Awareness of Helicopter Crashworthiness Standards

Crashworthiness presentation
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

- 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