



**Healthcare
Risk Management™**

MEDICAL HELICOPTER SERVICES:
STRATEGIES TO REDUCE RISK AND
LIABILITY

SPECIAL EDITION

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Medical Helicopter Services: Strategies to Reduce Risk and Liability

Special Edition

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Recent crashes highlight risks that come with medical helicopters

Providers at great liability risk, must take precautions

A medical helicopter can be invaluable when desperately ill or injured patients need to be transported quickly from remote locations, but risk managers may underestimate the liabilities that come with those benefits. Even a well-run air ambulance program carries significant risks simply by the nature of the activity — flying a helicopter in less-than-ideal situations — and a program that is not optimized in every way can increase those risks exponentially.

The past year has highlighted the risks and the tragedies that can result when a medical helicopter crashes. Thirty-five people were killed in nine medical helicopter tragedies in 2008, the deadliest year ever for such crashes. (See page 4 for a review of some of the recent crashes.)

Federal regulators are concerned. The National Transportation Safety Board (NTSB) is focusing on a series of recommendations it has been pushing since the January 2006 release of its call for tighter restrictions on medical helicopters. The Federal Aviation Administration (FAA) is responsible for implementing those changes, but in October 2008, the NTSB board called FAA progress on the recommendations in the last three years “unacceptable.” The NTSB held a three-day hearing in February 2009 to discuss the recent spate of accidents and possible improvements.

The cause of the recent surge in medical helicopter crashes is not yet known. It could be coincidence, experts say, but it also may be that the growing number of medical helicopters is making flaws in the system more apparent. The number of air ambulance programs in the United States has climbed from about 100 in the 1980s to more than 900 now, according to several sources. Some of those medical helicopters (and airplanes, in some instances) are owned and operated by hospitals, while others are operated by independent companies that lease their services to the hospitals.

The NTSB has investigated 65 fatal medical helicopter crashes since 1989. Those data revealed that two-thirds of the helicopters began the mission at night — and half in inclement weather or with reduced visibility. The NTSB found that the most common nonmechanical cause for air ambulance crashes was a collision with obstacles, such as mountains and power lines, often related to the weather conditions. Pilots in 21 of the crashes flew too low or directly into terrain. Ten of the pilots were disoriented by fog, snow, or rain.

A majority of the fatal crashes occurred on the way to pick up a patient, rather than on the return. This is an important finding, because current FAA regulations allow helicopters carrying only crew members to fly under less stringent flight rules than those with patients on board.

SOME FLIGHTS UNNECESSARY

One of the most troubling aspects of the medical helicopter crashes is that the flights were sometimes unnecessary. Emergency personnel on the ground often are eager to call on the helicopter because they think, with the best intentions for the patient, that the faster transport will save lives. That is undoubtedly true in many cases, but not always.

Academic studies have concluded that, in many cases, a patient's injuries were not serious enough to have required the faster transport. And even in some serious cases, a medical helicopter actually may offer little or no advantage over ground transportation. It can take time to dispatch the helicopter, find a landing site, load, and return, but one important factor often overlooked in risk/benefit analyses is that the ground transportation still is used in many cases. Many patients are injured in locations where the helicopter cannot land close by, so it lands elsewhere and a ground ambulance takes the patient to the aircraft. Then the helicopter flies to a hospital that does not have its own landing pad, so the helicopter lands in a parking lot or on another building nearby and the patient is loaded into a ground ambulance again.

After all those delays, sometimes the patient would have been better off just taking ground transport, studies have found. In one 1998 incident, a helicopter crashed while en route to pick up a truck driver injured in an accident near La Gloria, TX. The pilot and two technicians were killed. Even after the delay caused by waiting for the helicopter that never showed up, the truck driver fully recovered after being taken to a hospital by a ground ambulance.

There also is concern that medical helicopters are overused and flown in overly dangerous conditions because of financial pressures and marketing concerns. When a hospital spends millions on its own helicopter or the costs associated with outsourcing the service to a charter company, there can be substantial pressure to use it — either to recoup costs or simply due to the line of thinking that because the facility has it now, the helicopter should be used. If the facility owns the helicopter and has its logo emblazoned all over it, there can be pressure to use the helicopter as a marketing tool, to get it out there in front of the television news cameras.

