REASSESSMENT OF THE RESPONSE TO TSB RECOMMENDATION A91-22

VFR weather minima in uncontrolled airspace

Background

The accident aircraft, a Piper PA-31T3, was on a flight from Holman Island to Sachs Harbour, Northwest Territories. After conducting two unsuccessful instrument approaches, the pilot attempted a visual approach, at low altitude, to the Sachs Harbour Airport. While turning from downwind to final approach, the aircraft pitched nose down and crashed about one kilometre short of the runway. The aircraft struck the ice-covered surface of a lake and sank in 35 feet of water. All five occupants sustained fatal injuries.

The investigation determined that, while conducting the visual approach in conditions of low visibility and low cloud, the pilot did not maintain sufficient airspeed, and the aircraft stalled and entered a spin.

The Board concluded its investigation and released Aviation Investigation Report A89W0232 on 13 November 1991.

TSB Recommendation A91-22 (November 1991)

A deficiency relating to the visual flight rules (VFR) weather minima was identified. Because the VFR weather minima in uncontrolled airspace can be lower than the instrument flight rules (IFR) minima, it is possible that a VFR aircraft, conducting essentially the same manoeuvring as an IFR aircraft, may be operating with an inadequate safety margin.

Therefore, the Board recommended that

> the Department of Transport change the VFR weather minima required for landing fixed-wing aircraft in uncontrolled airspace so that the VFR minima provide a level of safety at least equivalent to that provided by IFR circling minima.
>
> **TSB Recommendation A91-22**

Transport Canada's response to Recommendation A91-22 (April 1992)

Transport Canada agrees that the regulations prescribing visual limits for any phase of flight operations should provide an adequate margin of safety for the manoeuvres being carried out.

Transport Canada officials have concluded that this recommendation regarding visual limits in uncontrolled airspace is similar to the recommendations made by the Board in their special

study of VFR Flight into Adverse Weather (TSB 90SP002). This TSB study recommended that visibility minima be established for visual flight rules (VFR) that will allow pilots to retain control of their aircraft by outside references (Recommendation A90-65) and that VFR weather limits for commercial operations in uncontrolled airspace be increased (Recommendation A90-66).

A VFR working group, with industry representation, has already been established within the Department to address the recommendations on VFR operations from this study. This working group will also review this recommendation and will submit a response to Recommendation A91-22 in conjunction with the responses to recommendations A90-65 and A90-66.

TSB assessment of Transport Canada's response to Recommendation A91-22 (June 1992)

In response to the TSB's visual flight rules (VFR)-into-instrument meteorological conditions (IMC) safety study, published in December 1990, Transport Canada (TC) noted that implementation of many of the recommendations regarding VFR would result in a major change of the concepts in the conduct of visual flight operations. TC indicated that the regulatory actions required to institute these changes would require extensive consultation with the aviation community as a normal part of the rule-making process. To this end, a VFR Working Group, composed of representatives from aviation associations, various TC officials, with an observer from the TSB staff, was formed. This group met in Ottawa in January 1992 to address 11 of the 15 outstanding recommendations. The aim of the meeting was to address each of the recommendations individually in order to prepare a response for the Minister of Transport.

According to the TSB observer, the Working Group focused on the recommendations rather than the inherent safety deficiencies; therefore, the discussions were not intellectually complete. The Working Group tended to view training as the "be-all-and-end-all" rather than addressing fundamental shortcomings in the regulations themselves. TC's intent to address the VFR weather minimum deficiencies by continuing its emphasis on training and education for pilots was confirmed in the 1/92 issue of TC's Aviation Safety Transmittal and Response System (ASTRA) (an internal project tracking system used by TC management).

TC's method of consulting with industry on modifying safety-related regulations, as illustrated by their response to the VFR-into-IMC safety study (and the earlier safety study on pilot fatigue) is flawed. Apparently, TC is going directly to industry for a reaction to the TSB's recommendations, before developing its own position on the safety deficiencies identified by the Board. TC finds itself having to either shape a position which is consistent with the industry's representatives, or risk industry censure if it does not heed the industry position it invited. It is noteworthy that most of the TC representatives attending the meetings appeared not to agree with many of the positions represented by industry.

The Minister's response to Recommendation A91-22 points out the similarities between this recommendation and recommendations A90-65 and A90-66, which were made in the VFR-into-IMC safety study. It further states that this recommendation will be reviewed by the TC VFR Working Group in conjunction with these two other recommendations before a final response is provided to the TSB.

A written status report from TC (29 May 1992) indicated that the Working Group reported to the Aviation Safety Review Committee on 27 March 1992. Their conclusions have been passed to the responsible Directorates and will form the basis of the Department's final response to the recommendations. Apparently, there is no intention of re-opening the VFR Working Group to consider Recommendation A91-22 as was implied in the Minister's response, and there is no indication that this safety deficiency is being actively pursued.

