



Proposed modifications of rules governing air ambulance helicopters should help prevent accidents, supporters say.

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# CHANGING THE RULES

Proposed changes in regulations governing helicopter emergency medical services (EMS)<sup>1</sup> operations — including a plan to institute stricter limits for weather minimums and flight crew rest requirements — are crucial to improving safety, the U.S. National Transportation Safety Board (NTSB) says.

“In the past year, 12 total and seven fatal HEMS [helicopter EMS] accidents have occurred, some of which might have been

prevented with the implementation of these rules,” said NTSB Chairman Deborah A.P. Hersman, in comments submitted in January in response to the U.S. Federal Aviation Administration’s (FAA’s) notice of proposed rulemaking (NPRM).<sup>2</sup>

The NPRM, which also contains provisions addressing commercial helicopter operations, Part 91 general helicopter operations, and load manifest requirements for Part 135 aircraft, was published in October 2010 in the U.S. *Federal*

*Register* (Table 1, p. 46). A public comment period ended in January.

A key provision would require all helicopter air ambulance flights with medical personnel aboard to be conducted under U.S. Federal Aviation Regulations Part 135, which currently governs commuter and on-demand operations. Currently, many of these flights are subject to the less stringent weather minimums and flight crew duty and flight time limitations and rest requirements of Part 91, which outlines general operating and flight rules. Operations under Part 91 currently are permitted when patients are not aboard and when the medical crewmembers aboard are employed by the helicopter operator; if they work for another organization, the flight is conducted under Part 135.

The NTSB for several years has advocated placing HEMS flights under Part 135, and in her comments about the NPRM, Hersman said, “The ability to fly under Part 91 potentially provides the operator with additional operational flexibilities due to decreased visual flight rules (VFR) weather minimums and no flight crew rest requirements. The NTSB believes that these operational benefits of operating under Part 91 are greatly overshadowed by the increased risk that such operations have historically posed.”

Some industry groups, while voicing support for the move to apply Part 135 safety criteria to all flights carrying medical crewmembers, also expressed concern about the details of implementing the provision.

The Association of Air Medical Services (AAMS), which represents providers of air and ground medical transport systems, said in its comments that many operators currently apply the more stringent Part 135 requirements for weather minimums and crew rest.

“While we believe that codifying these requirements via regulation would provide a stable and consistent enforcement of a widely used practice, the FAA must first address the many potential unintended consequences that exist under the proposed language,” AAMS said.

For example, the association said, its members are especially concerned that the language

included in the NPRM might limit opportunities for instrument flight rules (IFR) training and proficiency training — activities that sometimes are conducted during return flights when patients are not in the helicopters but medical personnel are present.

The Helicopter Association International (HAI) also warned of “potential unintended consequences” if the Part 135 provision is adopted, adding, “We suggest that the FAA work with industry stakeholders to conduct a detailed review of the legal, regulatory and practical implications of the proposed language before this provision is finalized.”

The association also noted that many operators currently use global positioning system (GPS) approaches that have been approved under Part 91. “We are concerned about the potential impact of the proposed provisions on that activity,” HAI said, emphasizing the need to encourage increased use of IFR flight. “In this rulemaking, the FAA must avoid creating unintended impediments to the use of IFR.”

The National Air Transportation Association (NATA) said it was concerned about the “cumulative costs being imposed on helicopter operators, particularly air ambulance helicopters” by the implementation of Part 135 provisions. A longer implementation timetable or staggered implementation of some requirements might ease the financial burden, NATA said.

The Association of Critical Care Transport (ACCT), made up of air and ground critical care transport providers and others, called for “fundamental change ... to protect patients and the front-line pilots and medical providers who care for them” and said that “there is broad industry consensus on the need for increased regulation.”

ACCT endorsed the FAA’s proposals to apply Part 135 to all legs of air ambulance flights when medical personnel are aboard and said that the accompanying proposal to implement operational control centers (OCCs) and enhanced operational control procedures should be expanded to require all air ambulances — including the small operators excluded from the FAA’s proposal — to have an OCC.

**Summary: Helicopter EMS Safety NPRM**

<b>Common causal factors of accidents</b>	Controlled flight into terrain, loss of control, inadvertent flight into instrument meteorological conditions, night flying
<b>Proposed risk mitigations</b>	Requirement to install helicopter terrain awareness and warning systems; establishment of operational control centers; conduct flights under FARs Part 135 when medical personnel are aboard
<b>Estimated cost to industry</b>	\$225 million over 10-year period: \$136 million for air ambulance certificate holders, \$89 million for commercial helicopter operators
<b>Estimated benefits</b>	\$83 million – \$1.98 billion over 10-year period

EMS = emergency medical services; FARs = U.S. Federal Aviation Regulations; NPRM = Notice of Proposed Rulemaking

Source: FAA Notice of Proposed Rulemaking FAA-02010-0982, published Oct. 12, 2010

**Table 1**

Other organizations, including HAI, disagreed. HAI said that, although it supports the concept of OCCs, the NPRM provision calling for their establishment for any operation with more than 10 aircraft “creates an unnecessarily costly and unworkable monstrosity.”

In the NPRM, the FAA said it was considering a requirement that a lightweight aircraft recording system (LARS) be installed in helicopter air ambulances to record flight performance and operational data, and provide critical information in case of an accident. Flight data recording equipment has not been widely used in commercial helicopter air ambulances, the FAA said, indicating that about 89 percent of helicopter air ambulance certificate holders have not installed flight data recorders or other similar devices.

