Transportation Safety Board of Canada
Bureau de la sécurité des transports du Canada

REASSESSMENT OF THE RESPONSE TO AIR TRANSPORTATION SAFETY RECOMMENDATION A13-02

Underwater egress training for commercial flight crews

Background

On 25 May 2012, the Cochrane Air Service de Havilland DHC-2 Mk.1 Beaver floatplane (registration C-FGBF, serial number 168) departed Edgar Lake, Ontario, with 2 passengers and 300 pounds of cargo on board. The aircraft was destined for the company's main base located on Lillabelle Lake, Ontario, approximately 77 miles to the south. On arrival, a southwest-bound landing was attempted across the narrow width of the lake, as the winds favoured this direction. The pilot was unable to land the aircraft in the distance available and executed a go-around. At 1408, Eastern Daylight Time, shortly after full power application, the aircraft rolled quickly to the left and struck the water in a partially inverted attitude. The aircraft came to rest on the muddy lake bottom, partially suspended by the undamaged floats. The passenger in the front seat was able to exit the aircraft and was subsequently rescued. The pilot and rear-seat passenger were not able to exit and drowned.

The Board concluded its investigation and released report A12O0071 on 23 October 2013.

TSB Recommendation A13-02 (October 2013)

Seaplane travel is common in Canada, particularly in British Columbia. In the Vancouver Harbour alone, there are about 33 000 floatplane movements per year, carrying approximately 300 000 passengers.

The Transportation Safety Board (TSB) has found that the risk of drowning for occupants involved in seaplane accidents is high. TSB and British Columbia Coroners Service data show that, over the last 20 years, about 70% of the fatalities resulting from accidents where aircraft crashed and were submerged in water were attributed to drowning. Half of the deceased were found in the submerged wreckage. While it could not be determined in all cases, some investigations found that the occupants were conscious and able to move around the cabin before they drowned. These past occurrences validate the probability that able-bodied persons can be trapped in sinking aircraft and drown as a result.

This investigation concluded that the pilot survived the impact, but was unable to locate a suitable exit and drowned. Pilots who receive underwater egress training have a greater probability of escaping from the aircraft and a greater chance of surviving the accident.

Transport Canada (TC) has recognized the critical importance of underwater egress training. However, at this point, such training remains voluntary. TC indicated that a process is currently

underway to initiate the drafting of new regulations requiring underwater egress training using an accelerated procedure, but it did not provide a timeframe for these actions.

The TSB is concerned that pilots who have not received training in underwater egress may not be able to exit the aircraft and subsequently help passengers to safety.

Therefore the Board recommends that:

> the Department of Transport require underwater egress training for all flight crews engaged in commercial seaplane operations.
>
> **TSB Recommendation A13-02**

Transport Canada's response to Recommendation A13-02 (January 2014)

Transport Canada is currently drafting a proposed regulation that will introduce mandatory emergency underwater egress training for flight crews of commercially operated fixed wing seaplanes (Subpart 703 and 704) by amending current mandatory emergency training set out in the Standard 723 Aeroplanes and Standard 724 Aeroplanes of the Canadian Aviation Regulations.

The proposed regulation makes egress training mandatory for initial training, with recurrent training required every 3 years thereafter on an ongoing basis.

The proposed regulation is anticipated to be pre-published in the *Canada Gazette*, Part I in summer 2014.

TSB assessment of Transport Canada's response to Recommendation A13-02 (March 2014)

In its response, TC indicated that it will amend the current mandatory emergency training to include initial and recurrent underwater egress training for commercial seaplane flight crews and that this proposed regulation will be pre-published in the *Canada Gazette* in summer 2014.

This could substantially reduce or eliminate the safety deficiency. However, for the present, the action has not yet been sufficiently advanced to reduce the risks to transportation safety.

Therefore, the response is assessed as **Satisfactory Intent**.

Transport Canada's response to Recommendation A13-02 (March 2015)

Transport Canada agrees with the recommendation.

