



TSB Recommendation A20-01

Landing minima in Canada

The Transportation Safety Board of Canada recommends that the Department of Transport review and simplify operating minima for approaches and landings at Canadian aerodromes.

Air transportation safety investigation report	A18Q0030
Date the recommendation was issued	21 May 2020
Date of the latest response	December 2023
Date of the latest assessment	March 2024
Rating of the latest response	Satisfactory Intent
File status	Active

Summary of the occurrence

On 26 February 2018, a Beechcraft King Air A100 (registration C-GJXF, serial number B-159) operated by Strait Air (2000) Ltd. was conducting charter flight NUK107 under instrument flight rules, from the Sept-Îles Airport, Quebec, to the Havre St-Pierre Airport, Quebec, with 2 crew members and 6 passengers on board. The aircraft conducted an approach to Runway 08, which was snow-covered, while visibility was reduced due to heavy snow showers, and landed approximately 3800 feet beyond the threshold, at approximately 700 feet from the end of the runway. It continued its landing roll beyond the runway until it came to rest in a snowbank, approximately 220 feet beyond the end of the runway. The accident occurred in daylight, at 1120 Eastern Standard Time. The emergency locator transmitter, transmitting on 406 MHz, did not activate following the occurrence. The aircraft sustained substantial damage. Four of the occupants received minor injuries.

The Board concluded its investigation and released report A18Q0030 on 21 May 2020.

Rationale for the recommendation

In designing instrument approaches, the published minimum visibility represents the minimum visibility at which a pilot on approach at the decision height (DH) or the minimum descent altitude (MDA) should be able to establish and maintain the visual reference required up until landing.

International Civil Aviation Organization (ICAO)¹ standards and recommended practices stipulate that an instrument approach shall not be continued unless the reported visibility is at or above the specified minima. These minima are published on approach charts based on the approach type and lighting.

Various civil aviation authorities throughout the world (such as the U.S. Federal Aviation Administration (FAA) and the European Union Aviation Safety Agency (EASA)) have established that the authorized visibility minima are those specified and published for the approach. Therefore, to determine whether an approach is authorized, it is simply a matter of comparing the reported visibility with the visibility published on the approach chart. Consequently, air traffic control (ATC) will not clear an aircraft for approach if the reported visibility is less than what is published on the approach chart.

In Canada, visibilities published on approach charts are provided for information purposes only.

To determine whether an aircraft can legally land at an aerodrome in Canada, consideration must first be given to the operational restrictions that apply to the aerodrome in question to ensure that the aerodrome is suitable for the manoeuvre being executed.² One of the determining factors is the aerodrome's operating visibility, which is defined in the *Canada Air Pilot* (CAP 5) in the general pages pertaining to operating minima.³ This operating visibility limit is published in the *Canada Flight Supplement* (CFS), specifically in the box reserved for runway information. If an aerodrome's operating visibility limit is not published in the CFS, it means that operations are not authorized when visibility is less than ½ statute mile (SM).

Next, the minimum visibility for an approach ban must be calculated to determine whether the approach can continue to the DH or the MDA. This minimum visibility is calculated based on the visibility published on the approach chart, and varies depending on the type of operations:

- ¾ of the published visibility for commercial operators;
- ½ of the published visibility for commercial operators who have Operations Specification 019 regarding reduced visibility;
- ¼ SM for private operators, regardless of the approach being conducted.

According to this calculation, the minimum visibility for an approach ban in Canada is less than the visibility published on the approach chart in every case. Consequently, it is likely that, once at the DH or MDA, pilots are not able to establish the required visual reference that will help them make a safe landing.

¹ International Civil Aviation Organization, Annex 6 to the Convention on International Civil Aviation, Eleventh Edition (July 2018), *Operation of Aircraft*, Part I, Chapter 4.

² Transport Canada, SOR/96-433, *Canadian Aviation Regulations*, paragraph 602.96(2)(b).

³ NAV CANADA, *Canada Air Pilot* (CAP), CAP 5: Quebec (in effect from 01 February to 29 March 2018), p. 16-18.

Between December 2006⁴ and December 2019, 31 incidents occurred following approaches conducted below the MDA with few visual references. Of these 31 incidents, 17 occurred during a landing in weather conditions where visibility was below what is published on the approach chart.⁵ Furthermore, this situation continues to occur today: 9 of the 17 incidents have occurred within the past 5 years.

In Canada, due to the complexity and variations in minima based on the type of operations, it is difficult for ATC to determine whether the planned approach is banned. It will clear an aircraft for approach regardless of the published minima, contrary to what is done elsewhere in the world. Therefore, it is up to the captain to interpret the approach ban, and it is the captain who decides whether or not to continue with the approach.

In this occurrence, based on his interpretation of numerous conditions and exceptions relating to the approach ban, the captain incorrectly believed that he was allowed to conduct the approach. The first officer was aware that weather conditions were below the approach minima published in the CAP, but he did not understand all of the details involved in the approach ban. He was therefore unable to challenge the captain's decision to conduct the approach, and the captain continued the approach beyond the final approach fix when the reported visibility was below the approach ban minima. The captain then proceeded with the landing sequence without seeing or knowing the length of the remaining runway ahead and unable to accurately assess the aircraft's position.

