



NTSB National Transportation Safety Board

EMS Helicopter Safety: Is it an Oxymoron ?

**Robert L. Sumwalt
October 20, 2008**

The perception:

“With 35 deaths so far, 2008 is the worst on record in the U.S. for accidents involving emergency medical helicopters—aircraft that experts describe as the most dangerous in the sky.”

“If the public were informed, no one would ever get on one of these medical aircraft.”

- Chicago Tribune, October 17, 2008

The reality:

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



However:

- Current HEMS accident record is unacceptable
- Improvements must be made
- HEMS community is part of the solution
 - Recognizes problems
 - Attentive and receptive to improvements



Fatal HEMS Accidents since 2007

AMTC

- Whittier, AK – Dec 3, 07 – BK117
- Cherokee, AL – Dec 30, 07 – Bell 206
- South Padre Island, TX – Feb 5, 08 – AS350
- La Crosse, WI – May 10, 08 – EC135
- Huntsville, TX – June 8, 08 – Bell 407
- Flagstaff, AZ – June 29, 08 – Bell 407s
- Greensburg, IN – Aug 31, 08 – Bell 206
- District Heights, MD – Sept 28, 2008 – AS365
- Aurora, IL – October 15, 2008 – Bell 222



Recent HEMS Accident Data

- In CY 2006 – 4 fatalities
- In CY 2007 – 7 fatalities
- So far this year – 28 fatalities



Recent HEMS accidents

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



United States Government Accountability Office
GAO
 Report to the Chairman, Subcommittee on Aviation, Committee on Transportation and Infrastructure, House of Representatives

February 2007

AVIATION SAFETY

Improved Data Collection Needed for Effective Oversight of Air Ambulance Industry

GAO
 Accountability • Integrity • Transparency

GAO-07-555

AeroSafety WORLD

CRITICAL CARE HELICOPTER SAFETY

October 2006 Serving the Worldwide Helicopter Industry rotorwing.com

rotorwing

Sorting Out NVG Rules, Ops
 Corporate Helicopters: Clear of Turbulence?

EMS: SPEED, SAFETY IN THE GOLDEN HOUR

Helicopter EMS, Part II: Urgent Compassion

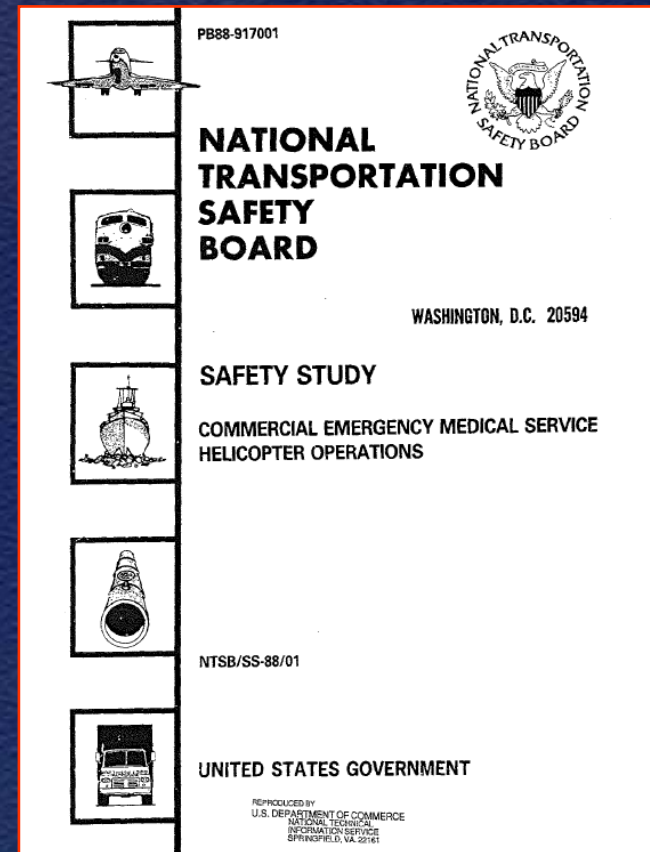
It's the soul and the pent of helicopter EMS.