The flight crews, who must make the final decision whether to fly in adverse conditions, often feel pressure to take risks because they think a patient's life is at stake. Many pilots will fly “mercy missions” under conditions they never would risk otherwise. And they sometimes are eager to log more flight hours.

All of those factors can result in a medical helicopter flying in conditions that result in a tragedy.

SUBSTANTIAL LIABILITY RISKS

Health care providers face substantial liability from any lawsuits following a crash, says **Don Maciejewski**, JD, an aviation attorney with the Jacksonville, FL, law firm of Zisser Robison. He also is a certified aircraft accident investigator, and before practicing law, he was a U.S. Army helicopter pilot. He now specializes in litigation related to helicopter and airplane crashes.

Though 2008 was a particularly bad year for medical helicopter crashes, Maciejewski says medical helicopters always have had a higher accident rate than that of military or nonmedical civilian helicopters. Risk-taking explains the disparity, he says. The crews flying medical helicopters take more risks, often flying in more dangerous conditions, he says.

“2008 was bad, but it's a trend,” he says. “What happens is you have a patient who may not really need urgent transport, you make the decision to fly in crummy weather, into an area that may have all kinds of hazards — wires, mountains — and you fly the mission at night. So instead of one person injured, you end up killing four people — the pilot, co-pilot, nurse, and patient.”

Maciejewski points out that the risks are not uniform. For a hospital in an area with flat terrain, good weather, and its own landing pad, the risks will be lower than for a hospital in a mountainous region, frequently beset with fog and storms, and with no dedicated landing pad at the hospital. The recent accident of two helicopters that crashed into each other near Flagstaff (AZ) Medical Center illustrates how medical flights can be far more hazardous than other aviation. In that incident, two medical helicopters were approaching the hospital to land and simply crashed right into each other. Medical helicopters take off and land without the aid of air traffic control, and Maciejewski says the only possible explanation he can imagine is that the pilots were overeager to land what they thought were critical patients and became distracted.

“There’s this false sense of urgency when you don’t have critical patients on board,” he says. “That’s what’s driving this trend.”

Once a tragedy occurs, the hospital’s liability will depend in part on whether the helicopter was owned and operated by the hospital or leased from a separate company. The most common scenario is that the aircraft is leased, the flight crew are independent contractors to the hospital, and the medical personnel are employees of the hospital, he says. If leased, much of the liability will fall to the helicopter owner and not the hospital, but that does not mean the hospital gets off scot-free. (See the article on page 8 for more on adequate insurance coverage.)

“A lot of times we find that the insurance of the leasing company is inadequate, particularly when someone is catastrophically injured or killed, to compensate the family for that loss,” Maciejewski says.

RISK MANAGER MUST STEP UP

Steve Marks, JD, an attorney with Podhurst Orseck in Miami and one of the nation’s leading aviation attorneys, cautions against contracting with local helicopter pilots for ad hoc flights. This can be tempting, particularly for smaller rural hospitals that can’t afford their own helicopter services.

“Sometimes a local helicopter pilot will offer to do an emergency flight for a few hundred dollars whenever you’re desperate, and it can sound like a good idea. The pilot’s trying to be a Good Samaritan, and you’re trying to save your patient,” he says. “Don’t do it. It’s easy to lull yourself into thinking it’s safe and fine, but it can go terribly wrong — and then you’re the one responsible in the aftermath.”

The downside of having a medical helicopter often is underestimated, Maciejewski says. In the excitement of being able to get such a high-profile, life-saving service, the risks can be minimized. Part of the reason is that people apply the same mentality to medical helicopters that they apply to commercial air travel: “Sure, accidents do happen and they’re tragic,” they think, “but they are so rare that there’s no need to worry about it.”

That is not the case with medical helicopters, and Maciejewski says it is the risk manager’s responsibility to explain the facts.

