NATIONAL TRANSPORTATION SAFETY BOARD

Washington D.C.

Helicopter Association International Presentation
on Industry Safety Initiatives

(37 pages)
Helicopter Association International

• Established 1948

• The professional trade association for the International helicopter community

• 1,575 member organizations
• 1,200 individual members
• in 78 countries

• HAI Members operate over 5,000 helicopters and fly nearly 2.3 million hours each year
HAI SAFETY POLICY

• Safety As a First Priority

• Safety Above All Else

• Fly To a Higher Standard
REDUCE THE INTERNATIONAL HELICOPTER ACCIDENT RATE BY 80 % OVER THE NEXT 10 YEARS
IHST Regional Developments

- 1st Regional Conference held in New Delhi in June 2006
- JHSAT process workshop in New Delhi in March 2007
- 2nd Regional Conference held in Melbourne, Australia in March 2007
- Latin American Regional Conference held in Brazil in June 2007
- Canadian and EU JHSATs operational

IHST Conferences:

- Germany May 2008
- Europe September 2008
- Portugal October 2008
- Middle East November 2008
- Far East April 2009
- Russia May 2009
- Africa September 2009
Worldwide Helicopter Accidents per Year
1991 to 2005

Source - Bell Helicopter
Worldwide Fleet Distribution by Country
26,365 Aircraft Total

- United States: 13,217 (50.1%)
- Others: 3,869 (14.7%)
- Japan: 786 (3.0%)
- Italy: 693 (2.6%)
- New Zealand: 657 (2.5%)
- Mexico: 343 (1.3%)
- Canada: 1,887 (7.2%)
- Brazil: 447 (1.7%)
- South Africa: 577 (2.2%)
- Germany: 700 (2.7%)
- France: 701 (2.7%)
- England: 1,186 (4.5%)
- Others: 3,869 (14.7%)

Total: 26,365
Factors That Led To Breakthroughs in Major Airline Fatal Accident Rates Since 1946

- Pressurized Aircraft into fleet
- Earliest ILS (Glide slope, LOC & markers)
- Broad implementation of VOR and DME
- Radar introduced at selected towers
- ATC centers RADAR and radio contact with cruise aircraft 1949-55
- Long-Range radar (Centers)
- Jet Engine 1958
- VOR/DME integrated into autopilot (precision approaches)
- Secondary radar
- RNAV (processing VOR/DME & basic Instruments)
- GPWS, TCAS; Early automation
- FMS
- CRM & 6-Axis Simulator & FDR Windshear Cabin Safety
- FOQA/ASAP & ATC Data
- RJ Revolution
- New Large Jets
- Cooperative safety Agenda
Example of Potential Breakthroughs in Helicopter Accident Rates

- Introduction of a scalable SMS tool?
- Insurance safety incentives?
- NVG utilization & HTAWS?
- ADS-B implementation?
- All IFR Ops?
Progressing Toward the 80% Goal

US Fleet Data

Trend projection if no action taken

~760 Accidents Avoided
~372 Fatalities/Serious Injuries Avoided

Source: Bell Worldwide Database
Progressing Toward the 80% Goal

Worldwide Fleet Data

Trend projection if no action taken

~1694 Accidents Avoided
~1132 Fatalities/Serious Injuries Avoided

source: Bell Worldwide Database
IHST
A Three-Stage Process

Data Analysis
Agree on problems and interventions

Set Safety Priorities
Achieve consensus on priorities

Implement Safety Enhancements - U.S.
Influence Safety Enhancements - Worldwide
Integrate into existing work and distribute
Percent of Accidents in which Problem Categories were identified at least once

- Pilot Judgement and Actions
- Data Issues
- Safety Culture
- Ground Duties
- Pilot Situational Awareness
- Maintenance
- Part/System Failure
- Post Crash
- Survivability
- Mission Risk
- Communications
- Regulatory
- System & Equipment
- Infrastructure
- Ground Personnel
Int’l Helicopter Safety Symposium 2007

- Montreal - September 19–21, 2009  300 + Attendees

Program

- Joint Helicopter Safety Analysis Team report
- Joint Helicopter Safety Implementation Team progress update and SMS workshop

- Manufacturer and operator presentations

- Concurrent papers:
  - Safety and survivability equipment
  - Safety culture
  - Training

IHSS – September 2009 - Montreal
Safety Management System Toolkit

Edition 1

Compiled by the Joint Helicopter Safety Implementation Team (JHSIT)
an organization of theInternational Helicopter Safety Team (IHST)
Pathways to the Operating Community

HAI / AHS Associations  Maintainers  Trainers  FAA / NTSB

Insurance Industry  Financial Institutions

Emphasis on 1 to 5 ship operators
Safety Culture

EVERYONE HAS TO BE INVOLVED & AWARE
**IHST Summary**

- Via a worldwide effort a structured approach will be used to manage the analytical and implementation work sponsored by the IHST.