Given that it was difficult for the flight advisory service and the aerodrome operator to determine whether the approach was banned, they could not inform the pilots that the approach was banned under the existing conditions, despite the fact that visibility was one quarter of what was published on the approach chart.

Therefore, if Transport Canada (TC) does not simplify approach and landing operating minima, flight crews may proceed with an approach that is actually banned, thereby increasing the risk of approach-and-landing accidents, including runway overruns.

Therefore, the Board recommended that

the Department of Transport review and simplify operating minima for approaches and landings at Canadian aerodromes.

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⁴ Implementation date for landing minima regulations (CARs section 602.128) and approach ban regulations (CARs section 602.129).

⁵ After these 17 occurrences, the TSB published the following aviation investigation reports: A08W0237, A08O0333, A09Q0203, A12Q0216, A14A0067, A15O0015, A15H0002, A16A0041, and A18Q0030.

Previous responses and assessments

August 2020: response from Transport Canada

The two recommendations are related and will be addressed in a single response.

TC agrees with Recommendation A20-01 and, as outlined below, has already initiated work to implement improvements to the regulations governing approaches and landings at Canadian aerodromes.

TC also agrees with Recommendation A20-02. While recognizing that it may be difficult to stop all approaches and landings that are prohibited through the regulations, introducing simpler regulations in keeping with Recommendation A20-01 will make them easier to follow and to enforce. Furthermore, TC will investigate possible improvements to education and enforcement as part of its upcoming work in this area.

The safety issues raised by the two recommendations are not unknown to TC. The complexity of the current approach ban regulations, promulgated in 2006, are the result of multiple compromises following consultations with industry to reflect the diverse realities facing Air Operators. As such, TC has already carried out significant work on this issue in the past five years:

In 2015, TC developed an issue paper that was presented to the National Civil Aviation Management Executive Committee (NCAMX) recommending that the regulations should be revised to harmonize with international standards, and to update standards for calculating approach visibility.

In November 2017, TC developed, and circulated through the Canadian Aviation Regulation Advisory Council (CARAC), a Preliminary Issue and Consultation Assessment (PICA) to establish a better understanding of industry concerns and to assist with regulatory development.

In January 2018, the Assessment concluded that there was a need for consultation with all stakeholders through focus groups and to support to [sic] the harmonization with international standards and best practices.

Due to the complexity of the issue, stakeholders raised specific concerns related to the workload associated with implementation; potential service impacts in the North if changes to the approach ban are not done alongside infrastructure improvements; applicability of the changes to the approach ban to helicopter operations; and the need to harmonize proposed changes to the approach ban with changes to lighting standards.

Due to other competing priorities, this was the most recent work carried out by TC on this issue.

TC recognizes that more work needs to be done to mitigate the risks. To this end, revisions to the approach ban regulations (A20-01) must precede steps to ensure the new regulations are followed (A20-02). Building on the aforementioned work and comments received from stakeholders, TC is forming, and will lead, an industry working group on this issue. The working group will have the mandate to deliver on the following:

Update to TP308/GPH209 - Criteria for the Development of Instrument Procedures⁶ to support new regulations with approach visibility calculations that account for runway approach lighting systems;

Notice of Proposed Amendment (NPA) to update approach ban regulations as well as the supporting documentation and guidance; and,

Review of potential measures to encourage and enforce compliance with updated approach ban regulations considering all tools in the regulatory toolbox and the experience of other jurisdictions.

In order to produce the deliverables above, the work will be divided into two phases:

The first phase will involve a Policy review of the situation and will culminate with a Policy Discussion Paper and a Focus Group(s) with industry.

During the second phase, the working group will begin the regulatory development that includes an NPA to be completed by January 2021 and have the draft instructions and the pre-publication of the new regulation in *Canada Gazette* Part I by the end of 2021. The final publication in *Canada Gazette* Part II will be approximately one year after Part I.

November 2020: TSB assessment of the response (Satisfactory Intent)

In its response, Transport Canada (TC) indicated that it agrees with Recommendation A20-01 and has already initiated work to implement improvements to the regulations governing approaches and landings at Canadian aerodromes.

TC also recognizes that more work needs to be done to mitigate the risks associated with the safety deficiency identified in Recommendation A20-01, and will lead an industry working group that will draft a Notice of Proposed Amendment to update approach ban regulations, as well as the supporting documentation and guidance. TC expects to publish the proposed regulations in the *Canada Gazette*, Part I, by the end of 2021.

⁶ TP 308 can be accessed by following the procedure in Section 6 of AC 803-001 – *Transport Canada Publication TP308/GPH209 – Change 7.2 Criteria for the Development of Instrument Procedures* (Available at: <https://tc.canada.ca/en/aviation/reference-centre/advisory-circulars/advisory-circular-ac-no-803-001#6>)

The Board is encouraged by TC's planned actions to address the safety issues associated with the complexity of the landing minima in Canada. These actions, when fully implemented, have the potential to substantially mitigate the risks associated with the safety deficiency identified in Recommendation A20-01.

