



Transportation
Safety Board
of Canada

Bureau de la sécurité
des transports
du Canada



Presentation to IASS 2018

Kathy Fox

Chair, Transportation Safety Board of Canada

13 November 2018 Seattle, WA

Canada

Outline

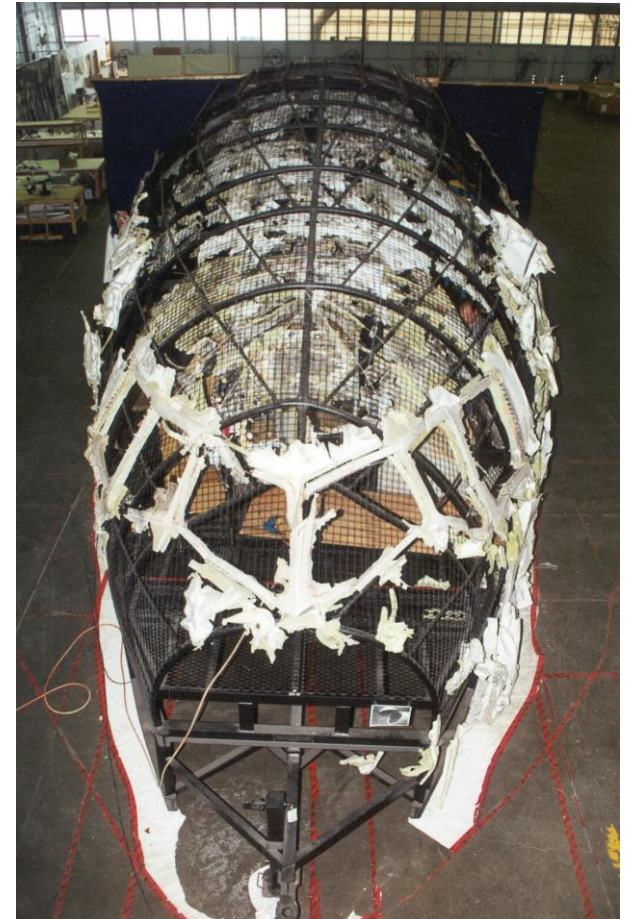
- Swissair accident recap
- The investigation
- Key TSB recommendations
- Progress and “scorecard”
- Watchlist 2018



The accident



The investigation: recovery



The investigation: analysis



Influences on crew decision-making

- No built-in smoke- and fire-detection-and-suppression devices
- Reliance on sight and smell to detect and differentiate between odour or smoke from different potential sources
- Pilots made a timely decision to divert
- Time required to complete an approach and landing to Halifax would have exceeded the time available



The investigation: recommendations

- on-board recorders
- circuit breaker resetting procedures
- the supplemental type certification process
- material flammability
- in-flight firefighting



Material flammability

- Thermal-acoustic insulation with MPET covering is no longer manufactured or used in aircraft construction or maintenance.
- Enhanced regulations and standards are now in place to validate different types of insulation materials.
- But ... we also recommended more rigorous testing for ALL existing insulation materials and wiring. And it's here that there has been less progress.



In-flight firefighting

- Crews must now prepare to land the aircraft without delay when smoke or fire is detected.
- Industry-wide guidance material was developed on more effective smoke and fire cockpit checklist procedures.
- But ... a systematic approach towards in-flight fires must still be developed to reduce residual risk.



On-board recordings



Progress

- 2008: new FAA regulations on CVRs
- 2010: ICAO harmonized the international treatment of cockpit voice and image recorders
- Today: Canada *still* does not meet international standards when it comes to recorders



Recommendation “scorecard”

Of the **23 recommendations** to emerge from Swissair

- **9** have been assessed as **Fully satisfactory**
- **9** have been assessed as **Satisfactory in part**
- **2** have been assessed as **Satisfactory intent**
- **2** have been assessed as **Unsatisfactory**
- **1 ... unable to assess**



Watchlist 2018





Runway overruns

Runway overrun accidents sometimes occur during landings or rejected takeoffs. The consequences can be particularly serious when there is no adequate runway end safety area (RESA) or suitable arresting material.

ACTIONS REQUIRED

- Conduct formal runway-specific risk assessments and take appropriate action to mitigate risks of overrun.
- Transport Canada must adopt at least the International Civil Aviation Organization standard for RESAs, or a means of stopping aircraft that provides an equivalent level of safety.





Risk of collisions from runway incursions

Runway incursions lead to an ongoing risk of aircraft colliding with vehicles or other aircraft at Canadian airports.

ACTIONS REQUIRED

- Continued collaboration and development of tailored solutions to identified hazards at Canadian airports.
- Modern technical solutions should also be implemented.
- These actions must lead to a sustained reduction in the rate of runway incursions, particularly the most severe ones.





Fatigue management – Aviation sector

ACTIONS REQUIRED

Transport Canada must

- publish revised flight and duty-time limitation regulations.

Canadian air operators need to

- implement fatigue risk management systems to address fatigue-related risks specific to their operation.





Safety management and oversight

Some transportation operators are not managing their safety risks effectively, and many companies are still not required to have formal safety management processes in place. Transport Canada's oversight and intervention are not always effective at changing unsafe operating practices.

ACTIONS REQUIRED

Transport Canada must

- Require all commercial operators in the air and marine industries to have formal safety management processes, and oversee these processes effectively.
- Ensure transportation operators that do have a safety management system demonstrate to Transport Canada that it is working.
- Intervene when operators are unable to manage safety effectively.





Slow progress on addressing TSB recommendations

Actions taken to fix some long-standing, high-risk safety deficiencies in the air, marine, and rail modes of transportation have been too few and too slow.

ACTIONS REQUIRED

- Address recommendations that would bring Canada in line with international standards.
- Reduce the remaining outstanding recommendations for which the regulator has indicated its agreement.
- Provide information to assess residual risk so that old recommendations can be closed.
- Review and improve interdepartmental processes for expedited implementation of safety recommendations.



Conclusions





@TSBCanada



TSBCanada

communications@tsb.gc.ca

WWW.TSB.GC.CA



Transportation
Safety Board
of Canada

Bureau de la sécurité
des transports
du Canada

QUESTIONS?



Canada