The proposed regulations that address this recommendation are anticipated to be pre-published in the *Canada Gazette*, Part I in summer 2015.

TSB reassessment of Transport Canada's response to Recommendation A13-02 (March 2015)

In its response, TC indicated that this proposed regulation will be pre-published in the *Canada Gazette*, Part I in summer 2015, a year later than the previous estimate of the summer of 2014. The proposed action could substantially reduce or eliminate the safety deficiency, but for the

present, the action has not yet been sufficiently advanced to reduce the risks to transportation safety.

Therefore, the Board considers the response to the recommendation to indicate **Satisfactory Intent.**

Transport Canada's response to Recommendation A13-02 (November 2015)

Transport Canada (TC) agrees with the recommendation.

Stakeholders were consulted on a Notice of Proposed Amendment in summer 2014. The regulatory proposal was adjusted following stakeholder comments. Due to the 2015 Federal Elections, the expected publication date in the *Canada Gazette*, Part I is now spring 2016.

TSB reassessment of Transport Canada's response to Recommendation A13-02 (March 2016)

In its response, TC indicated that this proposed regulation will be pre-published in the *Canada Gazette,* Part I in spring 2016, almost 2 years later than the first estimate of the summer of 2014. The proposed action could substantially reduce or eliminate the safety deficiency, but for the present, the action has not yet been sufficiently advanced to reduce the risks to transportation safety.

Therefore, the Board considers the response to the recommendation to indicate **Satisfactory Intent.**

Transport Canada's response to Recommendation A13-02 (January 2017)

Proposed amendments were published in *Canada Gazette*, Part I on May 21, 2016. *Canada Gazette*, Part II publication is anticipated in 2017.

TSB reassessment of Transport Canada's response to Recommendation A13-02 (March 2017)

The Board is encouraged that the proposed regulatory changes were published in the *Canada Gazette*, Part I, on 21 May 2016. TC anticipates the proposed regulatory changes to be published in the *Canada Gazette*, Part II, in 2017. Although these changes could substantially reduce or eliminate the safety deficiency, until they are fully implemented, the risks to transportation safety remain.

Therefore, the response to Recommendation A13-02 is assessed as **Satisfactory Intent**.

Transport Canada's response to Recommendation A13-02 (March 2018)

TC agrees with the recommendation.

Proposed amendments were published in the *Canada Gazette*, Part I on May 21, 2016. *Canada Gazette*, Part II publication is anticipated in fall 2018.

TSB reassessment of Transport Canada's response to Recommendation A13-02 (September 2018)

The Board is encouraged with the proposed regulatory amendments that were published in the *Canada Gazette,* Part I, in May 2016. These amendments will require mandatory initial and recurrent training, every 3 years thereafter, on underwater egress for pilots operating under the *Canadian Aviation Regulations* subparts 703 and 704.

The Board is, however, concerned with the additional delay for the publication of these amendments in the *Canada Gazette,* Part II. Although these amendments will, if published as currently proposed, substantially reduce or eliminate the safety deficiency identified in Recommendation A13-02, until they are fully implemented, the risks to transportation safety remain.

Therefore, the response to Recommendation A13-02 is assessed as **Satisfactory Intent**.

Update to Transport Canada's response (March 2019)

The amendments to the *Canadian Aviation Regulations* (CARs) for seaplane operations were published in the *Canada Gazette*, Part II, on March 6, 2019.

These amendments require mandatory initial and recurrent training, every 3 years thereafter, on underwater egress for flight crews operating under CARs subparts 703 and 704, and will come into effect in March 2022.

TSB reassessment of Transport Canada's response to Recommendation A13-02 (March 2019)

The Board believes that these amendments have substantially reduced the risk associated with the safety deficiency identified in Recommendation A13-02.

Therefore, the Board considers the response to Recommendation A13-02 to be **Fully Satisfactory**.

This deficiency file is **Closed**.