“We see hospitals go out and get a helicopter and think, ‘Wow, it’s a great marketing tool; we’ve got to use it as much as possible, and our PR is going to go through the roof,’” he says. “The risk managers aren’t involved. The [individual] who has the master’s degree in safety and risk reduction has to step up and say, ‘Wait a minute. There’s a lot of liability here. There’s a lot of crashes.’” ■

Recent crashes show risk of emergency flights

These are details of some of the most recent medical helicopter crashes:

- On June 29, 2008, seven people died when two helicopters crashed into each other near Flagstaff (AZ) Medical Center. One helicopter ferrying a patient with a medical emergency from the Grand Canyon collided with another chopper carrying a patient, leaving seven people dead and critically injuring a nurse. The collision, at 3:45 p.m., was a few hundred yards away from a neighborhood that was spared the falling debris, but it sparked a 10-acre brush fire. An explosion on one of the aircraft after the crash injured two emergency workers who arrived with a ground ambulance company.

The National Transportation Safety Board (NTSB) report on the crash says the recorded transmissions made between both medical crews and the hospital revealed that both of the medical crews contacted the ED at the hospital and provided medical reports on their respective patients: “At the time Angel 1 contacted the hospital, they provided an estimated time of arrival in 15 minutes. The Classic Helicopter Services medical crew reported an estimated time of arrival of 18 minutes. The hospital staff that received the phone calls from both aircraft did not provide any information about the other helicopter that was also en route to the Flagstaff Medical Center helipad.”

Several people witnessed the collision of the helicopters as they approached the hospital helipad and reported seeing both helicopters descending into wooded terrain about ¼ mile from the heliport. A surveillance camera, mounted on a parking garage at the hospital, captured the collision on digital video. The video depicted one helicopter approaching from the north and one helicopter approaching from the south, and it shows both aircraft descending after the collision.

- A helicopter crashed on an isolated ranch in a national forest near Huntsville, TX, on June 6, 2008, killing a patient and three crew members. The aircraft, operated by PHI Air Medical Helicopter, was taking a 58-year-old patient from a hospital in Huntsville to another facility in Houston for surgery. The helicopter left the first hospital at 2:45 a.m., and the hospital lost contact with it after only two minutes.

- A medical helicopter crashed on Sept. 28, 2008, after the pilot lost his bearings in foggy weather near Andrews Air Force Base in District Heights, MD. The crash killed four of the people on board — the pilot, a paramedic, an emergency medical technician, and one of the two traffic accident victims being transported. The second patient survived the crash but was in critical condition.

The helicopter was returning to the hospital when it was diverted to the Air Force base because of fog. The pilot radioed that he was having difficulty assessing his surroundings, twice asking for assistance with landing. Then air traffic controllers lost contact with him, and the helicopter crashed about 1:15 a.m., three miles from the base. ■

Air ambulance report cites many dangers

Patients and air ambulance crews are dying at an alarming rate because the air ambulance helicopter industry has little oversight and poor organization, according to a recent safety review.

The report was released by the Flight Safety Foundation, a research group in Alexandria, VA. The analysis identifies eight “very high” risks within the industry and 18 “high” risks.

The report comes at a time when the industry is facing increased scrutiny because of a sudden surge in crashes. Nine crashes killed 35 people, including six patients, from December 2007 to October 2008, prompting the National Transportation Safety Board to hold a public hearing to address the problem. Six patients were among the dead.

The recent report says part of the problem is that air ambulances are overseen by a patchwork of state and federal agencies that overlap or can leave some areas uncovered, unlike the tight regulation of the commercial airline industry.

The Federal Aviation Administration (FAA) issued a statement saying it welcomed the report. “It confirms what we believe: Reducing risk in helicopter EMS operations demands a systematic approach,” the FAA statement says.

Not everyone was happy with the report. Manufacturer Bell Helicopter paid for the report but did not agree with the conclusions, so the company did not participate in the report’s release. The report was released just prior to a congressional hearing on industry safety issues. There are two bills in Congress that aim to reform the industry.

The full report is available free online at www.flightsafety.org/pdf/HEMS_Industry_Risk_profile.pdf. ■

Pressure to fly often leads to helicopter crash

When a medical helicopter goes down, there often is more than one cause. Bad risk assessment, insufficient technology, and pilot error can combine to create a tragedy.