In its comments on the NPRM, HAI said that although LARS has safety-enhancing potential, “we do not believe that the technology is sufficiently mature ... to serve as the basis for a regulatory equipment mandate.” An FAA-industry work group should conduct a study to help provide long-term guidance on the issue, HAI said.

### Night Vision Goggles

The National EMS Pilots Association (NEMSPA) challenged a provision of the NPRM that would require operators of helicopters used in

air ambulance flights to equip the aircraft with helicopter terrain awareness and warning systems (HTAWS).

“The FAA should not mandate HTAWS in lieu of other proven technologies, including night vision goggles (NVGs) and other night vision imaging systems,” NEMSPA said.

“While NEMSPA recognizes HTAWS as a great technology, it has only been truly tested and proven in the high-altitude IFR environment by fixed-wing aircraft,” the organization added. “Minimal data currently exist for its use in the low-altitude helicopter community. ... NEMSPA would

request that the FAA reconsider HTAWS as described in its current form within the NPRM. In addition, NEMSPA would request that the FAA consider additional night vision solutions, such as NVGs, as being of equal value to HTAWS.”

AAMS agreed, calling for use of NVGs along with HTAWS.

“We do not view NVGs and HTAWS as an either/or proposition,” AAMS said. “Both have safety benefits that can complement one another.”

LifeFlight of Maine, which operates twin-engine aircraft fully equipped for IFR flight with NVGs for all crewmembers, urged the FAA to go further than the NPRM. “Instrument flight coupled with NVGs and HTAWS should be a minimum equipment standard for HEMS night operations,” the organization said. “Both are important safety tools used to assist the pilot and should be on board and available at night. HEMS pilots/medical crew should be trained to use their discretion regarding the environmental conditions/appropriateness of NVG use.”

### Wider Application

The Air Medical Operators Association (AMOA) called for wider application of the proposed rules, suggesting that any new requirements should be applied not only to privately owned air ambulance operations but also to

government entities that operate aircraft used to transport patients.

“All helicopter operators carrying patients should operate to a single safety standard,” AMOA said. “These rules, therefore, should apply to every operation, regardless of affiliation or revenue status.”

PHI Inc., whose Air Medical Group operates from 70 bases across the United States, also urged the FAA to apply safety requirements to all air ambulance operators. “Thousands of passengers are transported every year on air ambulance flights by government operators,” PHI said. “PHI Inc. believes the safety enhancements in the proposed rule should also apply to protect these passengers.”

Previous interpretations of FAA guidance have indicated that “routine medevac of persons due to traffic accidents or other similar incidents and hospital-to-hospital patient transfers are not governmental functions and should be considered civil aircraft, subject to FAA safety oversight,” PHI said.

### Effective Oversight

AMOA also said that it was concerned about “the FAA’s ability to effectively inspect and oversee these proposed new requirements in a manner consistent with uniform application of the rules in a timely manner.” The organization noted that in the past, it has experienced “uneven application of the current rules due to a wide range of interpretations and misunderstandings among FAA inspectors, flight standards district offices (FSDOs) and headquarters.”

### Instrument Ratings

Another provision of the NPRM calls for all helicopter air ambulance

operators to ensure that their pilots-in-command hold an instrument rating. ACCT, which was among the organizations endorsing the provision, said that it “acknowledges the potential for helicopter air ambulance pilots to enter into inadvertent IMC [instrument meteorological conditions] and agrees with the FAA proposition. ... The additional training and familiarity with instrument procedures during IMC ... will ensure pilots are aware of the hazards and risks and may reduce the incidents of [inadvertent] IMC encounters.”

Other provisions that the FAA said were intended to enhance safety of helicopter air ambulance operations would “increase VFR weather minima, allow IFR operations at locations without weather reporting, specify procedures for VFR/visual transitions from instrument approaches and require additional flight planning.” The FAA said these proposals were intended to reduce accidents involving controlled flight into terrain (CFIT), collisions with obstacles, nighttime accidents and accidents resulting from inadvertent flight into IMC.

Some of these measures already exist in FAA Operations Specification A021, issued to certificate holders that conduct helicopter air ambulance operations.

HAI said that it “strongly supports efforts to promote the use of IFR whenever possible as a means of enhancing safety and reducing CFIT accidents.” However, the organization and others criticized the FAA’s explanation of how some of the provisions would be implemented.

For example, HAI complained of a “fatal flaw” in the proposed rule to allow IFR operations at airports and

heliports without weather reporting, noting that the NPRM does not specify that possessing area forecast weather information is an acceptable alternative to having an approved weather reporting facility within 15 nm (28 km) of an intended landing area.

“As a result, this proposal would actually undermine the progress that has been made under A021, allowing many operators to develop IFR systems using area forecast weather,” HAI said. “If the proposed rule is enacted as written, in many cases this proposal would require an operator to add an approved automated weather station at a location within 15 nm or operate VFR. This significantly undermines the ability of operators to add IFR operations as a safety improvement/risk mitigation strategy.”

Other sections of the NPRM would require all commercial helicopter operators to “revise IFR alternate airport weather minimums, demonstrate competency in recovery from inadvertent [flight into IMC], equip their helicopters with radio altimeters, and change the definition of ‘extended overwater operation’ and require additional equipment for these operations.”

Operators of all Part 135 aircraft — both airplanes and helicopters — would be required under terms of the NPRM to prepare a load manifest before flight and transmit a copy to their base of operations.

Another provision would require Part 91 operators of general aviation helicopters to revise their VFR weather minimums. ➤

### Notes

1. The NTSB refers to EMS operations, while the FAA uses the term “air ambulance.”
2. FAA. *Federal Register* Volume 75 (Oct. 12, 2010): 62,639–62,674.