Therefore, the Board considers the response to Recommendation A20-01 to show **Satisfactory Intent**.

December 2021: response from Transport Canada

Transport Canada (TC) agrees with the recommendation.

Prior to the issuance of the recommendation in May 2020, TC was aware of the safety issues raised by this recommendation and has already carried out significant work on this issue since 2015 by:

Developing an issue paper that was presented to the National Civil Aviation Management Executive Committee (NCAMX) recommending that the regulations should be revised to harmonize with international standards, and to update standards for calculating approach visibility,

Developing, and circulating through the Canadian Aviation Regulation Advisory Council (CARAC), a Preliminary Issue and Consultation Assessment (PICA) to establish a better understanding of industry concerns and to assist with regulatory development and by,

Concluding that there was a need for consultation with all stakeholders through focus groups and to support the harmonization with international standards and best practices.

As mentioned in our initial response in August 2020, the Department recognized that more work needs to be done to mitigate the risks and has committed to:

Update TP308/GPH209 – Criteria for the Development of Instrument [Procedures] to support new regulations with approach visibility calculations that account for runway approach lighting systems and;

Amend the *Canadian Aviation Regulations* (CARs) to update approach ban regulations, as well as the supporting documentation and guidance.

TC has made significant headway in the regulatory development process in the last 6 months. A Notice of Proposed Amendments (NPA 2021-011)⁷ was released for public consultation. The consultation period extended from July 6th to October 15th, with 11 submissions received. A 2-hour virtual Question and Answer session was held on October 7th with over 150 participants, and several TC subject matter experts. TC is compiling all of the information received during the consultation process and using this feedback to move to the next step in the regulatory development process – publication in the *Canada Gazette* Part I in the fall of 2022.

The amendments to the CARs proposed in this NPA would introduce prescribed approach visibility minimum requirements in Canada. Changing Canada’s approach visibility minima from advisory to prescribed is the recommended option for addressing the TSB recommendations noted in this NPA, and for achieving safety benefits that are applicable to all operations in Canada. This national approach would allow for a clearer, simpler set of rules for all operators in Canada, while further aligning with ICAO and international partners.

March 2022: TSB assessment of the response (Satisfactory Intent)

In its response, Transport Canada (TC) indicated that it agrees with Recommendation A20-01. As a result of comments received during the consultation period following the publication of Notice of Proposed Amendment (NPA) 2021-011, it has initiated the regulatory process to simplify the operational minima for approaches and landings at Canadian aerodromes.

TC is developing the amendment to the *Canadian Aviation Regulations* for publication in the *Canada Gazette*, Part I in the fall of 2022. If, when implemented, the new requirements are consistent with those published in NPA 2021-011, the regulatory amendments will substantially reduce or eliminate the risks associated with the safety deficiency identified in Recommendation A20-01.

Therefore, the response to Recommendation A20-01 is assessed as **Satisfactory Intent**.

January 2023: response from Transport Canada

Transport Canada (TC) agrees with the recommendation.⁸

⁷ Transport Canada (2021). Notice of Proposed Amendment (NPA) 2021-011 – *Approach Ban*. Available via the CARAC Website: <https://tc.canada.ca/en/corporate-services/acts-regulations/list-regulations/canadian-aviation-regulations-sor-96-433/canadian-aviation-regulation-advisory-council-carac>

⁸ All responses are those of the stakeholders to the TSB in written communications and are reproduced in full. The TSB corrects typographical errors and accessibility issues in the material it reproduces without indication but uses brackets [] to show other changes or to show that part of the response was omitted because it was not pertinent.

Prior to the issuance of the recommendation in May 2020, TC was aware that approach and landing accidents have been identified by the Transportation Safety Board of Canada (TSB) as an important issue that poses a definite risk to Canada's transportation system. The current Canadian approach ban regulations are excessively complex and cumbersome. Pilots find the current regulations to be difficult to understand and apply; this increases pilot workload during a critical phase of flight (approach and landing), thereby increasing the possibility of pilot confusion and error. Moreover, Canada's current approach ban regulations do not conform to the International Civil Aviation Organization (ICAO) Standards and the corresponding regulations established by civil aviation authorities around the world, including the Federal Aviation Administration (FAA), the European Aviation Safety Agency (EASA), etc. As such, TC has already carried out significant work on this issue since 2015 by:

- Developing an issue paper that was presented to the National Civil Aviation Management Executive Committee (NCAMX) recommending that the regulations should be revised to harmonize with international standards, and to update standards for calculating approach visibility,
- Developing, and circulating through the Canadian Aviation Regulation Advisory Council (CARAC), a Preliminary Issue and Consultation Assessment (PICA) to establish a better understanding of industry concerns and to assist with regulatory development and by,
- Concluding that there was a need for consultation with all stakeholders through focus groups and to support the harmonization with international standards and best practices.

TC is therefore proposing changing Canada's approach visibility minima from advisory to prescribed approach visibility minima. This national approach will allow for a clearer, simpler set of rules for all operators in Canada. It will also align Canada's approach ban regulations with the ICAO Standards and the regulations established by our international partners.