Risk managers should remember that medical helicopter crashes are almost always preventable accidents, says transportation accident and liability attorney **Jeffrey Kroll, JD**, in Chicago.

“Hospitals are putting these pilots at risk, because medical helicopters are not equipped with the kind of technology that can help pilots avoid crashes,” he says. “Commercial aircraft have terrain awareness warning systems, military pilots use night vision goggles, and hospitals are asking their pilots to fly into dangerous conditions without this equipment.”

Much of the risk comes from the way medical helicopters are dispatched, Kroll says. Rather than an air traffic controller determining whether it is safe to fly, the decision often comes from a 911 dispatcher or a medical professional with no knowledge of risk assessment related to flying conditions. The pilot ultimately decides whether to take off or not, but he or she can be influenced to take unwise risks, he says.

“Take a look at how your flights are dispatched, who makes that decision, and what kind of training they have,” Kroll says. “It’s not just a matter of saying the patient is injured and then looking out the window to see how hard it’s raining. The local airport uses some specific criteria for determining when it’s not safe to fly and so should the hospital.”

Many civilian emergency air crews also do not have adequate experience to fly the high-risk missions they are attempting, says **Don Maciejewski, JD**, an aviation attorney with the Jacksonville, FL, law firm of Zisser Robison and a former Army helicopter pilot. Some of the missions, often in poor weather and difficult terrain, would challenge even highly experienced military pilots, he says. The crews often feel pressured to fly, against their better judgment, Maciejewski says.

“The hospital says, hey, we’re paying insurance, maintenance fees, crew fees; why not use the helicopter? If they have the asset, they feel like they have to use it,” he says. “There’s a level of prestige associated with using these aircraft, and that clouds the judgment of when it is appropriate to use them. It’s one thing to use the helicopter on a bright, clear afternoon when there are no particular hazards, even if it’s not really necessary, but it’s different to do that at two o’clock in the morning in bad weather.”

Night vision goggles, which allow pilots to see terrain in the dark and in bad weather, can greatly improve safety, and nearly all helicopter pilots say they want them, Kroll says. But only about 25% have them, he says, mostly because they cost about \$120,000 for the equipment and training.

Another risk is that many medical helicopters are flown by only a single pilot. Maciejewski calls that a recipe for disaster. Without a co-pilot, the pilot can become “task overloaded” by trying to fly the aircraft, talk on the radio, navigate, keep track of the patient’s status, and many other tasks.

Steve Marks, JD, an attorney with Podhurst Orseck in Miami, says you should look for crews that are experienced specifically in medical flights and not simply helicopter flying. The medical missions can be much more challenging, and the very nature of flying a medical helicopter is different, he

says. Most pilots are used to flying in a relatively calm environment with few distractions. But a medical helicopter can be full of distractions and stressors.

There also is the additional hazard of people entering and departing a helicopter in dangerous conditions, Marks says. This is a risk that people do not generally encounter in commercial aviation, so it is easy to overlook in medical helicopter programs.

“I had a case in which a woman was decapitated because the helicopter had landed on uneven ground, and the rotors were lower than she expected,” Marks says. “Everyone who will be around the helicopter has to be trained in these hazards. It is so easy for people to be focused on their patient or other tasks and walk right into a dangerous situation.” ■

Carry extensive insurance in case of helicopter crash

If you are going to use medical helicopters, Don Maciejewski, JD, an aviation attorney with the Jacksonville, FL, law firm of Zisser Robison, recommends that risk managers be prepared for the worst. Make sure you are adequately insured to cover the payouts from a crash that kills five people on a nonurgent mission, he says.

Even if you lease the helicopter, he suggests having an umbrella insurance policy to cover liability beyond what the helicopter leasing company has.

“If they have a basic liability policy of \$3 million, you might want to go out and buy a \$10 million umbrella policy that never even kicks in until their \$3 million is eaten up,” Maciejewski says. “The beauty of that is that the umbrella policy is usually cheaper than the underlying basic policy and, unless you have a catastrophic event, you’re never going to have a claim.”

