

Key Risk Area: *Airborne / Post crash fires*

Risk Information

- SPI 2 Graph
- Top Ten Worldwide Fatal Accident consequences 1997 to 2006
- UK High-Risk Events

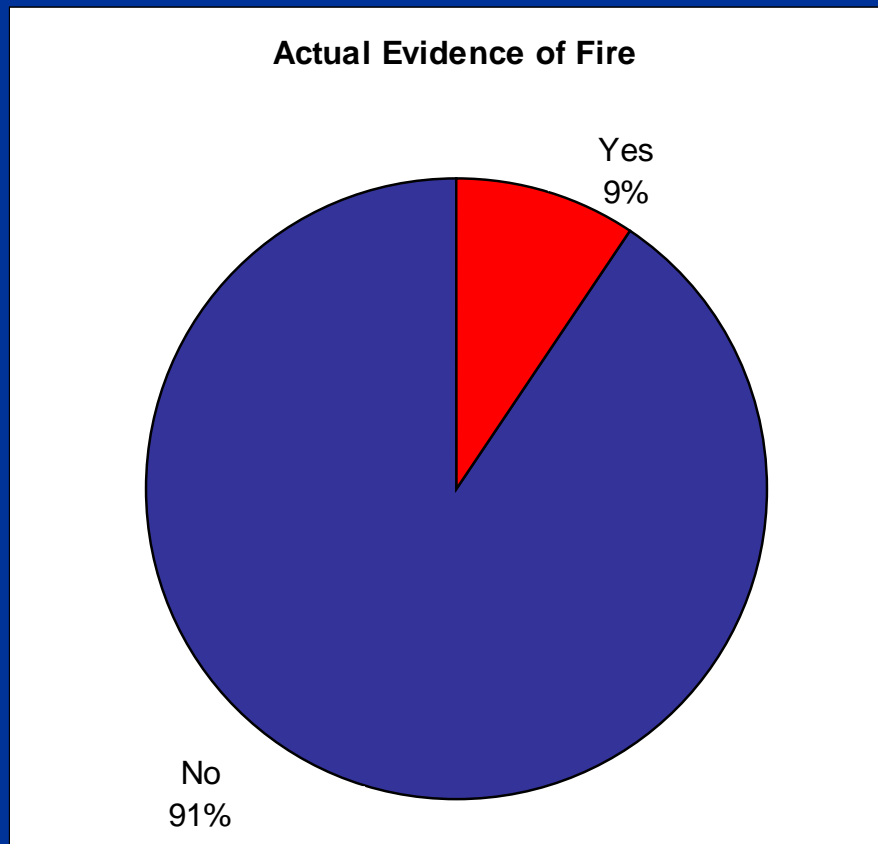
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Risk Information: MOR Database Fire/Smoke Events During Flight

- 1999-2008;
- Aeroplanes above 5,700 kg MTWA;
- UK Registered or Operated Aircraft;
- UK Licensed Aerodromes;
- **2,720 occurrences**

