



State: **Canada**

Presented by: **Kathy Fox, Chair, Transportation Safety Board of Canada (TSB)**

Introduction

In the fiscal year (FY) ending 31 March 2021, TSB investigators continued to deploy in person to accident sites, albeit with less frequency, and 60 investigations were ongoing as of April 1st. In a number of cases, information and witness statements were gathered through alternate means, reducing the need to deploy in person. In order to provide certainty to TSB staff in the short term, employees were directed in January to continue to telework by default until at least mid-September 2021. It is expected that a hybrid model, mixing presence in the office and working remotely, will be the norm for the organization once the pandemic recedes and work life returns to some form of normalcy. As of May 2021, Canada remains in a third wave of infections and a rise in hospitalizations as at least three COVID-19 variants are spreading simultaneously.

Major Organisational and/or Staff Changes

There were no significant changes at the Executive management level since the last ITSA virtual meeting in May 2020.

Following the departure of long-serving Board member Joe Hincke, who retired in August 2020, the government appointed Mr. Yoan Marier as a full-time member in September 2020 for a 4-year term. Mr. Marier brings to the Board a commercial aviation background as well as previous experience as a member of an administrative tribunal. Also, Mr. Ken Potter, former TSB senior investigator and manager with extensive international marine experience, was re-appointed as a part-time member for a 3-year term in December 2020. Two current Board Members, Ms. Faye Ackermans, a part-time member since 2014 and Mr. Paul Dittmann, a full-time member since 2017, are approaching the end of their terms and the hope is that the government will reappoint them.

Budget Issues and/or Legislative change

Nil

Case Studies and Challenges

PS752

On January 8, 2020, Ukraine International Airlines flight 752 was shot down shortly after taking off from Tehran's International airport, killing all 176 people on board, including 55 Canadians, 30 permanent residents and dozens of others with ties to Canada. Within a few hours following this tragedy, the TSB advised Iran's Aircraft Accident Investigation Board (AAIB) that we would appoint an Expert and accepted Iran's invitation to visit the accident site. From the very beginning, Iran offered the TSB more access to the investigation activities than we were technically entitled to, but less than what we asked for. For example, 2 TSB investigators spent 6 days in Tehran following the crash, visiting the accident site, examining the wreckage, and meeting with Iranian safety investigators to review information gathered by their team. Later, they also met with Iranian, Ukrainian (NBAAI), and French (BEA) investigators in Kiev before returning to



Canada. In July of last year, our Expert and a TSB recorder specialist attended the readout of the aircraft's flight recorders in Paris. Throughout the course of the investigation, we were in direct contact with Iran's AAIB and attended many discussions with the other participating countries. However, in spite of multiple requests, we were never formally accorded the higher status of accredited representative and hence were not allowed to listen to the cockpit voice recorders or directly access the flight data recordings. At Ukraine's request, in early February of this year, we were invited to provide them technical assistance, and Ukraine gave us access to the draft safety report for review and comments, something we would not otherwise have been entitled to. Following the release of Iran's final safety investigation report, and by exception, the TSB issued [its independent assessment of the final report](#) and expressed concerns about the many unanswered questions.

During the course of Iran's investigation, there were a number of initiatives undertaken within the Canadian government, heavily focused on support to victims' families, which required the TSB to engage and interact, while maintaining its independence. These included a report by a special advisor named by the Prime Minister recommending, among others, how such events could be prevented in the future, as well as the creation of a "Forensic Examination and Assessment Team", working out of the Privy Council Office, dedicated to gathering the facts of the accident from all sources available to the government. The latter's report is expected to be issued in May. The TSB also met with victims' families through the mechanism established by Canada's foreign ministry.

Annex 13

Following on from our experience in the PS752 investigation, the TSB is committed to advocating for a review of the provisions of ICAO Annex 13 to improve the credibility and transparency of such future safety investigations so that families and the public can have confidence in their findings and recommendations. In support of this, the TSB has submitted a working paper entitled "*Strengthening the Independence and Credibility of Aircraft Accident and Incident Investigations in Conflict of Interest Situations*" to ICAO's Accident Investigation Panel's sixth meeting scheduled for May 2021. An advance and confidential copy of the paper has been provided to ITSIA members for information.

Recommendations/Issues of Global Concern

Air

On 10 July 2019, a privately registered Robinson R44 helicopter was conducting a day visual flight rules flight from Lac de la Bidière, Quebec, to Saint-Sophie, Quebec, with one pilot and one passenger on board ([A19Q0109](#)). The aircraft never reached its destination. It was reported missing the following day to the Joint Rescue Coordination Centre in Trenton, Ontario, which began the search. No emergency locator transmitter (ELT) signal was detected. The helicopter was only found about 14 days after it was reported missing.

During the examination of the wreckage, one of the blades was found to have multiple adhesive failures, which resulted in the breakup of certain sections of the joint between the lower skin and the spar, causing humidity to infiltrate below the skin, weakening the adhesive bond joint over time. The investigation determined that a sudden increase in these failures likely contributed to significantly reducing the stiffness of the blade, causing severe vibrations. The rotational speed of the main rotor then fell too low, preventing the aircraft from remaining in flight. This was followed by a vertical drop and impact with the ground.



