrives on the scene of an accident. It looks bad. Not wanting to waste any time, he calls for a helicopter. When it arrives, the crew determines that the injury is limited to lacerations and a broken leg. Serious, but hardly life-threatening. But if the crew doesn't bring back the patient, there will be no billing for the flight. Seldom in such cases will the helicopter leave the scene empty.

- **Pricey shuttles.** Many EMS helicopter flights are inter-hospital transfers merely shuttling patients between hospitals. Operators love these profitable gigs. One calls the transfer of patients "golden

trout," and encourages pilots to "hook" every one they can, regardless of how bad the weather conditions. No matter that, since the patient is already at a hospital, these transfers seldom classify as "emergencies."

This is not to say that EMS helicopters never make a difference for trauma victims. But studies suggest that, even in cases involving serious trauma, helicopter transport improves the patient's outcome less than five percent of the time. That means that 95 percent of the time the helicopter exposes the critically injured patient to an unnecessary risk.

Why they crash

EMS helicopters crash for a wide array of reasons. Some of the most common:

- **Weather.** Accurate weather information is essential to flight safety. Inadvertent flight into clouds or fog can be lethal, as it can cause the pilot to become disoriented and lose control of the aircraft. Thunderstorms can bring a helicopter down in seconds. While accurate weather information is available for airport destinations, it is a rare commodity for the off-airport locations that EMS helicopters typically service. The lack of accurate weather information, coupled with economic pressure to complete the mission, takes a toll.

- **Unprepared landing sites.** Helipads are designed so that there are no wires, trees or other obstacles for the helicopter to hit during landing or takeoff. The ground is firm and level so that the helicopter won't roll over when it touches down. But when responding to a call, EMS helicopters accept landing sites that have been neither surveyed for hazards nor otherwise prepared for helicopter traffic.

- **Terrain.** EMS helicopters crash into mountains, ridges, and hillsides with some regularity. Most of those accidents happen when it's dark, foggy, or cloudy. "Controlled flight into terrain" is a leading cause of EMS helicopter crashes.

- **Mechanical failure.** Rotor blades come off, engines fail, and pilots lose control of EMS helicopters due to defective parts or maintenance.

- **Crew fatigue.** Almost half of all EMS helicopter crashes take place on the "back side of the clock," meaning the eight hours between 10 p.m. and 6 a.m. This is the most dangerous time for EMS helicopter operations. Fatigue and darkness are a deadly mix.

Handling the EMS helicopter crash case

So what's it like to undertake an EMS crash case? As one might expect, some specialized law applies. Some laws are the product of so-called tort reform and are not helpful for helicopter crash victims. For example, helicopter manufacturers enjoy the benefit of an aviation-specific federal statute of repose. But more on the legal issues later. Before getting to those, the plaintiff's lawyer needs to determine the cause of the crash. And that's usually more of a challenge than determining the cause of other accidents, including a typical airplane accident.

The challenge starts with the lack of clues with which to work. Helicopters don't have cockpit voice recorders, so there's no way for the investigator to confirm what was happening in the cockpit. Nor do they have flight data recorders that would tell us the position of the aircraft's flight controls in the moments before the crash. EMS helicopters tend to fly off the beaten path and out of contact with air traffic control, so there are seldom tapes of ATC communications. And because they often fly below radar coverage, there may be no radar tracking data from which to reconstruct the helicopter's flight path.

With those clues unavailable, the wreckage itself is often the primary source of evidence. But given the way helicopters are designed and built, there is usually little left of the helicopter after it impacts the ground. Parts that do survive impact are frequently consumed by



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the post-impact fire. Especially vulnerable are the many helicopter components made of composite materials. The wreckage of what was once a rather large helicopter will frequently find its home in a surprisingly small evidence locker.

The lawyer for the victim of an airplane crash works hard to find a component part that broke before the aircraft impacted the ground. Find that part, and you may have uncovered the cause of the crash. But a *helicopter* has so many high-energy rotating components that, when one breaks, it will push, pull, twist, collide with and ultimately break a host of other parts well before the aircraft hits the ground. The question may be which of the many parts that failed before impact failed *first*. That can be a real puzzle.

The National Transportation Safety Board investigates every aviation accident, including EMS crashes. But the Board investigators cannot be counted on to help piece together the puzzle. Many times, especially in helicopter cases, the NTSB doesn't publish its report until after the statute of limitations has run and, in some cases, after verdict is entered. And because the NTSB allows representatives of the manufacturers, but not of the victims, to participate in the investigation, the NTSB's final report – when it finally is published – is usually biased in favor of the industry constituents.

Foreign spin

When the victim's lawyer determines that the crash was caused by a failure of one of the helicopter's component parts, he must next determine whether the part failed due to poor maintenance, defective design, or both. That often means taking discovery against the manufacturer.

That can get interesting. Surprisingly, the most popular helicopter in America is French. The engineers to be deposed are, for the most part, in France. Documents may need to be translated. Even the stuff that does not require translation, like helicopter performance charts, is maddeningly different. In fact, it seems

that everything about a French helicopter is, well, French. (Think Peugeot. Or Citroen. Or, if your memory is good enough, LeCar.)

As an example, at some point the French decided that their rotor blades would turn in a direction opposite from that of the Americans' design. There is no known advantage to backwards-turning rotor blades. There is no disadvantage, either. But the different spin significantly affects the piloting inputs needed to control the aircraft. In certain cases, the fact that the parts spin backwards can thoroughly confound the accident reconstruction process.