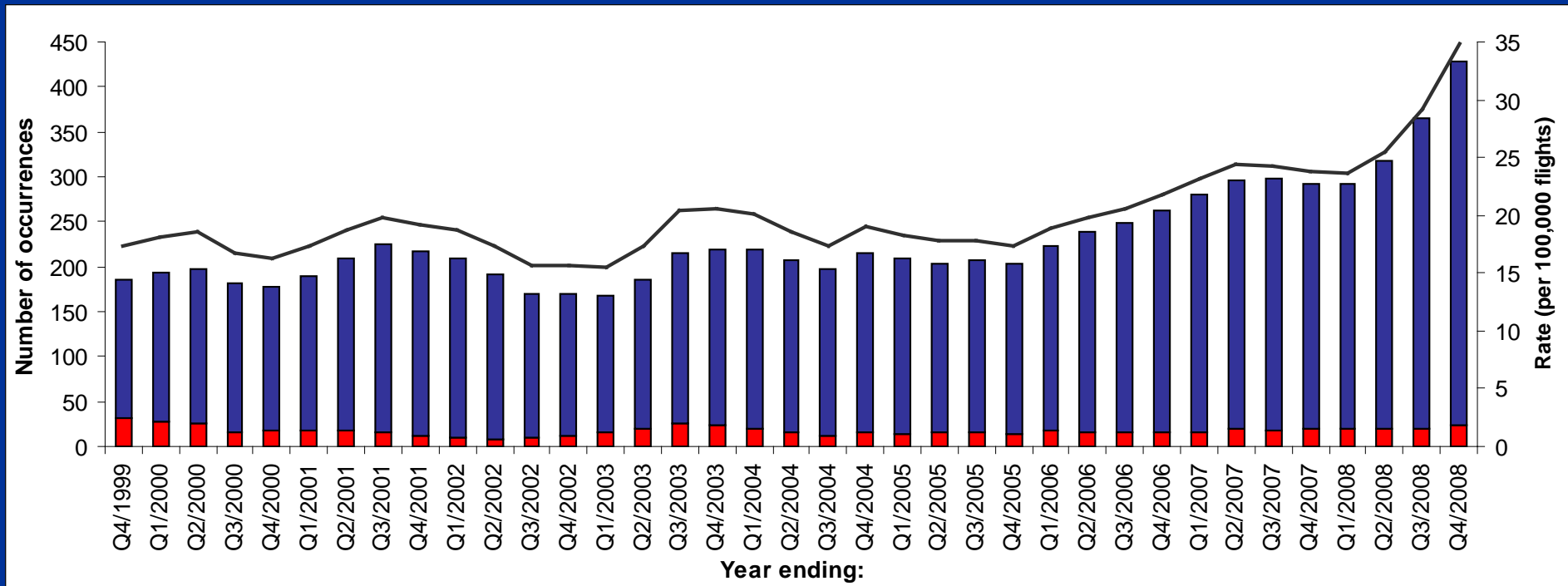
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2,720 occurrences, but how many fires?



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Rate of public transport occurrences 1999-2008