Also watch out for too many exclusions in a leasing company’s insurance policy, warns Steve Marks, JD, an attorney with Podhurst Orseck in Miami. He has handled several medical crash cases. Hospitals often think they are protected because the leasing company has insurance, but then they find out that there are so many exclusions that the hospital still is liable when a crash happens.

He agrees with Maciejewski that leasing the helicopter instead of owning it helps reduce liability for the hospital, but he says leasing still leaves you with significant obligations to ensure that the company is safe.

The hospital must confirm that the vendor is adequately insured, that the pilots are insured, and the pilots’ training and annual certifications are current. Marks says he has been involved in aviation litigation that revealed the pilots’ qualifications were not up to date, and ultimately, the hospital can be held liable for not investigating that prior to leasing the service.

If the hospital owns the helicopter, it is responsible for maintaining the aircraft — no small feat and not inexpensive. Marks suggests that for liability reasons, not to mention striving for the highest level of safety, the hospital should follow the strictest standards — known as Part 121 in the Federal Aviation Regulations.

“Those standards are intended for commercial carriers, but a plaintiff’s attorney could argue that you were running what amounted to an unscheduled charter service, and therefore, you should have followed those guidelines,” he says. “I’d follow the highest standards just to be safe.”

PLAINTIFF’S ATTORNEY: BE WARY

The crash of a medical helicopter always will come back to the hospital involved, says transportation accident and liability attorney Jeffrey Kroll, JD, in Chicago. If the helicopter is owned by the hospital, the institution will be responsible for negligent actions that led to the crash. In that sense, he says, the litigation will be similar to a malpractice case in which an employee physician committed an error leading to patient harm.

But even in the case of a leased helicopter, the hospital can be sued if the helicopter and its crew were seen as an “apparent agent,” Kroll says. An apparent agent is one that the public could reasonably

assume is an employee of the hospital.

“Even though the helicopter is not owned by General Hospital, and the hospital does not employ the flight crew, it can be an apparent agent; because when I called for help from the hospital, they sent that helicopter, and I assumed I was getting the General Hospital helicopter,” he explains. “So, you can never just rubber stamp the credentials check and assume you won’t have any liability.”

Lawsuits following a crash will hinge on showing that the hospital had a duty to deliver the patient safely or, if no patients were harmed, that the hospital had a duty to provide a safe operating environment for the crew. Then the plaintiff will show causation and point to some failing by the hospital in training, maintenance, policies and procedures, or individual performance.

“The hospital’s defense sometimes is to say that the patient was badly injured — that even if we hadn’t crashed the helicopter and killed him in that field — this young boy would have died anyway after we got him to the hospital,” Kroll says. “I can tell you that doesn’t go over well with a jury. But it’s the only thing they’re left with when they’re at fault and they’re desperate.”

Kroll says the settlements or jury awards will be quite large in helicopter crashes.

“I can’t tell you the amounts of settlements in the cases I’ve handled, but suffice to say this is about the worst thing that can happen to these families,” he says. “They put their trust in you and that helicopter, and this is about as big a tragedy as you can present in a lawsuit.” ■

Training, high standards can reduce copter risks

For all their undeniable benefits, medical helicopters bring with them a high risk of tragedy and liability for the hospital. When a helicopter goes down, most often people die and huge lawsuits result. But there are ways to minimize those risks.

Risk managers have a strong impetus to act. Thirty-five people were killed in nine medical helicopter tragedies in 2008, the deadliest year ever for such crashes, prompting the National Transportation Safety Board (NTSB) to investigate the causes and consider tighter restrictions on medical helicopters. The NTSB has investigated 65 fatal medical helicopter crashes since 1989.

Risk managers should focus on five key steps for reducing the risks and potential liability from a medical helicopter crash, says **Don Maciejewski, JD**, an aviation attorney with the Jacksonville, FL, law firm of Zisser Robison. He also is a certified aircraft accident investigator, and before practicing law, he was a U.S. Army helicopter pilot. He now specializes in litigation related to helicopter and airplane crashes.

