



Transportation
Safety Board
of Canada

Bureau de la sécurité
des transports
du Canada



Presentation to AQTA AQTA CONGRÈS 2014

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Canada

Outline

- About the TSB
- Safety management systems (SMS)
- Lightweight flight data recorders
- Changes to TSB regulations
- Conclusions



TSB: Our Mission

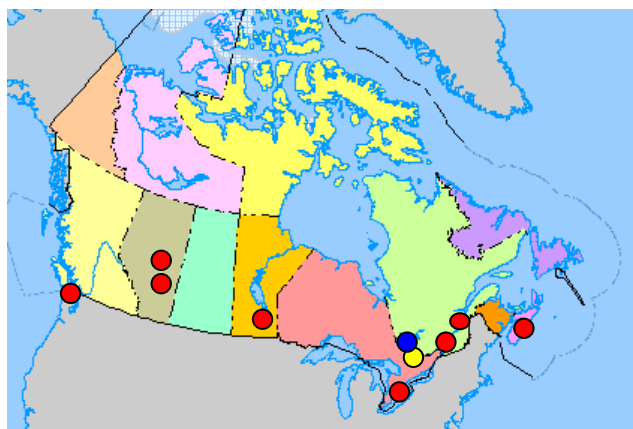
To advance transportation safety in the air, marine, rail and pipeline modes of transportation that are under federal jurisdiction by:

- conducting independent investigations
- identifying safety deficiencies
- identifying causes and contributing factors
- making recommendations
- publishing reports



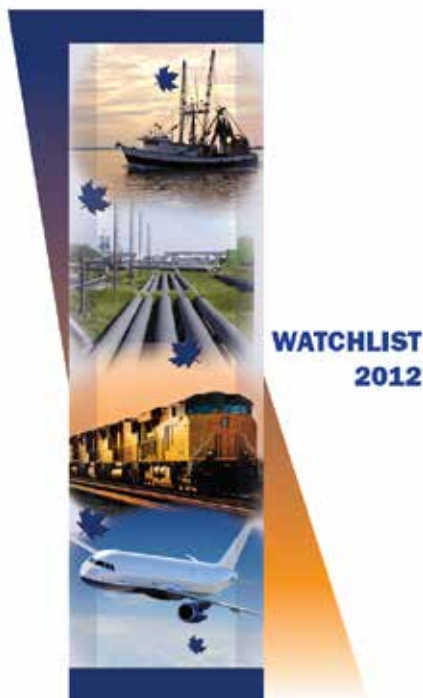
TSB Offices

- Head Office is in Gatineau, Quebec
- The Engineering Laboratory is in Ottawa, Ontario
- Regional offices are located across the country to allow investigators to quickly reach the scene of an accident:



- Vancouver, British Columbia
- Calgary, Alberta
- Edmonton, Alberta
- Winnipeg, Manitoba
- Toronto, Ontario
- Montréal, Quebec
- Québec, Quebec
- Halifax, Nova Scotia

TSB Watchlist



Canada

Marine

- Safety management systems
- Loss of life on fishing vessels

Air

- Collisions with land and water
- **Safety management systems**
- Landing accidents and runway overruns
- Risk of collisions on runways

Rail

- On-board video and voice recorders
- Following signal indications
- Passenger trains colliding with vehicles



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Safety Management Systems (SMS)

SMS integrates safety into all daily activities.

“It is a systematic, explicit, and comprehensive process for managing safety risks ... it becomes part of that organization’s culture, and [part] of the way people go about their work.”



Balancing competing priorities



SMS requires the following:



SMS: Key ideas

- “Mindful infrastructure”
 - Effective Safety Management depends on “culture” and “process”
- Organizational accountability is key
- Effective regulatory oversight is essential
- Success takes commitment, perseverance, and time