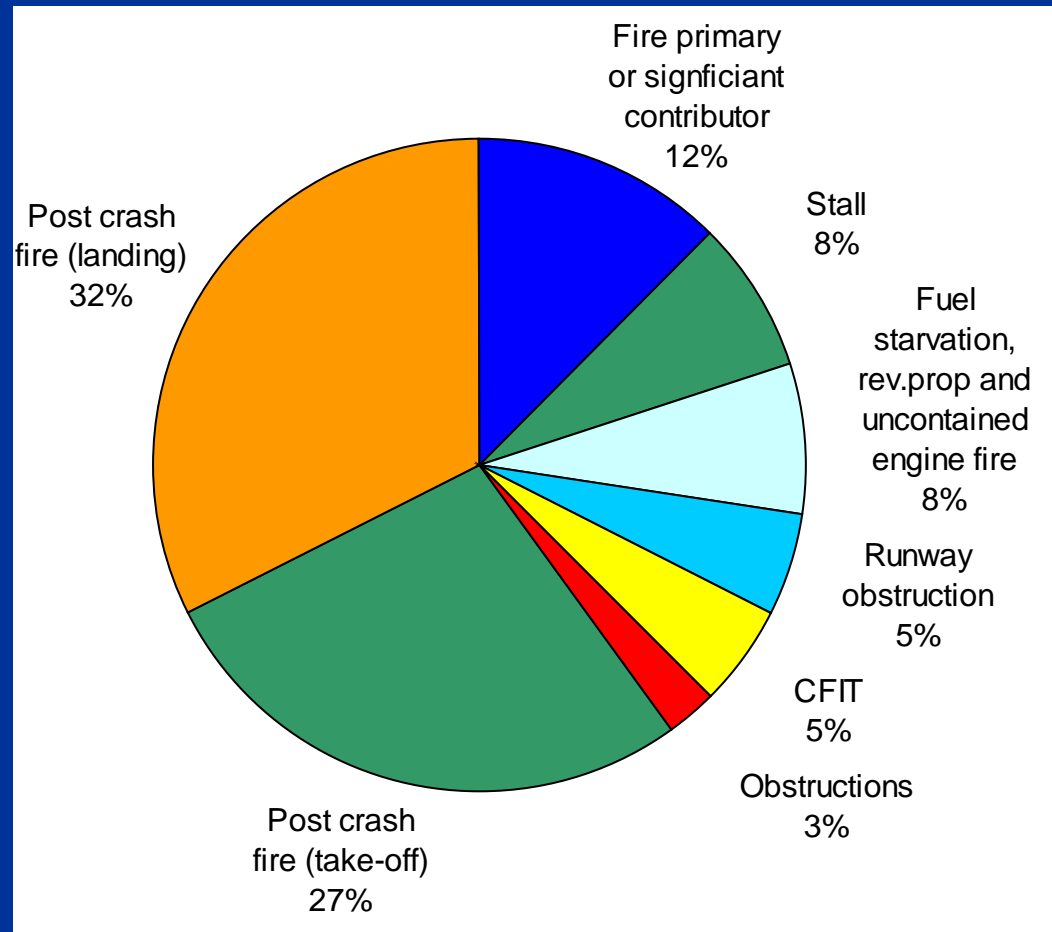


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Actions

- Task Force review of worldwide fatal accidents database where the cause was attributed to fire
 - Aeroplanes >5,700Kg MTOW
 - All types except government
 - “Normal cause” accident (i.e not violence or sabotage)
- There are a total of 40 accidents

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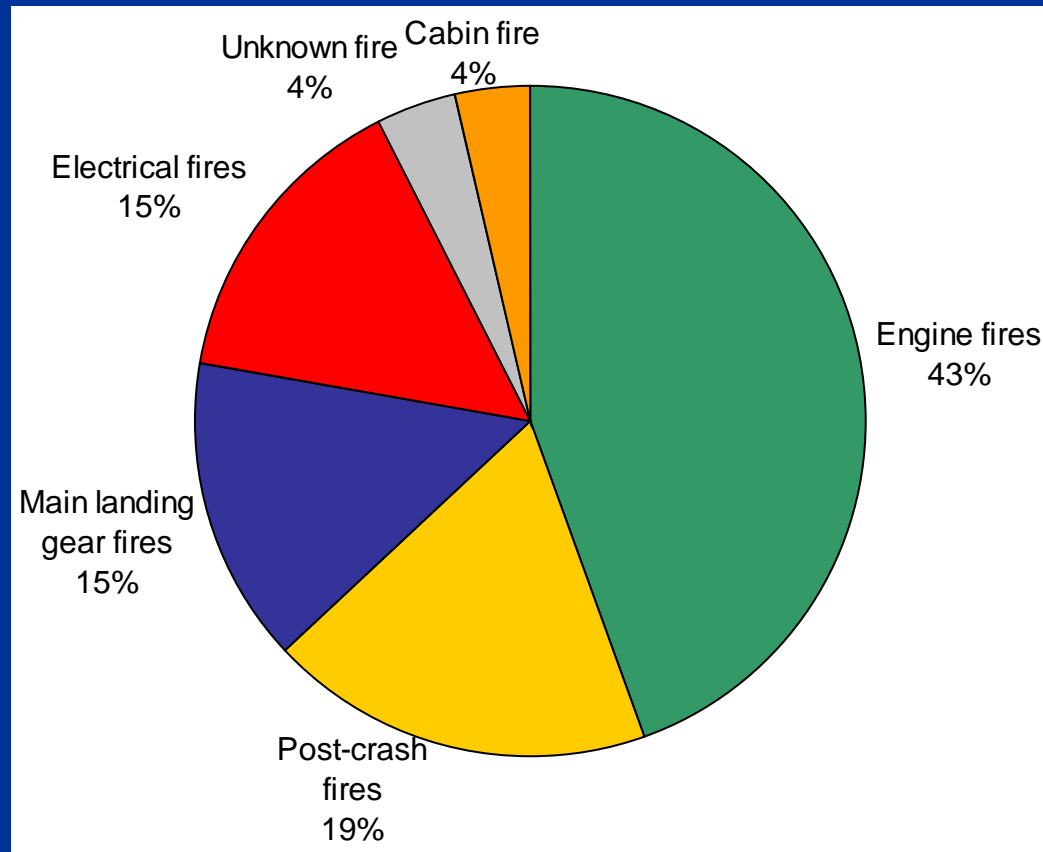


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Actions

- UK Grade A and B MORs between Jan 1999 to Dec 2008
 - Includes reportable accidents, serious incidents
 - UK Public transport or UK Licensed Aerodrome
 - Fire confirmed in narrative or MOR coding includes “fire”