If a foreign manufacturer is involved – French or otherwise – then the victim's lawyer may need to brush up on the provisions of the Hague Convention dealing with service of process in foreign countries. And if the foreign manufacturer is going to be a defendant, and not merely a witness, then the lawyer may also need to be familiar with the Foreign Sovereign Immunities Act. The Act comes into play whenever the defendant is an "agency or instrumentality" of a foreign government. A manufacturer can qualify as an "agency or instrumentality" when, for example, a majority of its shares is held by a foreign government. When the manufacturer is entitled to the protections of the Foreign Sovereign Immunities Act then, among other things, there can be no default judgment, no jury trial, and no punitive damages.

Piloting issues

What if the helicopter is made in the USA? If the case involves piloting issues, it may still seem like your experts all speak a foreign language. Imagine what you might make of an expert's step-by-step explanation of how to ride a bicycle if you've never pedaled one yourself. It would sound hopelessly complex. That's because a bicycle wants to fall over, all the time. Keeping it upright requires a series of subtle inputs and counter-inputs that are almost impossible to describe verbally.

Like a bicycle, a helicopter is inherently unstable. There are three types of controls and the pilot must simultaneously and in concert move both his hands and his feet to keep the helicopter in the air. Because of that, the appropriate piloting technique is sometimes better experienced than explained. So, if the case involves piloting issues, a few hours of helicopter lessons in the relevant phase of flight – such as hovering flight, autorotation, or transitions into and out of "effective translational lift" – can pay the victim's lawyer big dividends.

Patient or crew

Some air ambulances crash while rushing to a hospital with a patient on board. But many crash with just the crew – which is typically comprised of a pilot, a paramedic, and a flight nurse. Sometimes the helicopter was on its way to an emergency. But a surprising number crash during "repositioning" flights – flights that are neither headed to, nor returning from, a patient pickup. (Needless to say, this fact leaves safety analysts scratching their heads.)

The resulting *crew cases* can be legally challenging. Workers compensation laws apply in aviation cases just as they do in cases arising from ground-bound endeavors. Crew members are thus barred from suing their employers for any injury or death caused by pilot error. (Accidents involving bad weather, controlled flight into terrain, and fatigue-related accidents may all fall under this category.) Similarly, crew members will be barred from suing for accidents caused by their employer's shoddy maintenance. And most EMS operators do in fact perform at least routine maintenance in-house.

Of course, if the crash was caused by a defect in the helicopter, the crew case may proceed against the helicopter manufacturer. But there are legal challenges to be overcome there as well. A federal statute of repose known as the General Aviation Revitalization Act, or GARA, bars claims against the manufacturer if



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the helicopter is older than 18 years. And beneath their shiny paint, most of the helicopters now in service date back to the 1970s. (In case you're wondering, GARA protects not just US helicopter manufacturers, but foreign helicopter manufacturers too.)

There are a few exceptions to the 18-year bar. For example, GARA does not protect the manufacturer of a replacement part that caused the accident, if that part was less than 18 years old, regardless of the helicopter's date of manufacture. Nor does it apply if plaintiff can prove that the helicopter manufacturer failed to disclose important information to the FAA during the aircraft's certification process. But despite these exceptions, if the helicopter is older than 18 years, the deck is stacked against the crew case.

Patient cases are less nettlesome.

There is, of course, no workers compensation bar with which to contend. And unlike a crew member, a patient may sue the aviation manufacturer regardless of the helicopter's age, since GARA contains a specific exception for those riding in an air ambulance as a patient.

One thorny issue is the potential application of MICRA to the patient case. In *Cannister v. Emergency Ambulance Service*, a case handed down in 2008, a

California court of appeal held that a ground-bound ambulance company was properly considered a "health care provider." Therefore, MICRA, along with its \$250,000 cap on non-economic damages, applied to a case involving negligent operation of the ambulance. Whether that ruling will extend to EMS helicopters may depend on the particular facts of the case. (In *Cannister*, the ambulance driver was a licensed EMT; most EMS helicopter pilots are not.)

Finally, federal law does not require operators to carry any minimum liability insurance to satisfy the claims of patients or their families. Though there are some large EMS helicopter operators who are adequately insured, there are lots of "mom-and-pop" operators who are not and carry coverage as little as \$50,000 per passenger.

Conclusion

With corporate names like "Angel Flight," "Mercy Flight," and "Life Flight," the EMS helicopter companies paint themselves as indispensable life-savers. But as the industry continues to grow, so have the number of fatal accidents. Neither the National Transportation Safety Board nor the FAA has been able to stem the tide. In fact, during the National

Transportation Safety Board's recent hearings into the rising EMS death toll, the Board's chair, Robert Sumwalt, conceded that the EMS helicopter accident rate is unacceptably high and that whatever is being done to fix it is simply not working.

The NTSB is now calling for all EMS helicopter crews to be better trained and for the helicopters to be better equipped. High on the NTSB's list of recommended safety equipment are night vision goggles, autopilots, and terrain awareness and warning systems. The NTSB, however, has no regulatory power and cannot force change. It leaves that up to the industry. Of course, change costs money. Given the economics involved, don't expect the industry to take corrective action voluntarily.



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