The TSB specifically highlighted the complexity associated with the two, separate, non-aligned decision making processes currently needed to determine whether visibility is suitable for an approach and landing (i.e., two processes are necessary to ensure compliance with both the approach ban and minimum aerodrome operating visibility requirements). To address this, TC is proposing the new provisions in the CARs related to Approach Ban will now prescribe required visibility in a simple and straight-forward manner. Simply put, the required visibility will now be the visibility published on the instrument approach procedure.

In addition, to further simply the decision-making process for pilots, TC is also proposing to align:

- the hierarchy used to determine aerodrome operating visibility (stipulated in the CAP GEN and Advisory Circular (AC) 602-002 – Aerodrome operating visibility) during the arrival phase (i.e., approach, landing and taxi after landing); and
- the newly developed visibility criteria specified in the CARs – Approach Ban.

Beyond simply addressing the issue of visibility during the approach phase, TC has also completed a comprehensive review of visibility requirements for all phases of flight. As a result, TC is also proposing to address an additional opportunity to simplify the decision-making process for pilots. As a result, for the departure phase (i.e., pushback, taxi prior to take-off and take-off) TC is also proposing to align:

- the hierarchy used to determine aerodrome operating visibility; and
- the visibility criteria specified in the CARs – Take-off Minima.

In the last 12 months, TC has also made progress towards meeting the commitments made in our last communication in December 2021. These were to:

1. Update TP308/GPH209 – Criteria for the Development of Instrument [Procedures] to support new regulations with approach visibility calculations that account for runway approach lighting systems.
2. Amend the *Canadian Aviation Regulations* (CARs) to update approach ban regulations as well as the supporting documentation and guidance.

In support of the first commitment, TC has completed a draft amendment for Volume 1, Chapter 3, Take-off and Landing Minima, based on the current US FAA procedure design criteria.

Relevant changes include the following:

- Approach visibility minima to be determined based on approach type, aircraft category, height above touchdown zone, approach light system classification, distance from the missed approach point or decision altitude to the runway threshold, and runway edge light intensity.
- A mechanism to ensure the charted approach visibility minima is never less than the minimum aerodrome operating visibility for the runway or surface of intended use.

This draft amendment to Volume 1, Chapter 3 will be made available for industry consultation at the same time as the regulations go to the *Canada Gazette*, Part I. Prior to this material becoming effective, Advisory Circular 803-001⁹ will need updating to announce the release of this next TP308 change.

Concerning the second commitment, in the last 12 months, TC has prepared drafting instructions for the proposed regulations which were submitted to the Department of Justice at the end of 2022. These have been developed by a multi-disciplinary team of subject matter experts and with comments received from consultation on Notice of Proposed Amendment

⁹ Transport Canada (2022). Advisory Circular (AC) No. 803-001 – *Transport Canada Publication TP308/GPH209 - Change 8.1 Criteria for the Development of Instrument Procedures*. Available at: <https://tc.canada.ca/en/aviation/reference-centre/advisory-circulars/advisory-circular-ac-no-803-001>

(NPA) 2021-011¹⁰. These proposed amendments would include a complete re-write of the section of the CARs related Approach Ban.

To support the implementation of the proposed regulations and the associated changes being made to aerodrome operating visibility requirements, TC is currently developing the following required guidance documents necessary to support implementation¹¹:

- AC 602-006 – Approach Ban: This new Advisory Circular will provide guidance on the regulatory amendments. For each provision that has been modified this AC will provide: the text; the rationale, and an explanation of the practical application of the provision.
- AC 602-002 – *Aerodrome Operating Visibility: Guidance for flight operations personnel*¹² – This document is undergoing complete revision, with the addition of several new appendices.

The guidance for airport operators is being reviewed, revised, and consolidated. Documents under revision include:

- AC 302-001 – *Publication of the Level of Service with Respect to Departure Below RVR 2600 (½ Statute Mile)*¹³; and
- AC 302-006 – *Publication of Special Reduced/Low Visibility Procedures in the appropriate Aeronautical Information Publication(s)*¹⁴.

TC is developing new text for the CAP GEN respecting:

- New provisions in the CARs – Approach Ban; and
- New aligned criteria for minimum aerodrome operating visibility.

As next steps, TC is planning to pre-publish the Regulations Amending the *Canadian Aviation Regulations* (Approach Ban) in the *Canada Gazette*, Part I, in late 2023. In support of this commitment to amend the CARs, TC will continue the development of guidance materials:

¹⁰ Transport Canada (2021). Notice of Proposed Amendment (NPA) No. 2021-011 – *Approach Ban*. Available through the CARAC Website: <https://tc.canada.ca/en/corporate-services/acts-regulations/list-regulations/canadian-aviation-regulations-sor-96-433/canadian-aviation-regulation-advisory-council-carac>

¹¹ Note: Key guidance documents will be made available for industry consultation at the same time that the regulations go to *Canada Gazette*, Part I.

