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

REASSESSMENT OF THE RESPONSE TO TSB RECOMMENDATION A11-06

Wearing of personal flotation devices

Background

On 29 November 2009, the Seair Seaplanes Ltd. de Havilland DHC-2 MK 1 (serial number 1171, registration C-GTMC) was departing Lyall Harbour, Saturna Island, for the water aerodrome at the Vancouver International Airport, British Columbia. After an unsuccessful attempt at taking off downwind, the pilot took off into the wind towards Lyall Harbour. At approximately 1603 Pacific Standard Time, the aircraft became airborne, but remained below the surrounding terrain. The aircraft turned left, then descended and collided with the water. Persons nearby responded immediately; however, by the time they arrived at the aircraft, the cabin was below the surface of the water. There were 8 persons on board; the pilot and an adult passenger survived and suffered serious injuries.

The Board concluded its investigation and released report A09P0397 on 17 March 2011.

TSB Recommendation A11-06 (March 2011)

In many accidents when occupants escape from sinking aircraft, they egress without life vests, which may result in drowning. It has been shown that those inside a sinking aircraft understandably focus on escaping from it. In their haste to escape, occupants either do not often have enough time to locate and don a life vest or they overlook doing so. In this accident, 2 of the seriously injured occupants were able to escape from the aircraft, but neither person, including the pilot who had been trained for underwater egress, managed to retrieve a life vest from the aircraft. Had they not used nearby boat bumpers to stay afloat, they could easily have drowned.

Some operators, notably Transport Canada (TC) with its fleet of aircraft, require those in aircraft taking off or landing on water to wear approved life vests. Such a requirement eliminates the need for occupants to search for their life vest and, after they escape from the aircraft, the life vest is ready for use. Without a personal flotation device, and in the absence of other rescue capabilities, there is higher risk that survivors of water impact would drown.

The TSB has previously recommended (A94-07) that seaplane occupants be required to wear personal flotation devices during flight. A number of objections to this solution have been raised by the regulator and industry, including emergency inflation before egress hampering the wearer and impeding the egress of others, sizing issues, especially over thick outer clothing, and discomfort. These objections may have some validity when considering traditional life vest models. Recent developments in personal flotation device design include such things as manually-inflated belt packs, which are donned only after inflation. When combined with an

appropriate and well-understood passenger briefing, such devices would effectively counter those objections.

The evidence continues to support the conclusion that, unless persons don a personal flotation device, they are unlikely to use one after escaping an aircraft in water.

Therefore, the Board recommends that:

> the Department of Transport require that occupants of commercial seaplanes wear a device that provides personal flotation following emergency egress.
>
> **TSB Recommendation A11-06**

Transport Canada's response to Recommendation A11-06 (June 2011)

Transport Canada (TC) has over the years taken steps to address floatplane safety through safety promotion and awareness campaigns, as well as regulatory actions. TC will run an updated floatplane safety campaign during the summer of 2011.

TC issued Civil Aviation Safety Alert (CASA) on June 6, 2011, with its focus on commercial and private float plane operators and pilots, recommending the following best practices in relation to floatplane safety:

- Upper body restraints to be used by front seat occupants;
- Briefing passengers on the proper usage of floatation devices during emergency egress;
- Underwater emergency egress training for flight crew; and
- Aircraft safety design improvements facilitating egress.

In August 2011, TC will hold a focus group with selected members of industry to determine the most effective means of addressing the recommendations related to rapid egress and the mandatory use of personal floatation devices. The conclusion of the focus group will be presented to the Canadian Aviation Regulation Advisory Council (CARAC) by the spring of 2012 as the basis for amendments to the rules and any proposed rule changes will be consulted expeditiously. TC will also expedite the implementation of proposed regulatory amendments which have already been consulted, which will provide for increased flexibility in the possible types of Personal Flotation Devices.

TSB assessment of Transport Canada's response to Recommendation A11-06 (July 2011)

In its response, TC indicated that it will hold a focus group, in part, to determine the most effective means of addressing the recommendation related to the mandatory use of personal floatation devices. The conclusions of the focus group will be presented to CARAC by the spring of 2012 as the basis for amendments to the rules and any proposed rule changes will be consulted expeditiously. In the meantime, TC is continuing its safety promotion and awareness campaigns and encourages operators and flight crews to voluntarily adopt best industry practices in relation to floatplane safety.

The conclusions of the focus group and the following CARAC process may result in changes to the rules related to the use of personal floatation devices for occupants of commercial seaplanes. This could substantially reduce or eliminate the safety deficiency. However, for the present, the action has not been sufficiently advanced to reduce the risks to transportation safety.

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

Transport Canada's response to Recommendation A11-05 (September 2011)

September 2011 update

> Transport Canada initiated a focus group during the summer of 2011 with industry stakeholders to review recommendations A11-05 and A11-06 related to the installation of regular and emergency exits that would allow rapid egress following a survivable collision with water and to review the proposal for occupants of commercial seaplanes to wear a device that provides personal flotation following emergency egress.
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> These proposals were subsequently examined in depth and agreed-to by TC senior management at a CARC meeting in early September. The process is currently underway to initiate the drafting of appropriate regulations, using an accelerated procedure.

On 28 March 2012, TC submitted an update stating the following:

> Transport Canada Civil Aviation (TCCA) has initiated the drafting of instructions to be presented to the Department of Justice to amend the Canadian Aviation Regulations (CARs) to:
> - Modify Part VII of the CARs to require that personal floatation device be used by all occupants;
> - Amend Airworthiness Manual Chapter 551. The current standard for Personal Floatation Devices (PFD) includes UL1180 that is a standard from the marine environment. In this standard there is provision for automatically inflating devices. These PFDs are designed such that when the device comes into contact with water it will automatically inflate. The Standards would be changed to exclude the use of the automatic inflating devices and only permit the manual inflating devices.