Maciejewski outlines these five ways to reduce the risks and liability exposure:

1. Train the crew appropriately and to the highest standards.

Provide, or require as a condition of your contract with a vendor, that they provide all flight crew with training in “cockpit resource management,” which ensures that the crew members communicate with each other effectively. In many cases, for instance, a co-pilot or other crew member knows that something is wrong but is reluctant to say anything to the pilot.

2. Use good risk management when deciding whether to accept missions.

Employ a risk assessment matrix that factors in safety elements and the urgency of the mission. If the patient is critical and likely to die without an air evacuation, then that must be considered differently from a case in which the patient could be transported by ground, even though that trip would be longer. If weather conditions are iffy, you must be willing to refuse the noncritical mission. And when weather conditions are beyond acceptable, you must be willing to refuse even the critical patient. If your crew and administrators are not willing to make that hard decision, you have the wrong people in those positions.

3. Insure your facility for the worst possible scenario.

That means a helicopter crash that kills five people, leaves one child permanently disabled, and the crash was caused by crew and/or administrative error.

4. Insulate the hospital from the helicopter operator as much as possible.

When developing a helicopter service, which often means contracting with an outside company to provide the aircraft and sometimes the crew, place the risk on that other company at every opportunity. Strive for a contractual arrangement that places the liability on the helicopter company to the greatest extent possible.

Maciejewski points out that it is difficult for a hospital to escape liability following a helicopter crash, even when the aircraft was leased from another company. If the helicopter was flying under the auspices of the hospital and at the direction of the hospital, there will be ample legal arguments

for suing the provider, he says.

“That doesn’t mean you don’t try to put some distance between your organization and the other,” he says. “You have a memorandum of understanding that says your hospital’s responsibility is to say, ‘Here’s the patient; here’s their status; here’s where they need to go.’ Then it’s up to the other company to decide whether to go or not. The smaller hospitals especially have to do it that way, because they can’t afford to insure against risk.”

5. Formalize the helicopter service and follow strict protocols.

The helicopter service must be set up to adhere to the strictest standards from the NTSB and best practices for aviation. Never forget that flying helicopters is vastly different from operating ground ambulances and that you must have a highly organized system in place that requires everyone involved to follow set protocols.

FAA STANDARDS NOT ENOUGH

The Federal Aviation Administration (FAA) requirements for medical helicopters are not as stringent as the nonbinding guidelines from the NTSB, notes **Kathy Poppitt**, JD, a partner in the Austin, TX, office of the law firm Thompson & Knight. So don’t be misled by claims that a helicopter meets all FAA requirements. That’s a fine start, she says, but risk managers should strive for compliance with the NTSB guidelines for a higher measure of safety. **(For more on a program that goes beyond the minimum requirements, see the article on page 13.)**

In January 2006, the NTSB issued a special investigation report that noted many of the 55 EMS-related aviation accidents (fatal and nonfatal) that occurred between January 2002 and January 2005 could have been prevented with simple corrective actions, including oversight, flight-risk evaluations, improved dispatch procedures, and the incorporation of available technologies. The NTSB issued four safety recommendations to the FAA, which have not yet been fully implemented. *(Editor’s note: The complete report and recommendations can be found online at www.nts.gov/publictn/2006/SIR0601.pdf.)*

The Safety Board also has added medical helicopter safety to its Most Wanted List of Transportation Safety Improvements. *(Editor’s note: A summary of the Oct. 28, 2008, board meeting regarding the Most Wanted List of Transportation Safety Improvements is online at www.nts.gov/recs/most-wanted/fedmwlpptwebfinal.pdf.)*

FLIGHTS MAY NOT BE REIMBURSED

In addition to the crash risk, risk managers should remember that poor flight decisions can cause reimbursement difficulties, Poppitt says. An air transfer can be twice as expensive, sometimes much more, than ground transport, so third-party payers are not shy about denying reimbursement on the grounds that the helicopter trip was not really necessary.