¹² Transport Canada (2011). Advisory Circular (AC) No. 602-002 – *Aerodrome Operating Visibility*. Available at: <https://tc.canada.ca/en/aviation/reference-centre/advisory-circulars/advisory-circular-ac-no-602-002>

¹³ Transport Canada (2017). Advisory Circular (AC) No. 302-001 – *Publication of the Level of Service with Respect to Departure Below RVR 2600 (½ Statute Mile)*. Available at: <https://tc.canada.ca/en/aviation/reference-centre/advisory-circulars/advisory-circular-ac-no-302-001>

¹⁴ Transport Canada (2009). Advisory Circular (AC) No. 302-006 – *Publication of Special Reduced/Low Visibility Procedures in the appropriate Aeronautical Information Publication(s)*. Available at: <https://tc.canada.ca/en/aviation/reference-centre/advisory-circulars/advisory-circular-ac-no-302-006>

- Review and revise as necessary all text in the Canada Flight Supplement (CFS) respecting minimum aerodrome operating visibility (i.e., runway level of service).
- Review and update sections with guidance on approach ban in the TC Aeronautical Information Manual¹⁵ (TC AIM) (including 9.19.1 –Takeoff Minima, and 9.19.2 – Approach Ban).
- Update differences from ICAO Standards in the Aeronautical Information Publication (AIP) GEN¹⁶, Section 1.6.1 – National Regulations, and add guidance on approach ban.
- Guidance for flight operation personnel on Enhanced Flight Vision Systems (EFVS) Operations, CAT 1 1800 RVR, and SA (CAT I).
- Develop an Aviation Safety Letter (ASL) on approach ban.

Finally, TC will prepare for Information Sessions for external stakeholders to coincide with *Canada Gazette*, Part I publication.

March 2023: TSB assessment of the response (Satisfactory Intent)

In its response, Transport Canada (TC) reiterated that it agrees with Recommendation A20-01.

TC is proposing to change Canada’s approach visibility minima from advisory to prescribed. This national approach will allow for a clearer, simpler set of rules for all operators in Canada. It will also align Canada’s approach ban regulations with the International Civil Aviation Organization’s Standards and the regulations established by our international partners.

In the last 12 months, TC has also made progress towards meeting the commitments made in December 2021. These were to:

1. Update TP308/GPH209 – *Criteria for the Development of Instrument Procedures* to support new regulations with approach visibility calculations that account for runway approach lighting systems.
2. Amend the *Canadian Aviation Regulations* (CARs) to update approach ban regulations as well as the supporting documentation and guidance.

In support of the first commitment, TC has completed a draft amendment for Volume 1, Chapter 3 of TP308/GPH209: Take-off and Landing Minima, based on the current U.S. Federal Aviation Administration procedure design criteria. Relevant changes include the following:

- Approach visibility minima to be determined based on approach type, aircraft category, height above touchdown zone, approach light system classification,

¹⁵ Transport Canada (2022). Transport Canada Publication (TP) No. 14371 – *Transport Canada Aeronautical Information Manual (TC AIM)*. Available at: <https://tc.canada.ca/en/aviation/publications/transport-canada-aeronautical-information-manual-tc-aim-tp-14371>

¹⁶ NAV CANADA (2022). *Aeronautical Information Publication – General (AIP GEN)*. Available at : <https://www.navcanada.ca/en/aeronautical-information/aip-canada.aspx>

distance from the missed approach point or decision altitude to the runway threshold, and runway edge light intensity.

- A mechanism to ensure the charted approach visibility minima is never less than the minimum aerodrome operating visibility for the runway or surface of intended use.

TC will make this draft amendment available for industry consultation at the same time as the regulations go to the *Canada Gazette*, Part I. Prior to this material becoming effective, Advisory Circular 803-001 will be updated to announce the release of this next TP308 change.

Concerning the second commitment, TC has prepared drafting instructions for the proposed regulations, which were submitted to the Department of Justice at the end of 2022. These proposed amendments would include a complete re-write of the section of the CARs related Approach Ban.

As next steps, TC is planning to pre-publish the Regulations Amending the *Canadian Aviation Regulations* (Approach Ban) in the *Canada Gazette*, Part I in late 2023. In support of this commitment to amend the CARs, TC will continue to develop guidance materials:

- Review and revise as necessary all text in the *Canada Flight Supplement* respecting minimum aerodrome operating visibility (i.e. runway level of service).
- Review and update sections with guidance on approach bans in the *Transport Canada Aeronautical Information Manual* (including RAC – Rules of the Air and Air Traffic Services sections 9.19.1 – Takeoff Minima and 9.19.2 – Approach Ban).
- Update differences from ICAO Standards in the *Aeronautical Information Publication GEN*, Section 1.6.1 – National Regulations, and add guidance on approach ban.
- Guidance for flight operation personnel on Enhanced Flight Vision Systems Operations, CAT 1 1800 RVR, and SA (CAT I).
- Develop an *Aviation Safety Letter* on approach ban.

The Board is encouraged by the considerable progress TC has made towards simplifying operating minima for approaches and landings at Canadian aerodromes, and it recognizes the numerous initiatives TC has taken to produce the guidance material and support documentation required.

These actions, when fully implemented, have the potential to substantially reduce or eliminate the risks associated with the safety deficiency identified in Recommendation A20-01.

Therefore, the Board considers the response to Recommendation A20-01 to show **Satisfactory Intent**.