Of further concern is the length of time it is taking to address the other VFR recommendations. The VFR-into-IMC safety study was published in December 1990. The Minister's reply was in April 1991, but a final TC position has yet to be received on 15 of the safety study's 26 recommendations.

Because of the similarities between Recommendation A91-22 and both recommendations A90-65 and A90-66, and because of the Working Group's reaction to the latter two recommendations, it may be expected that the safety deficiency identified in Recommendation A91-22 will also not be adequately addressed. The staff are concerned that the review process used by TC to address the VFR weather minimum deficiencies was flawed. While it is recognized that the consultation process with industry is inherently slow, the staff are also concerned that the length of time taken for a final response is excessive.

Although the Minister appears to have accepted the safety deficiency identified in Recommendation A91-22 (and those identified earlier in the related recommendations A90-65 and A90-66), the staff are concerned that the departmental follow-up for implementation of appropriate corrective action has been inadequate. The safety deficiencies persist. Therefore, the Board may wish to consider seeking clarification from the Minister as to his Department's planned timetable for alleviating the safety deficiencies.

Transport Canada's response to Recommendation A91-22 (July 1993)

This is an update on the 15 outstanding recommendations made by the Transportation Safety Board of Canada as a result of the Safety Study on VFR Flight into Adverse Weather Report No. 90-SP002, as well as Recommendation A91-22.

Acceptance of Recommendations 90-72, 90-75, and 90-76 encountered opposition from the aviation community to the flight-test portion of the proposed biennial flight review. Consultation is under way to try to establish a mandatory seminar on a periodic basis as a licence validation tool. If such a method can be satisfactorily established to confirm pilot skills and knowledge, TC believes the objective of the recommendations will have been met.

TSB reassessment of the response to Recommendation A91-22 (November 1996)

Draft Air Navigation Orders, V3 requires 2 nautical miles visibility for flight below 1000 feet above ground level.

Canadian Aviation Regulations (CARs) sections 602.115 and 702.17 apply.

Recommendation not specifically addressed.

Therefore, the response to Recommendation A91-22 is assessed as **Satisfactory in Part**.

TSB reassessment of the response to Recommendation A91-22 (November 1997)

Canadian Aviation Regulations (CARs) 602.115 and 702.17 apply.

Recommendation not specifically addressed.

Actual visual flight rules (VFR) minimum visibility is 2 statute miles and most category (CAT) A and B circling visibility minimum are between 1.5 and 2.5 statute miles.

Therefore, the assessment of the response to Recommendation A91-22 remains **Satisfactory in Part**.

TSB reassessment of the response to Recommendation A91-22 (January 2004)

No change to the regulations since the previous reassessment.

No change of status from the previous reassessment.

Therefore, the assessment of the response to Recommendation A911-22 remains **Satisfactory in Part**.

TSB reassessment of the response to Recommendation A91-22 (March 2005)

In 1997, a Transport Canada (TC) study addressed many of the issues related to the "VFR Flight into Adverse Weather" safety study. Part of the 1997 TC study looked at the issue of visibility versus the turning radius of aircraft at various approach/manoeuvring speeds. TC concluded that the new 2 nautical miles visibility limit provided an adequate margin of safety up to at least airspeeds of 130 knots. A recent search of TSB data (1995–2004) did not show any similar situations to that encountered in the occurrence that prompted Recommendation A91-22. (These data are subsequent to the visual flight rules (VFR) visibility limit in uncontrolled airspace being raised to 2 nautical miles.)

Consequently, it could not be determined with certainty if the deficiency has been reduced substantially; therefore, the assessment of the response to Recommendation A91-22 remains **Satisfactory in Part**. However, the TSB will, through ongoing and/or future investigations, attempt to determine to what extent the deficiency still exists, and if required, make "new" recommendations.

As such, further action is unwarranted at this time with respect to Recommendation A91-22, and the status is set to **Inactive**.

TSB review of Recommendation A91-22 deficiency file status (April 2014)

The Board requested that Recommendation A91-22 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 A91-22 needed to be reassessed.

A request for further information was sent to Transport Canada (TC) and a reassessment will be conducted upon receipt of TC's response.

Therefore, the assessment of the response to Recommendation A91-22 remains **Satisfactory in Part**.

Consequently, the status of Recommendation A91-22 is changed to **Active.**

Transport Canada's response to Recommendation A91-22 (July 2015)

Transport Canada agrees with this recommendation.

It was incorporated in the *Canadian Aviation Regulations* (CARs) in 1996, under subsection 602. 115(c).

Transport Canada believes the objectives of the recommendation have been met and suggests closing this item.

