National Transportation Safety Board

Awareness of Helicopter Crashworthiness Standards

Crashworthiness presentation

Air Methods

Background

- AS350-series helicopter crashworthiness design based on December 1977 type certificate date
- Accident helicopter manufactured in March 2013

FAA Crashworthiness Standards

- 1989 Emergency landing standards
  - Increased load factors, including downward load from 4 to 20 G
  - Added dynamic test requirements
- 1994 Fuel system crash resistance
- Improved standards not retroactive

Accident Helicopter


Summit Medical Center

- Not equipped with crash-resistant fuel system
  - Fuel-fed postcrash fire
- Medical crew seats did not meet improved requirements for energy-absorbing seats
  - Pilot seat met improved requirements

US Helicopter Fleet

- About 10% of US helicopters met 1989 improved emergency landing standards
- About 15% of US helicopters had fuel system that met 1994 crash standards

Note: Information based on data from FAA and NTSB as of 2014.

Crashworthiness Awareness

- Aviation experts
  - Aware that most newly manufactured helicopters not equipped with crash-resistant fuel system or energy-absorbing seats
- Limited aviation background
  - Unaware that most newly manufactured helicopters not required to meet improved crashworthiness standards

Crashworthiness Awareness

- Distinction between type certification date and manufacture date not clear
- No guidelines about availability of crashworthiness systems to improve survivability

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