Latest response and assessment

December 2023: response from Transport Canada

Transport Canada (TC) agrees with the recommendation and has been working steadily to improve safety during the approach and landing phase of flights in Canada.

TC's last update, dated January 19, 2023, included a progress summary of the work done between 2015 and 2022 towards the goal of addressing safety issues related to Canada's approach ban regulations.

Key elements of this work included:

- Preparing and consulting key industry stakeholders on a Preliminary Issue and Consultation Assessment (PICA) in 2017 to establish a better understanding of the issue and gather initial stakeholder feedback;
- Adding the Regulations Amending the *Canadian Aviation Regulations* (Approach Ban)¹⁷ to TC's Forward Regulatory Plan in 2021;
- Releasing Notice of Proposed Amendments (NPA) No. 2021-011,¹⁸ in which the national implementation of prescribed approach visibility minima was formally proposed, to the Canadian Aviation Regulation Advisory Council (CARAC) membership for 12 weeks of consultation in 2021; and,
- Completing a comprehensive review of visibility requirements for all phases of flight in late 2021 and early 2022, with the goal of simplifying operating minima for approaches and landings for the end user. This led to TC's proposal to **align the hierarchy of visibility reports** used by pilots for all phases of flight: initial pushback, taxi prior to take-off, take-off, approach and landing, and taxi after landing. Fundamentally, this means that the hierarchies of visibility reports are aligned for:
 - Take-off: Modification of the hierarchy of visibility reports provided in Section 602.126 of the *Canadian Aviation Regulations* (CARs);
 - Approach: Modification of the hierarchy of visibility reports provided in Section 602.129 of the CARs, and
 - Runway level of service: Modification of the hierarchy of visibility reports for the departure and arrival phases of flight to align with Sections 602.126 and 602.129 of the CARs, respectively.

¹⁷ Transport Canada (2023). Forward Regulatory Plan - Regulations Amending the *Canadian Aviation Regulations* (Approach Ban). Available at: https://tc.canada.ca/en/corporate-services/acts-regulations/forward-regulatory-plan/aviation-initiatives-planned#toc3_1_9

¹⁸ Transport Canada (2021). Notice of Proposed Amendment (NPA) No. 2021-011 – Approach Ban. Available through the CARAC Website : <https://tc.canada.ca/en/corporate-services/acts-regulations/list-regulations/canadian-aviation-regulations-sor-96-433/canadian-aviation-regulation-advisory-council-carac>

In TC's last update, TC made four commitments regarding recommendation A20-01. TC has made significant progress towards fulfilling these commitments and shares the understanding of the important safety imperative that drives this recommendation.

TC's ongoing progress and plans are described below.

Commitment 1: *TC is proposing to change Canada's approach visibility minima from advisory to prescribed approach visibility minima and will amend the Canadian Aviation Regulations (CARs) to update approach ban regulations. TC is planning to pre-publish the Regulations Amending the Canadian Aviation Regulations (Approach Ban) in the Canada Gazette, Part I, in late 2023.*

Progress made: TC has made significant progress towards meeting this commitment. Since January 2023, the Team has:

- Worked closely with legislative drafters at the Department of Justice (DoJ) to develop the proposed amendments to the CARs that will be pre-published in the *Canada Gazette, Part I*. This work with the DoJ has helped to identify other opportunities for improvement in the CARs, which are also being addressed;
- Continued to collaborate closely with NAV CANADA to work towards a coordinated implementation of new regulations;
- Submitted an outline of the regulatory initiative¹⁹ to the Treasury Board Secretariat (TBS) for approval, and begun drafting the Regulatory Impact Analysis Statement (RIAS);
- Held public information and question and answer sessions held in both English (September 2023) and French (October 2023); and
- Held targeted external and internal engagement sessions to collaborate with different subgroups of stakeholders between May and November 2023.

The Team is considering all stakeholder feedback received in response to these consultation sessions. TC received widespread support for this safety initiative, especially from the largest subpart 705 airlines and many in the general aviation sector. We have also received suggestions to consider and questions about the operational impact of the new regulations.

Significant concern has been raised respecting the impact of the new regulations on remote communities where weather reports are not available. The Team is examining the suggestions received in view of the operational realities of these aerodromes and the need for accessibility for remote communities. Our objective is to provide the highest degree of operational flexibility while ensuring that the critical safety imperative is addressed. Actions taken include:

- Making the concerns respecting the limited aerodrome infrastructure known to parties within TC and NAV CANADA who may be able to assistance to help address this issue;

¹⁹ Called a Triage, this document is a required part of TBS' process for approving regulatory initiatives. The Triage is submitted prior to the Regulatory Impact Analysis Statement and gives TBS an early look at the Department's plan.

- Ongoing work to determine how the regulatory proposal can be modified to address the concerns raised (without compromising safety). To this end, the Team has reached out to stakeholders for their input. Meetings have been held with stakeholders, including individual air operators and stakeholder associations. TC's approach to stakeholders includes two key messages: "We are listening", and "We need your help to get the job done!"