“So, when your dispatcher is making that call whether to go or not, they have to remember that even when the weather is good and there’s not really much of a safety question, you still can’t send the helicopter out for every possible run,” she says. “There is evidence that these services are over-used, and payers are aware of that. They’re going to kick it back and leave you with the bill.”

And using the helicopter when it wasn't really necessary provides strong ammunition for a plaintiff's attorney, Poppitt notes. When tragedy strikes, the other side is going to say, "They didn't really need to send the helicopter out at all, and now three crew members are dead."

Advanced technology can help reduce the risks, particularly night vision goggles and devices that alert the pilot to dangerous terrain and low altitude. Providing that equipment, or requiring that your vendor provide it, can greatly enhance safety for your helicopter program, Poppitt says. But she also cautions not to put too much faith in those systems.

Terrain warning systems, for instance, can produce too many false-positive warnings and cause the crew to grow complacent, Poppitt says. The problem is that the systems are designed largely for aircraft that don't spend a great deal of time flying low and landing in unusual places, as medical helicopters do, so they warn of terrain so often that the helicopter crew doesn't take much notice when they really are about to fly into a mountain. Such technology can improve safety, but it is not a panacea.

CHECK COMPANY'S SAFETY RECORD

When selecting a helicopter company to provide air service for your hospital, you should focus on safety as a top priority, says **David Norton, JD**, an attorney with the law firm of Shackelford Melton in Dallas. Norton also is a pilot who helps his clients own, operate, buy, sell, and/or lease all sizes and types of business aircraft. A large part of his practice deals with providing aviation regulatory counsel and legal risk management for his clients. There will be many cost and business factors to consider, as when selecting any vendor, but for this service, the safety record and overall safety program must be a top priority, Norton notes.

"Look for the company that goes beyond the minimum standards," he says. "This is not an area where you want to settle for the company that's just doing what they have to do to be in compliance."

Due diligence is important, Norton says. Take advantage of the Internet to research the charter company as much as you can to find public records and news reports about the company's history and current standing with regulators. Always ask if the charter company has had any regulatory violations or other issues with the FAA, and how they were addressed, he suggests. Remember, however, that the FAA regulations are so complex that nearly every charter company has had some sort of violation.

"The thing you want to know is what kind of run-in they had with the FAA," Norton says. "Was it because they didn't complete some piece of paperwork in the right way, or was it because a tail rotor fell off in flight?" ■

Wake Forest revamps after two copter crashes

The air ambulance program at Wake Forest University Baptist Medical Center in Winston-Salem, NC, goes beyond the minimum requirements in an effort to make its medical helicopters as safe as they can be.

The institution flies its medical choppers under the guidelines recommended in 1988 by the National Safety Transportation Board (NTSB), which the Federal Aviation Administration (FAA) still has not adopted as requirements for all programs. Wake Forest has good reason to take helicopter safety seriously: The program began in 1986 and soon experienced two fatal crashes. Those accidents prompted the hospital to put safety first.

Those crashes occurred when the aircraft were not as advanced, and terrain avoidance systems would have helped in both cases, says **James Bryant**, RN, MSN, director of emergency and transport services at Wake Forest. The hospital now flies an EC-135 Eurocopter, which is smaller and more fuel-efficient than its predecessor, and it comes equipped with terrain avoidance, autopilot, satellite tracking, and a digital cockpit as opposed to older dial-type gauges.

The crew consists of one pilot, a nurse, and a paramedic. It typically carries one patient but can take two if needed. The hospital just recently acquired night vision goggles, and the crew was to begin training with them in January.

Wake Forest contracts with Air Methods, a company based in Englewood, CO, that provides the aircraft, pilots, mechanics, and logistical support. Wake Forest provides the medical crew, billing, dispatching, and flight monitoring for the missions. Flight operations are monitored from Air Methods' Colorado base, aiding the Wake Forest crew with weather reports and decision making about each mission. Wake Forest has a strict policy that says any crew member can veto a mission for safety reasons.

“If any flight member believes the flight is not a go, and that includes everything down to just a gut feeling, then we do not go on the flight,” Bryant says. “Anyone can decline a flight. It could be a bad feeling about the weather, or it can be that they’re not feeling well, they haven’t had a good day, and they don’t think they can fulfill their obligation to safety.”