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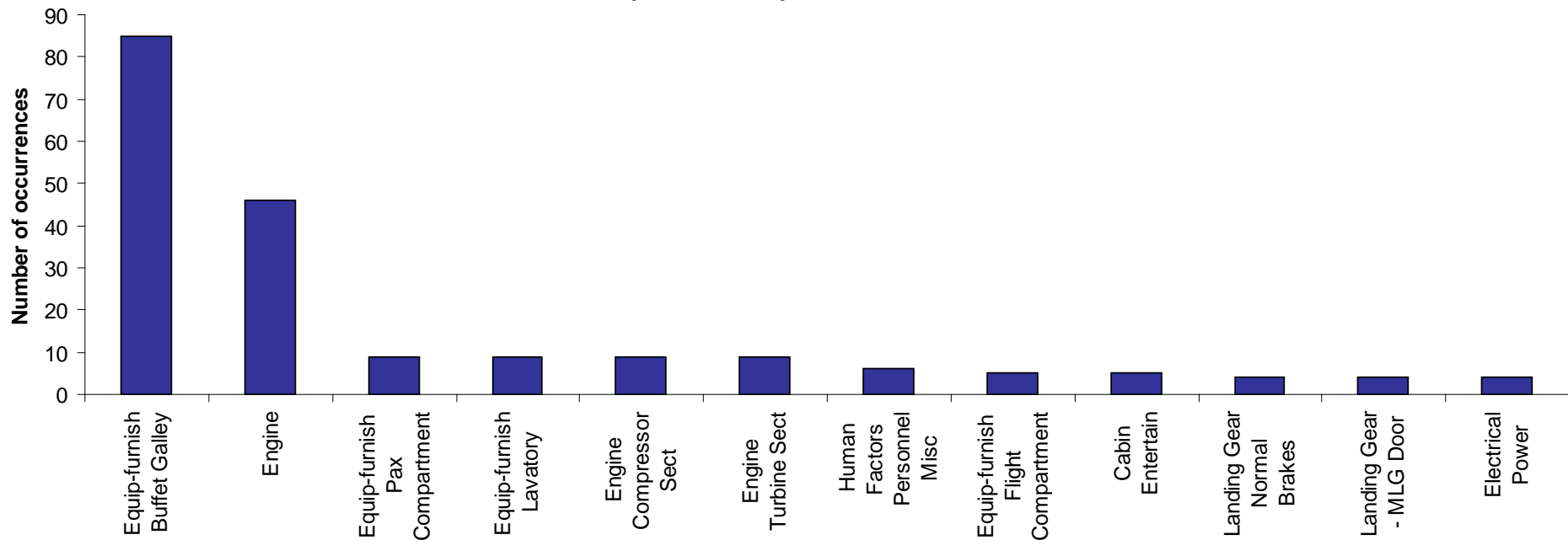
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Actions

