NTSB National Transportation Safety Board

What the Trauma Community Can Do to Improve Aviation Safety of Air Ambulances

Robert L. Sumwalt
NTSB Board Member
November 12, 2010

Would you be willing to prescribe a medication when the side effects or contraindications of that medication were unknown?

Would you be willing to use an air ambulance when information about that operator's pilot training, aircraft equipment, or operations were unknown?

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Three main points

- The current Helicopter EMS (HEMS) accident record is unacceptable.
- Not all air ambulance operators are created equally from a safety perspective.
- As consumers of air ambulance transport, you can “up the ante” on how they operate.

NTSB

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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

49 weeks without a fatal HEMS accident

UNTIL . . .

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September 25, 2009
3 Fatalities

US HEMS accidents, Sep 1, 2009–Aug 31, 2010

Date	Location	Fatalities
Sep 22, 2009	Page AZ	none
Sep 24, 2009	Tucson AZ	none
Sep 25, 2009	Georgetown SC	3
Oct 22, 2009	Blythe CA	none
Nov 14, 2009	Doyle CA	3
Dec 25, 2009	Decatur TX	none
Jan 17, 2010	Reno NV	none
Feb 5, 2010	El Paso, TX	3
Feb 11, 2010	Cheverly MD	none
Mar 25, 2010	Brownsville TN	3
Jun 2, 2010	Midlothian TX	2
Jul 22, 2010	Kingfisher OK	2
Jul 28, 2010	Tucson AZ	3
Aug 31, 2010	Scotland AR	3

22 fatalities

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Recent HEMS accidents

- Have gotten the attention of U.S. 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

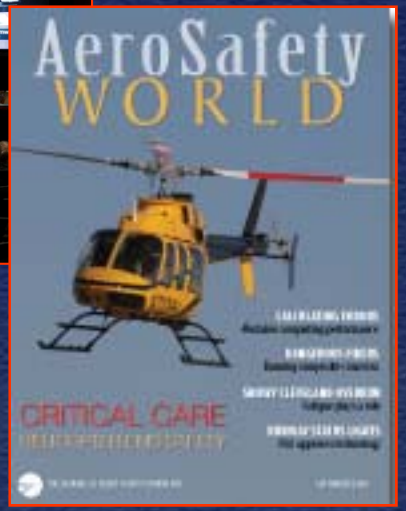
February 2007

AVIATION SAFETY

Improved Data Collection Needed for Effective Oversight of Air Ambulance Industry

GAO

GAO-07-353



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PB88-917001
NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C. 20594
SAFETY STUDY
COMMERCIAL EMERGENCY MEDICAL SERVICE HELICOPTER OPERATIONS
NTSB/SS-88/01
UNITED STATES GOVERNMENT
NTSB
MOST
WANTED LIST
Transportation Safety Improvements
2009 - 2010
Critical changes needed to reduce transportation accidents and save lives.
Special Investigation Report on Emergency Medical Services Operations
Aviation Special Investigation Report
NTSB/SIR-06/01
PB2006-917001
Notation 4402E
National Transportation Safety Board
Washington, D.C.

NTSB

NTSB Public Hearing on HEMS

Feb 3-6, 2009

- 21 NTSB safety recommendations emerged
  - Pilot training
  - Aircraft equipment
  - Airspace infrastructure
  - CMS reimbursement
  - HEMS utilization criteria

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Pilot training

- FAA should develop criteria for, and require, scenario-based training.
  - Training should include simulator and flight training devices.
  - Training should ensure instrument flying proficiency
    - training for inadvertent flight into clouds and/or low visibility.

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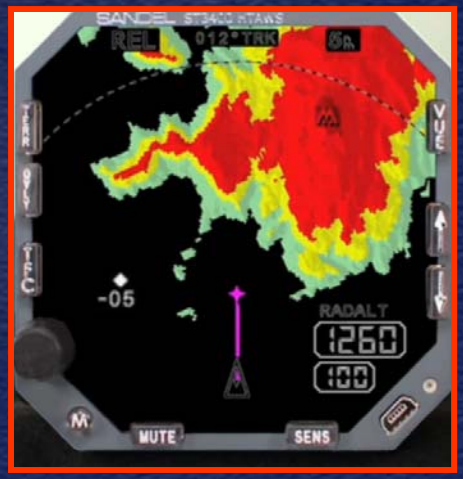
How are pilots that fly to/from your trauma center trained?

Aircraft equipment

FAA should:

- Require Helicopter Terrain Alerting and Warning Systems (H-TAWS).
- Require use of night vision imaging systems by pilots.
- Require an autopilot if a second pilot is not available.



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Are helicopters that use your trauma center equipped with:

H-TAWS

NVIS

Autopilots or two pilots

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Levels of Performance

- World class
  - Top 3 - 5 percent of the industry
  - Organization thrives in seeking to be the very best
- Best practices
  - Adopts and implements standards, procedures, equipment, and training above and beyond regulatory requirements
- Basic regulatory compliance
  - Meets spirit of regulations, but no higher
- Sub-standard performance
  - non-adherence to regulations, cutting corners are the norm

Adopted from Pete Agur

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Not all operations are the same …

Cost: $800k - $3 million
- Single engine, VFR
- Single pilot only
- Single patient only
- Limited access to patient for medical procedures
- Limited distance without refueling
- Limited weight carriage for medical equipment, fuel

Cost: $4-6 million
- Twin engine, IFR
- 2 pilot capability
- 2 patient capability
- Autopilot
- Longer range
- Climate control
- Full access to patient
- Higher critical care capability (e.g. balloon pumps, ventilation)

Cost: $7-12 million
- Twin engine, IFR
- 2 pilot capability
- Autopilot
- 2 patients, 4 medical personnel
- Climate Control
- Greatest distance capability without refueling
- Specialty transport capability (e.g. specialized pediatric)

…but Medicare reimbursement is the same.

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Not all operators are the same; Nor are all operations the same

- While carrying patients, HEMS flights must be conducted in accordance with FAA Part 135 regulations (charter flight regulations).
  - However, on flights without patients (positioning flights), they may operate under less stringent FAA Part 91.
  - Positioning flights usually carry medical personnel (i.e., your employees).

- NTSB notes that 35 of the 55 studied accidents occurred on positioning flights, under FAA Part 91.

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“Public” HEMS Operations

- 40 HEMS operators are government entities
  - i.e., National Park Service, Maryland State Police, LA County Fire Department
- FAA does not oversee “public” operations
- Few FAA requirements
- Not consistent with commercial (Part 135) HEMS operations

Maryland State Police Accident

4 fatalities, 1 serious injury

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To what level are helicopters using your trauma center operating?

World class

Best practices

Basic regulatory compliance

Sub-standard performance

NTSB

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What can you do?

- Take an active role in knowing who is flying patients to/from your trauma center
  - Know how their pilots are trained
    - Know if they have scenario-based simulator training
    - Know if they require instrument proficiency
  - Know if their helicopters are equipped with H-TAWS, NVIS, autopilot and/or second pilot

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What can you do?

- If your trauma center has a contractual arrangement with HEMS operators, is it written into their contracts that pilots must be trained and helicopters equipped per NTSB recommendations?

What are the legal and moral obligations of simply deferring to the operator to do these things, instead of your ensuring it contractually?

Something to think about:

Source: Ira Blumen, MD

May 10, 2008

September 25, 2009

What are you doing to ensure that HEMS operators using your trauma center are operating to the highest levels?

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