



NTSB National Transportation Safety Board

EMS Helicopter Safety: Time for a paradigm shift

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June 23, 2009**

- HEMS safely transports nearly 400,000 patients each year
- HEMS performs a vital function of providing critical care



However:

- Current HEMS accident record is alarming and it is unacceptable
- Improvements must be made

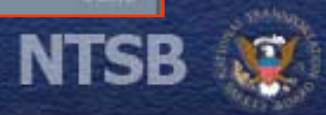
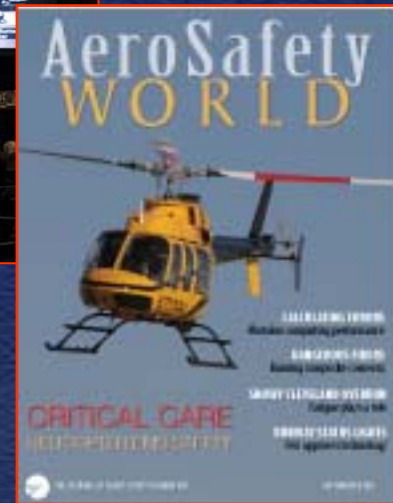
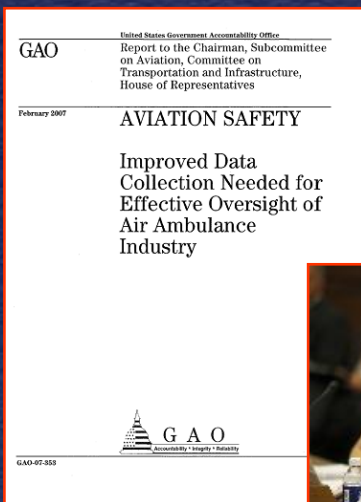


Last 6 years - 85 accidents; 77 fatalities

- 2003 - 19 accidents; 7 fatalities
- 2004 - 13 accidents; 18 fatalities
- 2005 - 15 accidents; 11 fatalities
- 2006 - 13 accidents; 5 fatalities
- 2007 - 12 accidents; 7 fatalities
- 2008 - 13 accidents; 29 fatalities

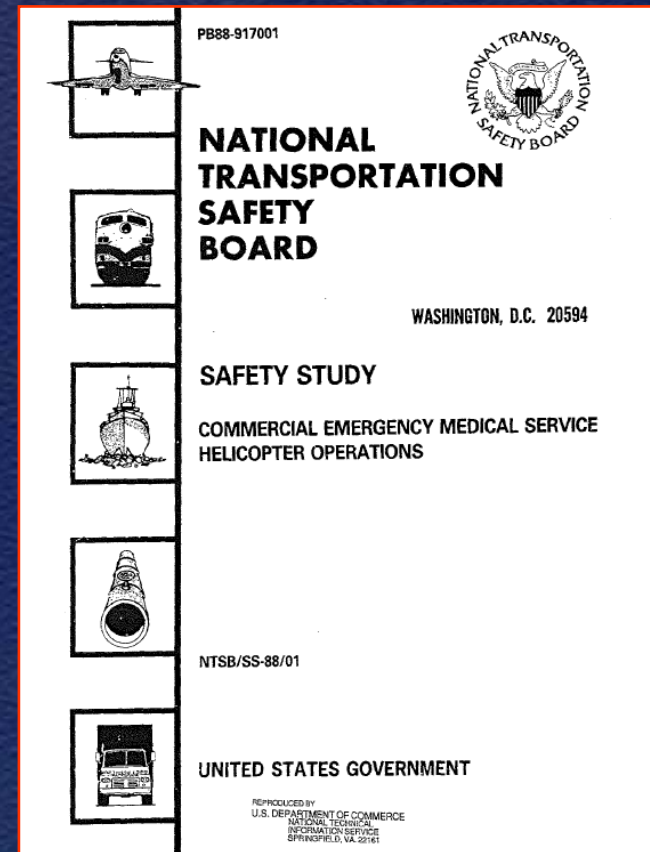
Recent HEMS accidents

- Getting the attention of Congress, GAO, FAA, industry, media, public and NTSB



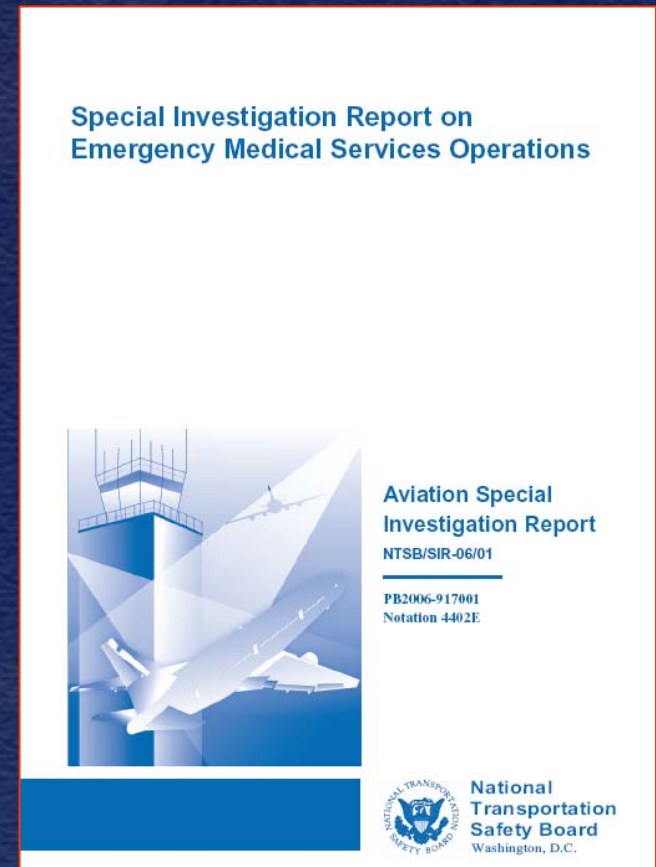
NTSB has longstanding concern of HEMS Safety