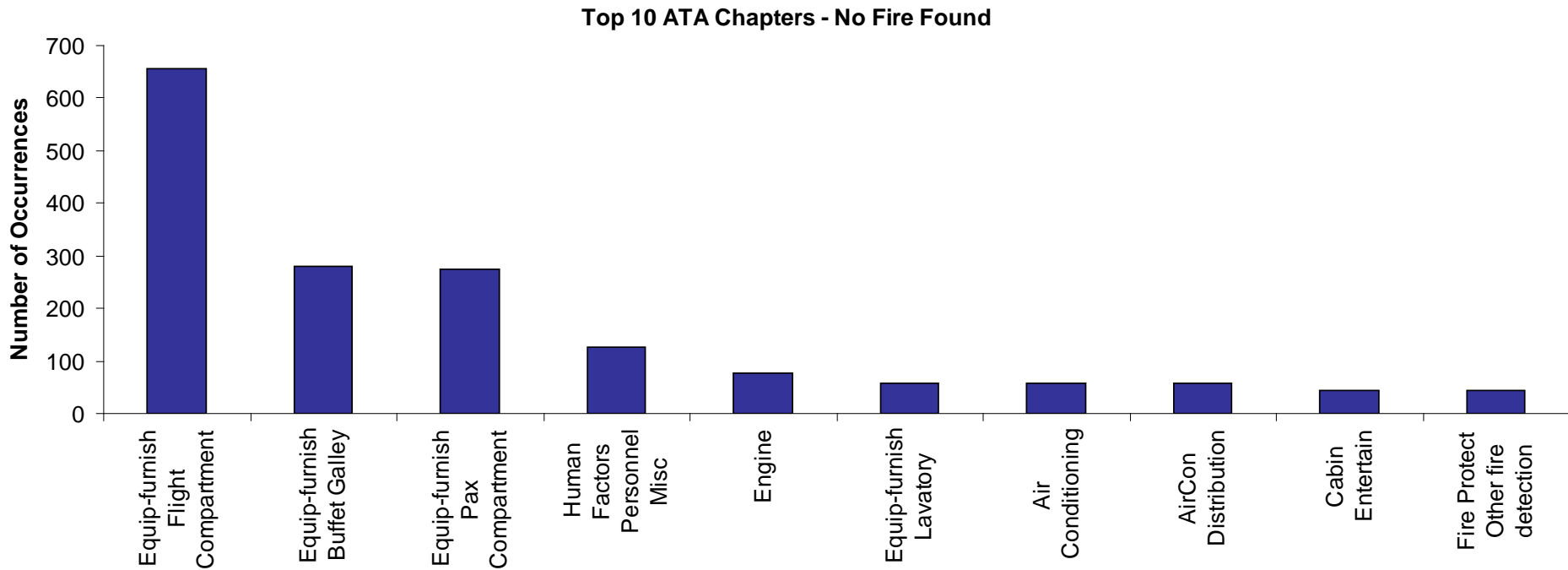
- Analysis of all MORs involving fires 1999 to 2008.
 - Cabin
 - Galley
 - Toilets
 - Electrical
 - IFE
 - Windshield
 - Light units
 - MLG, wiring
 - Engine

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Top 10 ATA Chapters - Fire Found



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Actions

➤ Research

- Royal Aeronautical Society / Guild of Airline Pilots and Navigators
- Air Line Pilots Association (ALPA)
- FAA Technical Centre (\$80M)
- Aerospace manufactures
- AAIB & NTSB
- CAA – Paper 2009/01

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Actions

- Worldwide Post crash fires
 - Frequent consequence of an accident
 - Time taken to arrive at the accident site is a crucial factor in survivability
 - In only 50 % of accidents do fire fighting resources arrive within 4 minutes
- UK Perspective
 - Implications for Aerodromes
 - Majority of post crash fires occur in the immediate vicinity of an aerodrome.
 - In over 65% of the incidents reviewed access and local response arrangements played a part.
 - UK and Europe have well developed civil protection arrangements and emergency management planning between aerodrome and local emergency responders.
 - CAP 168 sets out the UK emergency planning requirements

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Future Actions for Consideration

- Support and participate in international working groups to promote and be involved with fire prevention. Cooperation and working together.
- Recommendations of the Cabin Crew Fire Training Study
 - Enhance guidance material in CAP 768

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Future Actions for Consideration

- Safety Improvement Projects for In-flight Fire
 - to assess the cost benefit of electronic instruments to differentiate between air contaminates, fumes smoke etc.
 - to investigate the technical options for cabin, hidden area fire detection using thermal imaging cameras in conjunction with image processing systems.
 - to review fire fighting equipment and possible use of fire ports for the discharge of extinguishant into hidden areas.
 - to collaborate with other interested parties in defining acceptable levels of contamination in hidden areas
 - to review the latest understanding of the lightning environment, particularly significant for composite aircraft type.

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Future Actions for Consideration

- Safety Improvement Projects for Post Crash Fire Fighting
 - to continue work with Transport Canada on the development on improved fire fighting foams.
 - to review the latest work on fires in composite structures, so the CAA can consider issuing guidance to fire fighters and aerodromes.
 - To work with other agencies to ensure passengers with reduced mobility have their needs fully considered to the latest disability standards.

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Performance Indicator

- Safety Performance indicators (SPI's)
- Fires
 - Cabin – Galley / Toilet
 - Electrical – IFE, Wiring, lighting
 - Portable electronic devices www.fire.tc.faa.gov
 - Uncontained engine fires
- Smoke
 - 2,700 MOR's that relate to smoke events, SPI's to be considered for smoke events after further analysis.

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Questions?