Next actions planned: To ensure that there is sufficient time to review and consider all the feedback received from stakeholders, the draft regulations will now be pre-published for consultation in the *Canada Gazette*, Part I (CG I) in the fall of 2024, rather than the Spring of 2024. The earliest that the proposed regulations would come into force would be in the fall of 2025. This additional time is needed to allow TC to:

- Provide more opportunities for stakeholder engagement and communicate the results to the CARAC membership;
- Continue to engage industry stakeholders and solicit feedback; these stakeholders include, but are not necessarily limited to CARAC membership – which is open to everyone (via registration on the CARAC website), industry associations, First Nations Peoples, and provincial and territorial governments;
- Complete and make public the What We Heard Report, and the Q & A document, which will provide responses to the questions received during our September 6th and October 4th information sessions; and
- Continue the ongoing development of the associated guidance material by integrating the feedback received from stakeholders, including the responses to the most frequently asked questions.

Over the next year, and in addition to the above, the Team will:

- Complete the development of draft regulations with the DoJ by August 2024;
- Coordinate with NAV CANADA as they begin their work re-assessing their inventory of instrument approach procedures using the new TP308/GPH209 – Change 9.0 (Change 9.0 is discussed in more detail below in response to commitment 4); and
- Obtain TBS approval on the Triage and the RIAS towards pre-publication of the Regulations Amending the *Canadian Aviation Regulations* (Approach Ban) in the *Canada Gazette*, Part I in the fall of 2024.

Commitment 2: *TC will prepare for Information Sessions for external stakeholders to coincide with Canada Gazette, Part I publication.*

Progress made: During the Spring, Summer and Fall of 2023, the Team engaged extensively with stakeholders to ensure that their feedback was incorporated into the regulatory proposal well in advance in pre-publication in the *Canada Gazette*, Part I.

This included consultations with hundreds of stakeholders, including air operators, airport operators, pilots, industry associations, flight instructors, medevac operators, and provincial and territorial government representatives.

Work has recently begun on a public educational information session that the Team will run in English and French in the early fall of 2024 before prepublication in CG I.

Next actions planned: TC will advertise these sessions to the CARAC membership; these sessions will be open to the public.

Commitment 3: *TC is currently developing the required guidance documents (Canada Flight Supplement, TC Aeronautical Information Manual, Aviation Safety Letter, etc.) necessary to support the implementation of the proposed regulations and the associated changes being made to aerodrome operating visibility requirements.*

Progress made: In 2023, the subject matter experts on the Approach Ban Safety Team have continued drafting the following guidance documents necessary to support implementation, align aviation documents and/or educate end users of the regulatory changes:

- AC 602-006 – *Approach Ban*: This new Advisory Circular (AC) will provide detailed guidance on the regulatory amendments. The focus of this document is to provide information that is easy for pilots to understand and apply operationally. A special appendix provides the text of each new or modified provision, the rationale for the change, and an explanation of the practical application of the provision.
- AC 602-002 – *Runway Level of Service: Guidance for flight operations personnel* – This document is undergoing complete revision to provide information that is easier to understand and apply in an operational context. The term *Runway Level of Service* would be used instead of *Aerodrome Operating Visibility* to align with the information that is provided for operational use in the *Canada Flight Supplement*;
- Two advisory circulars for airport operators are being reviewed, revised and combined into a single document:
 - AC 302-001 – Publication of the Level of Service with Respect to Departure Below RVR 2600 (½ Statute Mile);
 - AC 302-006 – Publication of Special Reduced/Low Visibility Procedures in the appropriate Aeronautical Information Publication(s).
- New text for the Canada Air Pilot General Pages (CAP GEN) respecting:
 - New provisions in the CARs – Approach Ban; and
 - New aligned hierarchy of visibility reports for runway level of service.

Next actions planned: Over the next year, the Team will continue to develop these documents with the goal of releasing them for consultation to the CARAC membership at the same as the draft regulations are pre-published in CG I.

Stakeholder understanding, education and awareness are crucial components to the success of this initiative. The Team is preparing content for a special issue of the *Aviation Safety Letter*, planned for release in the first half of 2024. The following articles have been completed or are currently under development:

- Guest editorial that provides an overview of the approach ban safety initiative;
- Explanation of the compelling safety case;
- The human factors related to approach accidents;
- Description of the consultation process / Explanation of CARAC / Encouraging stakeholders to participate;
- Explanation of how TC is harmonizing the visibility requirements for all phases of flight;
- Explanation of how IAP design criteria are being improved and TC's collaborative work with NAV CANADA;
- Explanation of how runways with special lighting will support CAT I instrument approaches with RVR 1800; and
- Explanation of enhanced flight vision systems (EFVS) and modern technologies.

The need to also revise the guidance information in several other documents has also been identified and planned (*Canada Flight Supplement, TC Aeronautical Information Manual, CAP GEN*).