By Patrick E. Tibbitts, Ph.D.

The rescue of a critically injured patient is a team effort. It's not just the pilot and the paramedic, but the entire crew. The helicopter is the only mode of transport that can reach the scene in a timely manner. The helicopter is the only mode of transport that can reach the scene in a timely manner. The helicopter is the only mode of transport that can reach the scene in a timely manner.

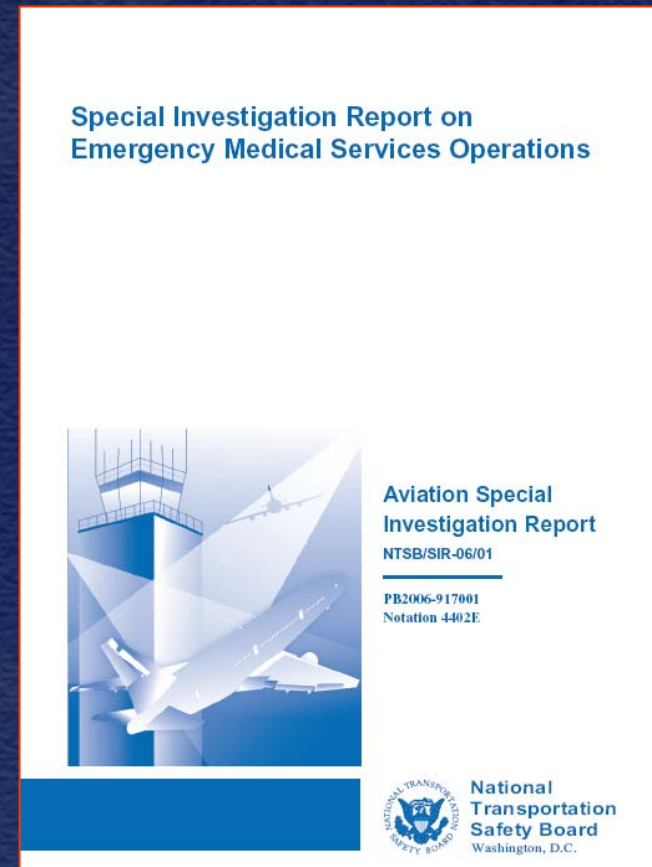
NTSB has longstanding concern of HEMS Safety

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



29 Accidents Could have been Prevented

5 Common Issues:

1. Part 135 Compliance
2. Aviation Dispatch
3. Flight Risk Evaluation
4. TAWS
5. NVIS

	Accident Number	Compliance with Part 135	Aviation Dispatcher	Flight Risk Evaluation	TAWS	NVIS
1.	DEN05FA051			✓		
2.	DEN05LA053	✓	✓	✓	✓	✓
3.	NYC05MA039				✓	
4.	ATL05FA038	✓	✓	✓		
5.	MIA05FA008		✓	✓	✓	
6.	DEN04LA149					✓
7.	SEA04MA167		✓	✓		
8.	CHI04MA182	✓	✓	✓		✓
9.	LAX04LA285					✓
10.	CHI04FA107				✓	✓
11.	FTW04FA097		✓	✓	✓	
12.	LAX04FA076	✓		✓	✓	✓
13.	NYC04CA049					✓
14.	ATL04LA055	✓	✓	✓	✓	
15.	FTW04LA069					✓
16.	CHI03LA319					✓
17.	CHI03LA084					✓
18.	FTW03LA112	✓	✓	✓	✓	
19.	FTW03FA082	✓	✓	✓	✓	
20.	SEA03LA019	✓	✓	✓	✓	
21.	CHI02FA288	✓	✓	✓	✓	✓
22.	LAX02FA276					✓
23.	MIA02FA161			✓		
24.	FTW02LA176				✓	✓
25.	LAX02FA114				✓	
26.	LAX05FA015				✓	
27.	CHI04FA066				✓	
28.	LAX04FA113	✓		✓	✓	
29.	DEN03LA053				✓	