In addition, TC provided an explanation of its accelerated rulemaking process.

> Recommendations A11-06, A11-05 and A11-04, A11-03 are part of a pilot project initiated by TCCA introducing an accelerated rulemaking process. Two risk analysis focus groups were formed (involving industry representatives) resulting in recommended actions. As part of the next steps, CARAC members received a Notice of Intent indicating what regulatory changes are proposed and were invited to provide comments. The drafting of the proposed regulations by the Department of Justice and the public consultation take place simultaneously; the proposed regulations are finalized only after the public consultation period has closed and comments have been disposed of.

TSB reassessment of Transport Canada's response to Recommendation A11-05 (March 2012)

In its response, TC indicated that during the summer of 2011 it has initiated a focus group with industry stakeholders, in part, to review recommendation A11-06 and to review the proposal for occupants of commercial seaplanes to wear a device that provides personal flotation following emergency egress.

The response indicates that, as a result of the focus group, proposals were presented to TC senior management during a CARC meeting. After an in-depth review, TC senior management agreed with the proposals. While TC indicated that a process is currently underway to initiate the drafting of appropriate regulations, using an accelerated procedure, it did not provide a timeframe for these actions.

The new regulations may result in changes to the rules related to the use of personal floatation devices for occupants of commercial seaplanes. This could substantially reduce or eliminate the safety deficiency. However, for the present, the action has not been sufficiently advanced to reduce the risks to transportation safety.

The response is considered **Satisfactory Intent.**

Transport Canada's response to Recommendation A11-06 (December 2012)

TC will introduce a requirement for all commercial seaplane occupants to wear a flotation device at all times. Legal drafting of the proposed amendments is anticipated to begin by the end of 2012. Recommendations A11-05 and A11-06 are advancing together for planned publication in the *Canada Gazette* in 2014.

TSB reassessment of Transport Canada's response to Recommendation A11-06 (March 2013)

In its update TC indicates its intent to implement regulations that will meet the TSB recommendation. This could substantially reduce or eliminate the safety deficiency. However, for the present, the action has not been sufficiently advanced to reduce the risks to transportation safety.

The response is considered **Satisfactory Intent.**

Transport Canada's response to Recommendation A11-06 (October 2013)

The proposed regulations that address this recommendation are anticipated to be pre-published in the *Canada Gazette*, Part I in summer 2014.

TSB reassessment of Transport Canada's response to Recommendation A11-06 (April 2014)

In its update, TC indicates its intent to implement regulations that will meet the TSB recommendation. This could substantially reduce or eliminate the safety deficiency. However, for the present, the action has not been sufficiently advanced to reduce the risks to transportation safety.

The response is considered **Satisfactory Intent.**

Transport Canada's response to Recommendation A11-06 (March 2015)

Transport Canada agrees with the recommendation.

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

TSB reassessment of Transport Canada's response to Recommendation A11-06 (March 2015)

In its response, TC indicates it anticipates the pre-publication of the proposed regulations in the *Canada Gazette*, Part I in summer 2015. However, in its response of October 2013, TC had made the same statement for summer 2014. This proposed regulation could substantially reduce or eliminate the safety deficiency, but for the present, the action has not been sufficiently advanced to reduce the risks to transportation safety.

The response is considered **Satisfactory Intent**.

Transport Canada's response to Recommendation A11-06 (November 2015)

Transport Canada 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 A11-06 (March 2016)

In its latest response, Transport Canada indicates that the new expected publication date of the proposed regulatory changes in the *Canada Gazette*, Part I is now spring 2016. In September 2011, Transport Canada indicated that Recommendation A11-06 was part of a pilot project initiated by TCCA introducing an accelerated rulemaking process. Although the proposed actions could substantially reduce or eliminate the safety deficiency, the actions have not been sufficiently advanced to reduce the risks to transportation safety. The Board is concerned by the protracted delays.

Therefore, the assessment remains **Satisfactory Intent**.

Transport Canada's response to Recommendation A11-06 (January 2017)

Proposed amendments were published in the *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 A11-06 (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 A11-06 is assessed as **Satisfactory Intent**.

Transport Canada's response to Recommendation A11-06 (July 2018)

TC agrees with the recommendation.

Proposed amendments were published in *Canada Gazette*, Part I on May 21, 2016. *Canada Gazette*, Part II publication is anticipated in fall 2018. In addition to addressing recommendation A11-06, this regulatory action will also address: A94-07, and A13-02.

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.

Board reassessment of Transport Canada's response to Recommendation A11-06 (March 2019)

In March 2019, the amendments to the *Canadian Aviation Regulations* (CARs) for seaplane operations were published in the *Canada Gazette*, Part II. These amendments include:

- The requirement for seaplane operators to have procedures in their company operations manual to ensure that crew members and passengers wear a flotation device when the seaplane is operated on or above water;
- The requirement for the pilot-in-command to instruct crew members and passengers to wear a flotation device when the seaplane is operated on or above water; and
- Requirements prescribing how the flotation device must be worn, as well as exemptions to the regulation for a person carried on a stretcher, incubator or other similar devices.

These amendments are applicable to all seaplanes operated under CARs Subparts 703 and 704, and will come into effect in September 2020.

The Board believes that these amendments have substantially reduced the risk associated with the safety deficiency identified in Recommendation A11-06.

Therefore, the Board considers the response to Recommendation A11-06 to be **Fully Satisfactory**.

This deficiency file is **Closed**.