- 1988 Safety Study
 - Evaluated 59 HEMS accidents
 - Issued 19 safety recommendations to FAA, 2 associations and NASA



2006 Special Investigation Report

- Analyzed 55 EMS Accidents
 - 14 Airplane
 - 41 Helicopter
- Determined that 29 of the 55 accidents could have been prevented
 - if corrective actions in the report had been implemented



EMS Safety Issue 1: Operations Without Patients Onboard

- Positioning flights operate as Part 91
- 35 of 55 accidents Part 91
- Weather minimum requirements:
 - Part 91: “Remain clear of clouds”
 - Part 135: 1,000-foot ceiling; 3 mi. vis
- Crew rest requirements



Recommendation: FAA require operations under Part 135 for all legs of EMS mission.

EMS Safety Issue 2: Flight Risk Evaluation

- Risk evaluation requires pilot to assess situation without influence of urgency
- Risk evaluation may have prevented 14 of 55 accidents



Recommendation: FAA to require flight risk evaluation for all EMS missions.

EMS Safety Issue 3: Flight Dispatch Procedures

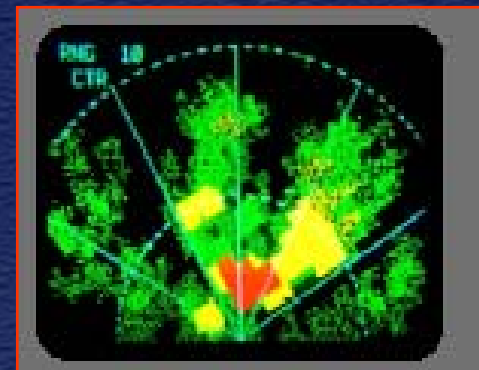
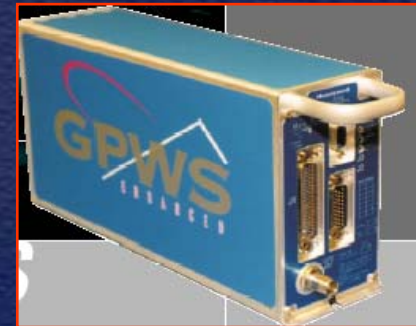
- “911” vs. “Flight” Dispatch
- Flight Dispatch can provide weather info, risk assessment, route info, flight following, etc.
- Many EMS operators lack flight dispatching procedures
- Dispatch may have prevented 11 of 55 accidents



Recommendation: FAA should require EMS operators to utilize flight dispatch procedures

EMS Safety Issue 4: Terrain Avoidance Warning System

- FAA now requires TAWS on turbine-powered airplanes with 6 passengers or more
- 17 of 55 accidents may have been prevented with TAWS (CFIT)



Recommendation: FAA should require that EMS operators use TAWS.



NTSB MOST WANTED LIST

Transportation Safety
Improvements

2009

*Critical changes needed to reduce
transportation accidents and save lives.*

NTSB



3 of 4 Recommendations

NTSB MOST WANTED LIST

AVIATION: The Federal Aviation Administration should:

Improve Safety of Emergency Medical Services Flights

- Conduct all flights with medical personnel on board in accordance with current FAA regulations.
- Develop and implement minimum flight altitudes for EMS flights.
- Require enhanced dispatch and flight-following procedures including up-to-date weather information.
- Install terrain awareness and warning systems on aircraft.

Open - Unacceptable Response

NTSB Public Hearing on HEMS



Feb 3-6, 2009

- 41 witnesses representing
 - HEMS operators
 - industry associations
 - manufacturers
 - hospitals

Parties to Hearing

- Air Methods
- Association of Air Medical Services (AAMS)
- CareFlight
- Federal Aviation Administration (FAA)
- Helicopter Association International (HAI)
- National EMS Pilots Association (NEMSA)
- Professional Helicopter Pilots Association (PHPA)/
Office of Professional Employees International Union
(OPEIU), AFL-CIO

Comprehensive look at HEMS industry

- Sought to better understand why this industry has grown significantly in recent years
- Explored if the increase in accidents was related to increasing competitive pressure to complete flights
- Examined flight operations procedures including:
 - flight planning, weather minimums, preflight risk assessment
- Discussed safety enhancing technology such as TAWS and NVIS
- Discussed training, including use of flight simulators
- Probed corporate and government oversight of HEMS operations

Executive Summary Posted on Web

What can we expect ?

- Possible recommendations that may include operations, equipment, oversight and training.

A paradigm shift is needed

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