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General Electric	7.41
Goodrich Corp	30.01
Honeywell Intl	23.23
L-3 Comm.	57.63
Lockheed Martin	58.24
Northrop Grum.	34.35
Raytheon	33.81
Rockwell Collins	27.85
Textron Inc	3.98
United Tech.	37.56

## Hearings 'just the beginning' on helicopter EMS safety issue

By Paul Lowe

March 1, 2009

Rotorcraft, Safety, Government

At the conclusion of three-and-a-half days of NTSB public hearings on the safety of helicopter emergency medical services (HEMS) operations early last month, Board member Robert Sumwalt summed up what several witnesses had already conceded, "There is no single magic bullet."

As chairman of the hearing, Sumwalt concluded at the end that "this hearing is not the be all and end all; this is just the beginning." He said the Board would post an executive summary in several weeks after poring over testimony from 41 witnesses and wading through a docket of materials, adding that the NTSB might reopen this hearing. Witnesses included pilots, medical personnel, managers and the FAA.

Dr. Ira Blumen, program and medical director of the University of Chicago Aeromedical Network, noted that the rate of fatalities per 100,000 air-ambulance employees over the past 10 years exceeds those of other dangerous professions such as deep-sea fishing or logging.

In January 2006, the NTSB issued a Special Investigation Report on EMS operations that involved the analysis of all EMS-related aviation accidents that occurred from January 2002 through January 2005. There were 55 accidents during this three-year window; they involved 41 helicopters and 14 airplanes, and killed 54 people and seriously injured 19.

### Accidents Preventable

The Board concluded that 29 of the 55 accidents could have been prevented with corrective actions identified in the report. It recommended that the FAA require all EMS operators to comply with Part 135 operations specifications during the conduct of all flights with medical personnel on board; mandate that all EMS operators develop and implement flight risk evaluation programs; require EMS operators to use formalized dispatch and flight-following procedures that include up-to-date weather information and assistance in flight risk assessment decisions; and require EMS operators to install terrain awareness and warning systems (TAWS) on their aircraft.

When the NTSB announced in November that it would hold new hearings last month, it said that over the previous 12 months (back to December 2007), it investigated an additional nine fatal EMS accidents, which killed 35 people. That was the highest annual death toll in the industry's history.

"We have seen an alarming rise in the numbers of EMS accidents and the Safety Board believes some of these accidents could have been prevented if our recommendations were implemented," Sumwalt said. "This hearing will be extremely important because it can provide an opportunity to learn more about the industry so that possibly we can make further recommendations that can prevent these accidents and save lives."

Last October, the NTSB added "improving safety of emergency medical services flights" to its annually updated Most Wanted List of Transportation Safety Improvements.

Blumen testified that relatively few patients have died in EMS accidents—34 out of about 4.3 million transported since 1972. One explanation is that air-ambulance flights spend more time flying without patients than with them. A typical flight goes to the pickup with only the crew on board, transports the victim to a hospital, and then returns to base with only the crew on board. In addition, crewmembers outnumber patients three or four to one.

When Blumen was asked to explain the sharp uptick in the 2008 HEMS accident figures, he replied, "I don't think there is any logic to the increase in accidents that we saw."

Helicopter Association International (HAI) president Matt Zuccaro, who is also co-chair of the International Helicopter Safety Team (IHST), was one of three keynote witnesses—along with Blumen and Sylvain Seguin, v-p of safety and quality with Canadian Helicopters in Edmonton, Alberta—to open the hearing with individual presentations.

Zuccaro said HAI has created a safety management system (SMS) tool kit to help operators start an SMS within their own operations. In addition, HAI, the Association of Air Medical Services (AAMS) and the Air Medical Operators Association (AMOA) have compiled initiatives that include a "prioritized scheduling protocol to prevent helicopter shopping." That is a practice where dispatchers, when rejected by one helicopter EMS to make a flight, keep looking until another operator agrees to fly.

The initiatives also include HEMS risk assessment; isolating the pilot from medical

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to safe aeronautical decision making; local pre-established helistops; formalized operational control agreements with clients; and formalized dispatch and communications procedures.

Zuccaro also addressed such HEMS issues and recommendations as mandatory use of night-vision goggles (NVGs); an all-IFR operating environment; elimination of launch/response times; study of fatigue factors in HEMS; promotion of risk aversion, not risk exposure; client education programs; appropriate application of technology; non-punitive safety reporting environments; and implementation of SMS.

"Safety is not a slogan," said Zuccaro. "It has to be practiced. It requires passion and commitment."

While U.S. HEMS accident statistics have been on the rise, Canada has not had a fatality since 1977, when its EMS system was started. Unlike many U.S. HEMS providers, which fly with only one pilot, Canadian operators are required to have two pilots on each helicopter and flights are conducted under stricter weather standards, said Seguin.

Under questioning by the NTSB technical panel, Seguin explained that Canada serves 21 million people with just 20 helicopters. According to the FAA, there are approximately 840 emergency medical service helicopters operating in the U.S., most of which fly under Part 135 rules when patients are on board.

#### Operational Changes

A joint position paper submitted by HAI, AAMS and AMOA proposed that all medical night-flight operations be required to use either NVGs or similar enhanced-vision systems, or be conducted strictly under instrument flight rules, in a timeline established by the FAA and in coordination with air medical service providers.

"While the NTSB has not yet released all its findings, what we do know is that recent studies reveal that the majority of accidents occur in low light and changing weather," said AAMS president Sandy Kinkade. "Moreover, a review of accidents over the last two years shows that no service model, category of operator [for-profit, not-for-profit, civilian or government] or geographical area is immune to accidents.

"Therefore, to reduce this tragic accident rate, it is imperative that our industry continue to adopt appropriate safety measures, particularly with regard to nighttime and changing weather situations, and that more funds be dedicated to aviation infrastructure improvements for helicopters."

In particular, the associations are recommending that Congress expedite funding for hospital helipads, enhanced off-airport weather reporting and GPS technologies and other initiatives aimed at improving the low-altitude infrastructure.

The associations also believe the FAA should study flight crew fatigue factors; establish guidelines to discourage "helicopter shopping" among local emergency-response networks; and adopt regulations and new technology standards that govern equipment, devices and procedures. Furthermore, the FAA should provide best practices related to existing operational control systems and flight operations quality assurance programs.

John Allen, the new director of the FAA's Flight Standards Service, said the agency is considering issuing guidance on fatigue, which he termed a "significant issue." He also answered in the affirmative when asked if the FAA is considering rulemaking specific to HEMS, including TAWS and NVGs.

"We are actively considering a rulemaking effort," Allen said. "We are ready to move forward and intend to do so."

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