Wake Forest never second-guesses or challenges pilots or mechanics about safety. If a mechanic says the aircraft can’t fly today, that’s the end of the discussion. But at the same time, Bryant says, the crew is held to extremely high standards for compliance with safety regulations. A paramedic recently was grounded for a period of time because he left a trash bag near the helicopter — a safety risk because the bag could be sucked into the engine. The pilot found the bag and had the paramedic temporarily grounded, a strong message that safety infractions will not be tolerated.

The Wake Forest program works proactively to minimize many risks by designating safe landing areas in many communities, studying the approach and hazards in advance. Even with a single aircraft, Wake Forest flies about 600 missions per year, averaging two per day.

Bryant is in the process of working out an arrangement with his counterparts at other hospitals in the community, so they can share satellite tracking data for their helicopter programs, in effect creating

an air traffic control system for area medical helicopters. He already has worked out an agreement with one nearby hospital and hopes to include many more. Such an arrangement could help avoid crashes.

Wake Forest requires that its medical choppers fly under the FAA's "Part 135" rules, referring to a part of the FAA regulations governing the minimum weather allowances for safe flight, rather than the "Part 91" rules. The FAA allows medical choppers to fly under "Part 91," which means flying in worse weather, but Wake Forest insists on meeting the higher safety standards. The pilots also are instrument-rated for flying in bad weather.

"On the same day that they had a crash in Wisconsin recently, we had really bad weather with a lot of clouds rolling in as our pilot was already out on a mission, and so he made the decision to cancel the mission and land at a local airport. We picked our crew up at the airport and brought them back by ground," Bryant recalls. "Instead of trying to navigate that bad weather, he made the right decision to use instruments for a safe landing and wait for a pickup. That's the decision making we want from our crew."

Despite the best efforts to ensure safety, Wake Forest knows from experience that a medevac flight can end in tragedy. So, the hospital provides an extra \$1 million in life insurance coverage for each member of the crew, beyond any insurance and other benefits they may receive from their employers.

"It gives the crew a little bit of security to know that if something were to happen, their families won't be left in need," Bryant says. "We don't want to think about crashes all the time, but we have to remember that it can happen." ■

Night-vision goggles endorsed by air group

Testifying before a crowded hearing in Washington, DC, on the oversight of helicopter medical services, the head of a leading air ambulance organization recently promised lawmakers that the dismal safety record of the industry can be improved.

Sandy Kinkade, president of the Association of Air Medical Services (AAMS) in Alexandria, VA, offered an overview of the medevac helicopter industry and discussed the need for greater funding for airport and low-altitude infrastructure improvements, among other initiatives aimed at making patient air transport safer. The hearing was called by the U.S. House of Representatives Aviation Subcommittee after a sudden surge in crashes. Nine crashes killed 35 people, including six patients, from December 2007 to October 2008, prompting the National Transportation Safety Board to hold a public hearing to address the problem.

Kinkade told the committee that the industry was determined to improve safety.

Chief among the association's safety proposals is that all medical night-flight operations be required to either utilize night vision goggles (NVGs) similar enhanced-vision systems, or be conducted strictly under instrument flight rules (IFR). AAMS recommended that Congress further this process along by appropriating funds for the Federal Aviation Administration (FAA) to expand its capabilities surrounding the certification and approval of NVGs or similar enhanced-vision systems.

AAMS also supports improving the low-altitude aviation infrastructure by expanding the Airport Improvement Program to include private-use hospital helipads, regional airports, and other routinely utilized locations, and directing more FAA funding and research toward expanding the capacity of low-altitude, off-airport weather reporting. AAMS also is in favor of increasing the number of automated weather observation stations and utilizing other weather forecasting technologies.

In addition, AAMS has asked that funding and research be directed toward associated approach and departure procedures to facilitate a seamless transition from visual flight rules to IFR.

The AAMS testimony came on the heels of a report by the Flight Safety Foundation, a research group in Alexandria, VA. The analysis identifies eight "very high" risks within the industry and 18 "high" risks. ■