TSB reassessment of the response to Recommendation A91-22 (March 2016)

CARs 602.115(c) minimum visibility is 2 statute miles, while most CAT A and B circling visibility minima are between 1.5 and 2.5 statute miles. Therefore, a visual flight rules (VFR) aircraft operating in uncontrolled airspace below 1000 feet above ground level may still be exposed to the possibility of flying in weather conditions worse than that required for an aircraft on an instrument flight rules (IFR) circling approach.

This situation, in turn, does not provide a level of safety at least equivalent to that provided by IFR circling minima and, therefore, does not address the safety deficiency underlying this recommendation.

Therefore, the assessment of the response to Recommendation A91-22 remains **Satisfactory in Part**.

Transport Canada's response to Recommendation A91-22 (January 2017)

TC agrees with this recommendation. It was incorporated in the CARs in 1996 under CAR 602. 115(c).

TC has no further activities planned on this recommendation.

TSB reassessment of Transport Canada's response to Recommendation A91-22 (March 2017)

TC has not offered any new information as to how CAR 602.115(c) provides a level of safety at least equivalent to that provided by IFR circling minima, as identified in Recommendation A91-22. The Board is therefore unable to make a meaningful assessment as to whether the risks associated with the safety deficiency identified in Recommendation A91-22 are reduced or eliminated.

Given the lack of new information, the response to Recommendation A91-22 is assessed as **Unable to Assess**.

Transport Canada's response to Recommendation A91-22 (March 2018)

TC agrees with the recommendation.

In 1996, TC changed the CARs for minimum visibility in controlled and uncontrolled airspace to meet the intent of the recommendation.

> **Minimum Visual Meteorological Conditions for VFR Flight in Uncontrolled Airspace**
>
> **602.115** No person shall operate an aircraft in VFR flight within uncontrolled airspace unless
>
> **(a)** the aircraft is operated with visual reference to the surface;
>
> **(b)** where the aircraft is operated at or above 1,000 feet AGL
>
> (i) during the day, flight visibility is not less than one mile,
>
> (ii) during the night, flight visibility is not less than three miles, and
>
> (iii) in either case, the distance of the aircraft from cloud is not less than 500 feet vertically and 2,000 feet horizontally;
>
> **(c)** where the aircraft is not a helicopter and is operated at less than 1,000 feet AGL
>
> (i) during the day, flight visibility is not less than two miles, except if otherwise authorized in an air operator certificate,
>
> (ii) during the night, flight visibility is not less than three miles, and
>
> (iii) in either case, the aircraft is operated clear of cloud; and
>
> **(d)** where the aircraft is a helicopter and is operated at less than 1,000 feet AGL
>
> (i) during the day, flight visibility is not less than one mile, except if otherwise authorized in an air operator certificate or a flight training unit operator certificate — helicopter,
>
> (ii) during the night, flight visibility is not less than three miles, and
>
> (iii) in either case, the aircraft is operated clear of cloud.

A commercial operator can obtain an operations specification to conduct flight in less than two mile visibility. To be approved, the pilot must meet minimum experience requirements as pilot in command, must have taken a pilot decision-making course, and the aircraft must be equipped with an approved Global Positioning System (GPS).

From TC's perspective, the regulation achieves the aim of the recommendation and the department plans no further action on this issue.

TSB reassessment of Transport Canada's response to Recommendation A91-22 (January 2019)

In its response, Transport Canada indicates that the safety deficiency identified in Recommendation A91-22, regarding the visual flight rules (VFR) weather minima required in uncontrolled airspace to be at least equivalent to that provided by the instrument flight rules (IFR) circling minima, has been addressed as follows:

- In 1996, 5 years after the release of this recommendation, the *Canadian Aviation Regulations (*CARs) came into effect, and changed the regulation that governs civil aviation. More specifically, changes to the VFR weather minima requirements were introduced in subsection 602.115(c) of the CARs, which stipulates that aeroplanes flying at less than 1000 feet above ground level require a visibility of not less than 2 statute miles (sm); and
- In 2006, significant changes to the approach ban affecting commercial operators came into effect. While most published IFR CAT A and B circling minima are between 1.5 and 2.5 sm, the current approach ban for commercial operators, with certain exceptions, allows an approach to be conducted when the visibility is approximately 75% of the runway visual range or published visibility. In the case of a published visibility of 2.5 sm, the reported visibility would need to be approximately 2 sm or greater to conduct an IFR approach. This is equivalent to the VFR weather minima when the aircraft is operated at less than 1000 feet above ground level.

Therefore, the VFR weather minima in uncontrolled airspace is at least equivalent to that provided by IFR circling minima allowances.

The Board believes that the actions taken by Transport Canada have substantially reduced the risk associated with the safety deficiency identified in Recommendation A91-22.

Therefore, the response to Recommendation A91-22 is assessed as **Fully Satisfactory.**

This deficiency file is **Closed**.