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

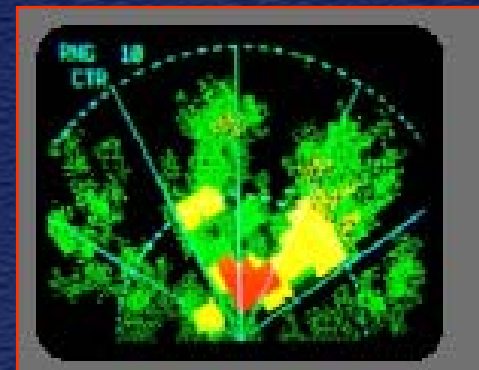
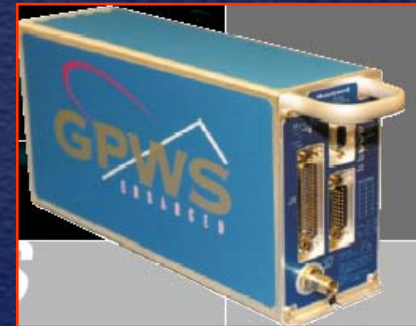
- “911” vs. “Flight” Dispatch
- Flight Dispatch can provide weather info, risk assessment, route info, flight following, etc.
- Many EMS operators lack flight dispatching procedures
- Dispatch may have prevented 11 of 55 accidents



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.

Status of Recommendations



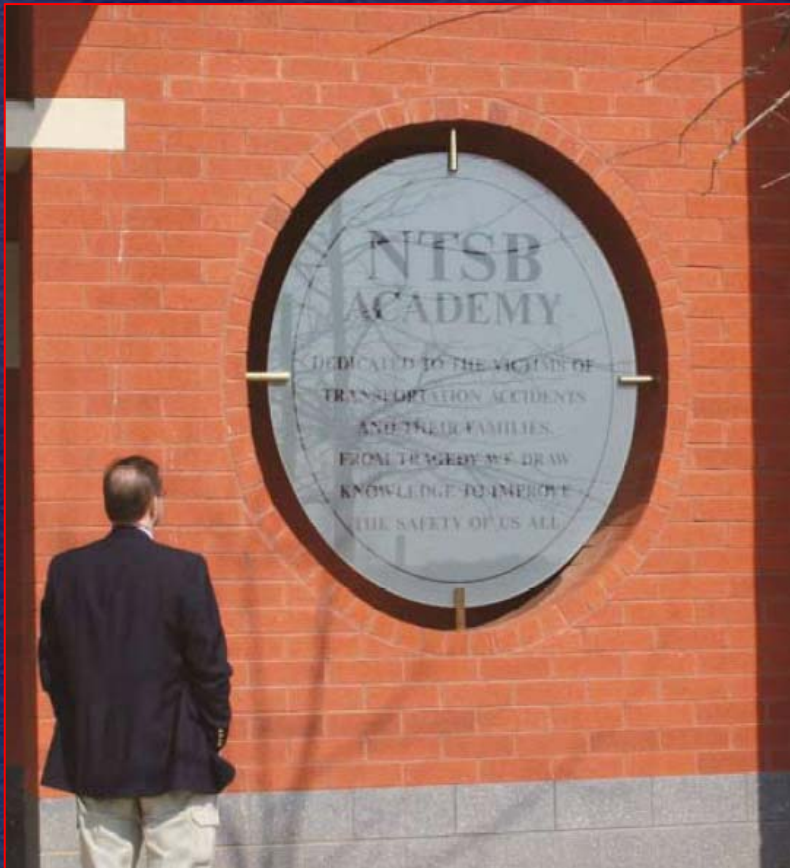
Possible Issues and Topics May Include:

- EMS Operations Organizational Structure
- Flight Operations and Technology
- Training
- FAA Oversight



Summary

- EMS helicopter safety is not an oxymoron
- HEMS safely transports nearly 400,000 patients each year
- Nevertheless, current accident record is unacceptable
- Steps must be taken to improve safety
- NTSB will hold a public hearing in early 2009
- HEMS community continues to play a vital role in the solution



“From tragedy we draw knowledge to improve the safety of us all.”



NTSB