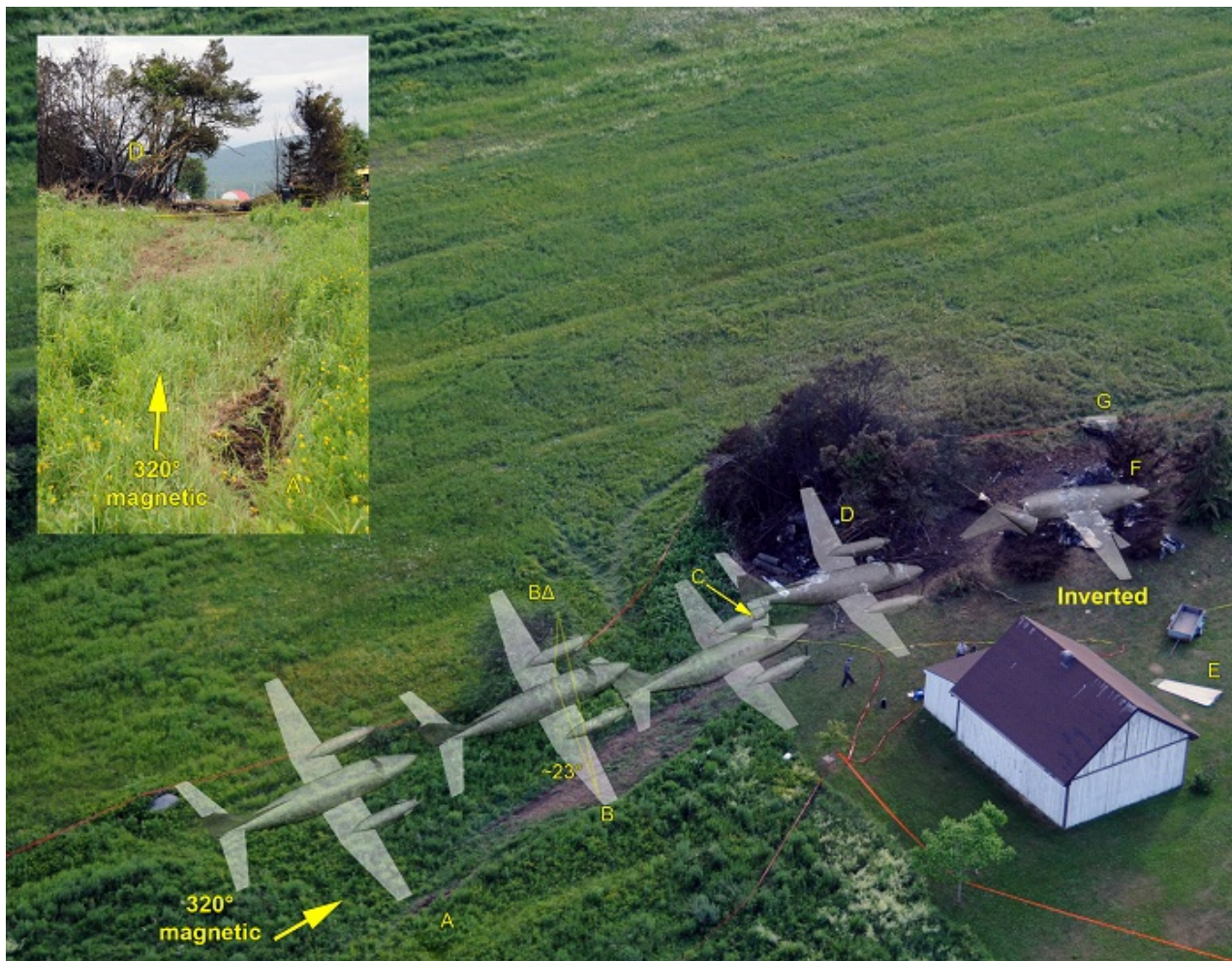
Case study: A10Q0098



TSB Investigation Report A10Q0098



A10Q0098



TSB Investigation Report A10Q0098



Causes and contributing factors (A10Q0098)

- The poor safety culture at the company contributed to the acceptance of unsafe practices.
- The significant measures taken by TC did not have the expected results to ensure compliance with the regulations, and consequently unsafe practices persisted.

Question: Can SMS work in an operation with a poor safety culture?



Case study: A11W0048



TSB investigation report A11W0048



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Findings from A11W0048

- The aircraft departed controlled flight for reasons which could not be determined, and broke up due to high speed.
- If cockpit or data recordings are not available to an investigation, the identification and communication of safety deficiencies to advance transportation safety may be precluded.
- If companies do not proactively monitor flight data, the identification and correction of safety deficiencies may be precluded.



Flight data recorders: recommendation

- The Department of Transport works with industry to remove obstacles to and develop recommended practices for the implementation of flight data monitoring and the installation of lightweight flight recording systems by commercial operators not currently required to carry these systems. (**A13-01**)

2013 Status: Satisfactory Intent



With more data, everybody wins

- **Operator**

- Presence of recorders may positively influence pilot decision-making
- FDM could improve safety
- Recorders could help to identify risks and safety issues before an accident happens
- They help to create an audit trail for maintenance cycle records

- **Crew**

- Learning opportunities (a valuable training tool for pilots)
- Clear evidence of event to advance safety

- **TSB**

- Better understand events leading to an occurrence
- Provide information to prevent future accidents
- Improved timeliness of investigations



Updated TSB Regulations

Incorporation of relevant TSB investigation policies and procedures that have evolved during the course of the last 22 years

The regulations now:

- Are simpler and more clearly organized
- Clarify confusing requirements (i.e. reporting occurrences, witness interviews)
- Change some of what needs to be reported in the event of an occurrence



Regulations: Overview

- Interpretations
 - Update the definitions so that they are harmonized with terminology used in other relevant federal legislation and international agreements and standards
- Reorganized from six sections to two parts
 - Part 1 - Reports (effective **July 1, 2014**)
 - Part 2- Investigations of Transportation Occurrences and Public Inquiries (effective **March 12, 2014**)



Information to be reported

2. (1) (**Addition**) Any person providing air traffic services (ATS) having direct knowledge of the occurrence shall report aviation occurrences

(1)(a)(i)(B) Parts that have become detached

(1)(a)(i)(C) Propeller wash

(1)(a)(ii) Exclusion (A) and (B) – now under incident as per ICAO

(1)(b) Incidents involving aircraft greater than 2250 kg
(down from 5700 kg) and also Part VII of the CARs



Part 2 - Investigations

Article 9 – Witness interviews

9. (1) In camera
- (2) Persons to attend an interview
- (3) Restriction on persons attending
- (4) Exclusion
- (5) Statement
- (6) Copy



Conclusions

- Companies can benefit from implementing SMS whether or not there is a regulatory requirement.
- FDRs: Operators can benefit from installing them now.
- Industry can work with TC to remove obstacles for use of CVRs and image recorders, and promote use of FDRs for safety purposes.
- <http://www.tsb.gc.ca/eng/regs/aviation/index.asp>



Questions?



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