- All recommendations will be data driven.

- Country data is owned, analyzed and implemented by the teams most familiar with local needs.

- U.S. JHSAT and JHSIT lead teams responsible for training/advising regional teams, while monitoring the results of the safety recommendations and implementation effectiveness.

- European representative added to Executive Committee
- JHSIT SMS toolkit available free, online.
- EHEST/EHSAT building on North American work
- Groups in Australia, Brazil and India committed to support the IHST
Helicopter Operating Environment

- Single & Multiengine Ops
- VFR / IFR Operations
- Urban vs. rural vs. offshore
- 1 aircraft to 300 aircraft fleets
- Commercial / private / public
Multiple Mission Profiles

Corporate
Aerial Applications
Utilities Patrol
Aerial Firefighting
Air Taxi
ENG
Law Enforcement
Aerial Photography
Firefighting
Search and Rescue
Homeland Security
Traffic reporting

Air Tours
Instruction / Training
Construction
Mineral Exploration
Environmental patrol
HEMS
Logging
Schedule Airline service
Customs
HEMS
Department of Defense (Military)
Courier / Cargo
HEMS Specific Considerations

1. Off Airport Operations
2. Low Altitude Environment
3. Remote Locations
4. Outside Normal Aviation Infrastructure
5. Challenging Operating Environments
6. No previous operations at site locations
7. Minimal notice of flight requirement
8. Daily / 24 hour - Day / Night – VFR / IFR
Technology - Important part of the solution

- Helicopter Terrain Avoidance Warning System
- Enhanced Ground Proximity Warning System
- Health Usage Monitoring System
- Automatic Dependent System Broadcast
- GPS / WAAS enhanced

BUT NOT THE TOTAL SOLUTION
There is no magic bullet.

**Previous fatal accidents have involved**

- Twin engine IFR aircraft
- Autopilot equipped
- Two pilot IFR qualified crew
- VFR operations
- Advanced cockpit
- Familiar operating environment
Human Factors - Critical Area of Focus

- Risk Assessment
- Decision Making
- Perceived or real pressures on operations
- Safety Culture
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Cooperative Industry Development of Comments in Response to FAA NPRM - OP Spec A-021 & A-050

A. Increase in Weather Minima
B. Enhance Pre Flight planning
C. Promotion of IFR flight
D. Promotion of NVG / HTAWS use

NOTE: HAI / FAA Regional HEMS Safety Seminars to be scheduled within next 3 Months
HAI / AAMS / AMOA Initiatives

- Night Vision Goggles / Enhanced Vision Systems for night VFR HEMS Operations
- Congressional funding via A.I.P. program for infrastructure improvement dedicated to HEMS operating environment
- Application of HEMS criteria to Government operators (public use)
- Develop dedicated low level helicopter IFR Infrastructure
- Utilization of FDR / CVR / Video capture devices or related technology for accident investigation and FOQA programs
HAI / AAMS / AMOA Initiatives

- Elimination of launch / response time requirements
- Prioritized ADS-B implementation for HEMS environment
- Formalized multiple flight request protocols – Helicopter shopping
- Review of fatigue factors within the HEMS work model
- Industry, Agency coordination with the International Helicopter Safety Team relative to Data driven accident analysis and a focus on the role of human factors in helicopter accident causation.
HAI / Industry Initiatives

- Non punitive safety reporting environments
- Implementation of Safety Management Systems
- Management oversight of Risk Assessment activities
- Acknowledgement of risk aversion, not risk exposure
- Client education program and forums
- Sales & marketing of safety to operators and clients
- Safety initiatives appropriate to specific operating environment and mission
- Consideration of retrofit capability to existing fleet
- Development of end user / client educational DVD
**HAI / Industry Initiatives**

- HEMS specific mission training – use of simulators / FTD

- Accurate flight hour data to facilitate actual helicopter accident rates

- Dedicated Helicopter Low level IFR routes, point in space and precision instrument approaches to heliports & scenes, to provide seamless transition in and out of the IFR system for helicopters

  Provide Pilots / Maintenance Technicians with sterile operating environment limited to aeronautical / airworthiness decision making considerations – free of 3rd party, non relevant influence and pressures

- Change the cultural mindset of relevant parties, so that daily decision making places safety as the primary consideration above all else.
HAI / Industry Initiatives

- HEMS risk assessment / Decision making same as other mission protocols
- Separation of pilots from medical / patient information prior to departure
- Local Pre-established HEMS helistops
- Formalized Operational Control Agreements with clients.
- Formalized, structured dispatch / communication procedures
Safety is not a slogan

It requires

Passion and Commitment
Matt Zuccaro – President  HAI / Co-Chair IHST

HAI OFFICE:  703-683-4646

E-MAIL:  TAILROTOR@AOL.COM

HAI WEBPAGE:  WWW.ROTOR.COM

IHST WEBPAGE:  WWW.IHST.ORG
Questions?