REASSESSMENT OF THE RESPONSE TO AVIATION SAFETY RECOMMENDATION A94-07

Personal flotation devices

Background

The TSB recently completed an analysis of Canadian seaplane accidents over the 15-year period from 1976 through 1990. During that period, there were 1432 such accidents and 452 people died in 234 of them. In May 1994, the Board issued a report identifying safety deficiencies associated with survivability in seaplane accidents. The report contained 6 recommendations assessing issues of personal floatation devices; seaplane occupant restraint systems; seaplane operators' disregard for safety regulations; and seaplane passengers' safety awareness.

On 3 August 1994, the Minister responded to each of the Board's recommendations. Following is the staff's assessment of the extent to which the underlying safety deficiencies are being addressed.

The Board released report SA9401 on 18 May 1994.

TSB Recommendation A94-07 (May 1994)

In view of the continuing vulnerability of the occupants of seaplanes in accidents on the water to drowning, and since nearly four-fifths of fatal seaplane accidents which terminated in the water occurred during the take-off or the approach and landing phase, the Board, having considered advances in permanent wear, damage resistant, inflatable life-jackets, recommends that:

> the Department of Transport require that all occupants of seaplanes wear a personal floatation device during the standing, taxiing, take-off, and approach and landing phases of flight.
>
> **TSB Recommendation A94-07**

Transport Canada's response to Recommendation A94-07 (August 1994)

Transport Canada Aviation (TCA) has identified a requirement to update the Life Saving Equipment Order, (A.N.O., Series II, No.8) and to improve life preservers currently in use.

During consultation with industry, operators of floatplanes and amphibians pointed out that life preservers are not rugged enough for everyday wear, are unsuitable for frequent donning and doffing and are expensive. Continuing research and development is being conducted by TCA to improve life preserver design. In addition, TCA will present the proposal to make the wearing of such devices a regulatory requirement to the Work Group of the Canadian Aviation Regulation Advisory Council (CARAC) which is currently developing recommendations

pertaining to Life Saving Equipment requirements. The Work Group will be asked to assess the safety implications of the proposal.

There is a widespread concern in the aviation industry regarding additional risks inherent in the wearing of the life vests during the standing, taxiing, take-off and landing phases of flight. It is claimed that marine cushions that are in wide-spread supplementary use are more likely to aid in water accidents.

TCA will not legislate that all occupants of seaplanes wear a personal flotation device during the standing, taxiing, take-off, and approach and landing phases of flight until clear safety benefits can be quantified. The revised legislation will require the life preservers to be within easy reach of each seated passenger. This will increase their availability to all the occupants in the seaplane.

TSB assessment of Transport Canada's response to Recommendation A94-07 (August 1994)

Transport Canada is in the process of updating the Life Saving Equipment Order (A.N.O., Series II, No. 8) and has identified a requirement to improve life preservers currently in use. However, industry and seaplane operators have claimed that life preservers are not rugged enough for everyday wear, are unsuitable for frequent donning and doffing, and are expensive. Continuing research and development is being conducted by Transport Canada Aviation (TCA) to improve life preserver design. In addition, TCA will present the proposal to make the wearing of such devices a regulatory requirement to the Work Group of the Canadian Aviation Regulation Advisory Council (CARAC) which is currently developing recommendations pertaining to life saving equipment requirements. The Work Group will be asked to assess the safety implications of the proposal.

On 12 July 1994, a TSB analyst was at a Survival Equipment Work Group meeting when life preservers were discussed; (this Group will draft the Survival Equipment regulatory changes). The Group chairman did not seem to be aware of the TSB study of Survivability in Seaplane Accidents and this study had not been tabled for the Work Group's consideration. The TSB analyst distributed copies of the report to the Work Group participants. The Chairman skimmed the first two paragraphs and said that the recommendation could not be implemented. No other mention of the study was made thereafter. It is the staff's understanding that this matter is no longer a discussion item for the Group.

TC and the industry both seem to be ignoring the fact that permanent wear PFDs have been in existence for many years and are available at many good fishing tackle and outdoor products shops. Anecdotal reports indicate that such PFDs have saved many lives, but there are few official data on actual lives saved since many non-fatal boating or fishing accidents are not reported.

In its response to the study, TC also contends that there is a widespread concern in the aviation industry regarding additional risks inherent in the wearing or the life vests on board seaplanes and that marine cushions are more likely to aid in water accidents. However, no evidence was provided to support this contention, nor is staff aware of any factual basis to the contention.

The Canadian Aviation Safety Board made recommendations regarding floatable seat-cushions in its safety study on "The Carriage and Use of Overwater Life-Support Equipment in Canada". The CASB recommended that:

> The Department require that all seat cushions on passenger-carrying commercial aircraft be of an approved flotation type.
>
> CASB 88-29

However, the Working Group has also argued against CASB recommendation 88-29 "as the cost would be prohibitive". Of note, seat cushions will soon not be accepted by TC as a personal floatation device under an amendment to the "Small Vessel Regulations" to come into force in 1995.

In its response to Recommendation A94-07, TC refers to possible actions or issue examinations which have already been discarded by departmental officials and industry. TC clearly does not intend to legislate that all occupants of seaplanes wear a PFD until clear safety benefits can be quantified. Since the Survival Equipment Work Group has already dismissed the TSB's recommendations, thereby contradicting the positive tone of the response, the underlying safety deficiency will persist with respect to preventing drowning of occupants who survive crash forces on water.

Therefore, the response to Recommendation A94-07 is assessed as **Unsatisfactory.**

TSB reassessment of Transport Canada's response to Recommendation A97-04 (November 1996)

On 2 August 1995, during a video/teleconference on "Exploring requirements for safety in seaplane operations", the Director of Transport Canada, Air Carriers, stated that Transport Canada would not endorse any safety equipment requirement that would impose a cost to operators.

Therefore, the assessment remains as **Unsatisfactory.**

TSB reassessment of Transport Canada's response to Recommendation A94-07 (November 1997)

No change since the last reassessment.

Therefore the assessment remains as **Unsatisfactory.**

TSB reassessment of Transport Canada's response to Recommendation A94-07 (February 2004)

The underlying safety deficiency in recommendation A94-07 is a controversial issue with Transport Canada and no conclusive evidence to date that sways argument as to whether to wear or not to wear flotation devices during take-off and landing of float aircraft. The decision is probably best left to individual's preference. A02Q0054 is latest occurrence in which non-use of flotation device is cited in the findings.

Therefore the assessment remains as **Unsatisfactory**.

As such, "Further Action is Unwarranted" with respect to A94-07 and the status is set to **Inactive.**

TSB review of Recommendation A94-07 deficiency file status (April 2014)

The Board requested that Recommendation A94-07 be reviewed to determine if the Deficiency File Status was appropriate. After an initial evaluation, it was determined that the safety deficiency addressed by Recommendation A94-07 is addressed by the more recent Recommendation A11-06.

It is therefore appropriate to follow the progress on Personal Flotation Devices issues through Recommendation A11-06.

Therefore, the assessment remains as **Unsatisfactory**.

Consequently, the status of Recommendation A94-07 is changed to **Active**.

Transport Canada's response to Recommendation A94-07 (March 2018)

TC agrees with the recommendation.

TC published the proposed amendments in Canada Gazette, Part I on May 21, 2016. Publication in Canada Gazette, Part II is anticipated in fall 2018.

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.

TSB reassessment of Transport Canada's response to Recommendation A94-07 (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 A94-07.

Therefore, the Board considers the response to Recommendation A94-07 to be **Fully Satisfactory**.

This deficiency file is **Closed**.