Commitment 4: *TC will update TP308/GPH209 – Criteria for the Development of Instrument Procedures to support new regulations with approach visibility calculations that account for runway approach lighting systems.*

Progress made: The following actions were taken towards this commitment:

- The draft amendments to TP308/GPH209 – Change 9.0 was shared with NAV CANADA, external design organizations, and the Department of National Defense in advance of public consultation on the changes.
- In June 2023, Notice of Proposed Amendment (NPA) 2023-009 – Amendments to TP 308 / GPH 209 – Change 9.0²⁰ was made available online for public consultation, and this was communicated to the CARAC membership. The consultation period lasted for 60 days. TC reviewed and addressed the comments and have finalized the updated version of TP308. Change 9.0 will be published on January 1, 2024, and the content related to the development of prescribed instrument approach visibility will come into effect at the same time as the Regulations Amending the *Canadian Aviation Regulations* (Approach Ban). This is specifically noted within TP308.
- Advisory Circular AC 803-001, Issue 14 – *TP308/GPH209 – Criteria for the Development of Instrument Procedures* was completed and distributed to the CARAC membership on

²⁰ Transport Canada (2023). Notice of Proposed Amendment (NPA) No. 2023-009 – Amendment to TP 308 / GPH 209 – Change 9.0. Available through the CARAC Website: <https://tc.canada.ca/en/corporate-services/acts-regulations/list-regulations/canadian-aviation-regulations-sor-96-433/canadian-aviation-regulation-advisory-council-carac>

November 1, 2023. This document will come into effect at the same time as TP 308 – January 1, 2024.

- Additionally, a Notice of Proposed Amendments to TP 312 – *Aerodrome Standards and Recommended Practices* has also been drafted. This amendment proposes modifications to the definitions for precision runways to facilitate the introduction of the new instrument approach procedures that will benefit from the changes to TP 308 described above. The NPA will be made available online for public consultation and shared with the CARAC membership by the end of 2023.

March 2024: TSB assessment of the response (Satisfactory Intent)

In its latest response, Transport Canada (TC) reiterated that it agrees with Recommendation A20-01.

In its January 2023 response, TC had made 4 commitments to address this recommendation. Since then, as detailed in its latest update, TC has made significant progress and is continuing to work towards fulfilling these commitments.

TC's first commitment was to propose to change Canada's approach visibility minima from advisory to prescribed, and amend the *Canadian Aviation Regulations* (CARs) accordingly. To date, TC has

- worked with the Department of Justice to develop proposed amendments to the CARs, which are planned to be completed by August 2024;
- collaborated with NAV CANADA on a coordinated implementation of the new regulations; and
- held public information sessions as well as targeted external and internal engagement sessions to collaborate with various subgroups of stakeholders.

TC will review and consider all the feedback received from stakeholders, and plans to obtain approval from the Treasury Board of Canada Secretariat on the Triage and the Regulatory Impact Analysis Statement towards pre-publication of the Regulations Amending the *Canadian Aviation Regulations* (Approach Ban). The draft regulations are expected to be pre-published for consultation in the *Canada Gazette*, Part I in mid-2025.

TC's second commitment was to prepare information sessions for external stakeholders to coincide with the pre-publication of the draft regulations in the *Canada Gazette*, Part I. To date, TC has engaged with stakeholders, including air operators, airport operators, pilots, and industry associations, to ensure that their feedback is incorporated into the regulatory proposal. TC will run public educational information sessions in early fall of 2024.

TC's third commitment was to continue to develop guidance documents required to support the implementation of the proposed regulations and the associated changes being made with the goal of releasing them for consultation to the Canadian Aviation Regulation Advisory Council membership at the same time as the draft regulations are pre-published in the *Canada Gazette*, Part I. In 2023, TC drafted various Advisory Circulars, and proposed new text for the *Canada Air*

Pilot, General Pages. TC is preparing content for a special issue of the *Aviation Safety Letter*, which is planned for the first half of 2024. TC has also identified other guidance documents, such as the *Canada Flight Supplement* and the *Transport Canada Aeronautical Information Manual*, which will need revision.

TC's fourth commitment was to update the *Criteria for the Development of Instrument Procedures* (TP 308/GPH 209), to support new regulations with approach visibility calculations that account for runway approach lighting systems. TC coordinated with NAV CANADA as it worked on reassessing its inventory of instrument approach procedures using the new TP 308/GPH 209, Change 9.0. Change 9.0 was published on 01 January 2024, and the content related to the development of prescribed instrument approach visibility will come into effect at the same time as the Regulations Amending the *Canadian Aviation Regulations* (Approach Ban).

In addition, TC published *Notice of Proposed Amendment (NPA) No. 2023-016 – Amendments to TP 312: Precision Runway Definitions* in December 2023. The NPA proposes modifications to the definitions for precision runways to facilitate the introduction of the new instrument approach procedures that will benefit from the changes to TP 308/GPH 209.

The Board is pleased with these regulatory developments and acknowledges the amount of work and effort made by TC to address this recommendation. These actions, when fully implemented, have the potential to substantially mitigate the risk associated with the safety deficiency identified in this recommendation.

Therefore, the Board considers the response to Recommendation A20-01 to show **Satisfactory Intent**.

File status

The TSB will continue to monitor the progress of TC's actions to mitigate the risk associated with the safety deficiency identified in Recommendation A20-01, and it will reassess the response to the recommendation on an annual basis or when otherwise warranted.

This deficiency file is **Active**.