Following the accident, the TSB issued an [air safety advisory](#) requesting that Orolia, the manufacturer of Kannad ELTs, and Transport Canada (TC) revise ELT periodic inspection procedures so that a failure of the switch locking system can be detected and corrected in the future. In its response to TSB's advisory, Orolia indicated, among other things, that a warning was added in the documents containing switch operating instructions to clarify the instructions and avoid inappropriate manoeuvres that could result in breakage of the switch locking latches. TC published a civil aviation safety alert on ELT inspections that focuses on directing attention to switches on ELTs.

Marine

On 28 January 2019, the container vessel *Ever Summit* was berthing under the conduct of a marine pilot at Vanterm in the Port of Vancouver, British Columbia, with two tugs assisting, one positioned aft, the other forward ([M19P0020](#)). During the manoeuvre, the vessel struck the berth and an adjacent shore gantry crane. The vessel, berth, and crane were damaged. There were no injuries or pollution.

The investigation found that procedures for tug use are largely left to the discretion of individual pilots, and that no standard communication protocols were in place at the time of the occurrence. If standardized communications are not used, errors in tug commands will continue to occur, increasing the risk of accidents.

Over the past 10 years, there has been a substantial increase in the size of container vessels worldwide, including those calling at the Port of Vancouver. Without upgrades to existing infrastructure, these larger vessels necessitate berthing manoeuvres that have very little tolerance for error. While all terminals are designed to accommodate a maximum vessel size and most have built-in safety margins, the Board expressed concern that there are currently no requirements in Canada for the regulator or a port authority to examine the suitability of a berth for larger vessels. Decisions as to maximum vessel size are left to the discretion of the individual terminals.

Additional Information

TSB Strategic Plan 2021-2026

During FY 2020-2021, the TSB undertook internal and external consultations to anchor the development of its 5-year Strategic Plan for the 2021-2026 period. The work on the new plan launched over the summer of 2020 with a staff survey, as well as virtual open town hall type discussions on 6 themes that were proposed to anchor the new plan. An external stakeholder survey, conducted by a national public opinion research firm, provided the TSB perspectives on our products, interactions and performance. The [TSB Strategic Plan for the 2021-2026](#) period was made public in March 2021 and is focused on the following 6 strategic objectives: Strengthen the impact of our investigations; Foster an inclusive, diversified and respectful workplace; Employ a knowledgeable and highly skilled workforce; Leverage data to drive our choices and decisions; Be digital by default; Communicate with impact.

TSB Watchlist 2020

The TSB's Watchlist is issued every two years and identifies the key safety issues that need to be addressed to make Canada's transportation system even safer. In 2019, the TSB held a series of consultations on Watchlist 2018 in order to assess how industry and the regulator were progressing on addressing Watchlist issues, and to seek input to inform the 2020 edition. [Watchlist 2020](#) includes mode-specific issues carried over from the previous Watchlist, namely: Runway overruns, Risk of collisions from runway incursions; Commercial fishing safety; and Following railway signal indications. It includes one new issue:



Unplanned/uncontrolled movement of rail equipment. The following multi-modal issues were also carried over from the previous list: Fatigue management, Safety management and Regulatory surveillance. These last two were previously presented together but the decision was made to treat them as distinct issues given that the measures required to address them, as well as the involved change agents were different. Finally, the issue of Slow progress addressing TSB recommendations, was removed given the advances made on the part of the regulator to address outstanding recommendations.

TSB Activities Summary

The total number of occurrences [reported to the TSB](#) (as required under the *Transportation Safety Board Regulations*) in the 2020 calendar year (3,050) was 22% lower than the 2019 total of 3,908.

In 2020 there were 1,397 accidents reported, 20% below the 2019 total of 1,750, and 14% below the 10-year average of 1,628. There were 42% fewer fatalities (93) across all transportation sectors in 2020 than there were in 2019 (159). The 2020 total represents a 34% decrease in fatalities from the 10-year average of 141. The total of 1,653 incidents reported to the TSB in 2020 is a 23% decrease from the 2019 total of 2,158, and a 9% decrease from the 10-year average of 1,826. (The smaller decrease compared to the 10-year average partly results from changes made in 2014 to TSB reporting requirements.)

TSB investigators physically [deployed](#) 29 times during the 2020-21 fiscal year (down from 60 the previous year) in response to occurrences in all sectors. These deployments took staff from the TSB regional offices and Head Office to locations across the country. Investigators were also involved in 11 “virtual” deployments during the period.

In 2020–21, the TSB began 41 new investigations and completed 66 across all four transportation sectors ([aviation sector reports](#); [marine sector reports](#); [pipeline sector reports](#); [rail sector reports](#)) and in all four classes (from in-depth and complex to limited scope).

Each year, the Board reassesses outstanding recommendations as part of ongoing efforts to urge stakeholders to take action on the safety issues TSB investigations have identified. In 2020–21, the Board reassessed 12 outstanding recommendations as Fully Satisfactory: 5 in aviation, 4 in marine and 3 in rail.

Since 1990, the Board has made 612 recommendations. By the end of 2020–21, it had given 84.5% of the responses to these recommendations the highest rating of Fully Satisfactory (up from 83% at the end of 2019–20). This means that stakeholders, including the regulator, Transport Canada, had taken action to substantially reduce the safety deficiencies the Board had identified. At 31 March 2021, there were 82 outstanding recommendations, slightly less than half of which date from 10 years ago or more.