Safe helicopter operations in aerial fire fighting

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Different models for Fire Fighting

- State operations
  The State assumes and regulates fire fighting and the operation has legal cover; crew is acting under State umbrella.

- Hiring private operators
  State hires civil operators which operate under AOC, under some authorizations or under AWC as Poland, and crews are recruited under normal labor contract.
  State publishes some operational exceptions through an “agreement operational letter” for special operations as fire fighting that allows no FPL, no minimum flight altitudes and to drop water and products, only this.
Kind of Helicopter missions when Fire fighting

- Firemen Transportation
- Water drop
- Aerial coordination
Why Aerial coordination?

- To guarantee safety in the area
- To improve fire fighting efficiency
- To organise drops and air traffic
- To give aerial picture to ground
- And to avoid this......
EHEST is the helicopter component of ESSI and the European branch of IHST

Essi
European Strategic Safety Initiative

IHST
International Helicopter Safety Team

Goal:
To reduce the helicopter accident rate by 80% by 2016

European Helicopter Safety Team
EHEST

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Example of Fire Fighting accident scenario

- The helicopter was operating in fire fighting mission, dropping water using a bambi bucket system.
- The pilot had already performed 8 runs.
- After the 9th water drop and when the helicopter was in a turn, the tail rotor hit a wire.
- The pilot performed an emergency landing. The helicopter was substantially damaged and the pilot received serious injuries.
Example of Fire Fighting accident scenario

- The helicopter was operating in fire fighting mission, dropping water using a bambi bucket system. **Repetitive tasks in short time**
- The pilot had already performed 8 runs. **Restricted visibility**
- After the 9th water drop and when the helicopter was in a turn, the tail rotor hit a wire. **Pressure**
- The pilot performed an emergency landing. **Distracted**
- The helicopter sustained substantial damage and the pilot received minor injuries. **Unsuitable area for emergency landing**

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% of Accidents were SPS level 1 has been identified at least once
EHSAT Database, Type of Operation Aerial Work - Fire Fighting

- Mission Risk: 87%
- Safety Management: 87%
- Pilot judgment & actions: 73%
- Regulatory: 60%
- Data issues: 47%
- Ground duties: 33%
- Maintenance: 27%
- Post crash survival: 20%
- Part/System Failure: 20%
- Pilot situation awareness: 20%
- Aircraft Design: 7%
Intervention Recommendations level 1 Statement Counts
EHSAT database, Type of Operation Aerial Work - Fire Fighting

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Example of areas identified for IRs for Fire Fighting (not prioritised)

- Best practices for landing site selection
- Promotion of safety culture
- Risk assessment training
- Improvement of flight procedure training and mission specific training
- Certification of surplus aircraft
- Personal safety equipment such as helmets
- Compliance with SOP
- Investigation: Data/information issues
Hazards and issues

- Mission risk - Hostile environment
- Different types of aircraft are operating in a small area
- Different professionals working in the same mission
- Pressure
- Lack of standard operational procedures for mission
- Other issues (heliports, fatigue)
SEPLA’s mitigation proposals

- Establish fire fighting operational rules
- Establish a fire fighting rate
- Improve instruction and training on mission
- Comply with rest periods and max duty time as EU 79/2000
- Operators must establish a real Safety Department, SMS
- Improve operational fire fighting oversight by NAAs
References

- EHEST: EHEST@easa.europa.eu
- SEPLA’s Fire Fighting rate proposal request: heliaep@sepla.es
- Operational fire fighting procedures:
- Air coordination on fire fighting course request: copac@copac.es
Thank you for your attention
Questions?

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