



TSB Recommendation A16-12

Oversight of commercial aviation in Canada: Implementation of formal safety management system

The Transportation Safety Board of Canada recommends that the Department of Transport require all commercial aviation operators in Canada to implement a formal safety management system.

Air transportation safety investigation report	A13H0001
Date the recommendation was issued	15 June 2016
Date of the latest response	September 2023
Date of the latest assessment	February 2024
Rating of the latest response	Satisfactory in Part
File status	Active

Summary of the occurrence

On 31 May 2013, at approximately 0011 Eastern Daylight Time, the Sikorsky S-76A helicopter (registration C-GIMY, serial number 760055), operated as Lifeflight 8, departed at night from Runway 06 at the Moosonee Airport, Ontario, on a visual flight rules flight to the Attawapiskat Airport, Ontario, with 2 pilots and 2 paramedics on board. As the helicopter climbed through 300 feet above the ground toward its planned cruising altitude of 1000 feet above sea level, the pilot flying commenced a left-hand turn toward the Attawapiskat Airport, approximately 119 nautical miles to the northwest of the Moosonee Airport. Twenty-three seconds later, the helicopter impacted trees and then struck the ground in an area of dense bush and swampy terrain. The aircraft was destroyed by impact forces and the ensuing post-crash fire. The helicopter's satellite tracking system reported a takeoff message and then went inactive. The search-and-rescue satellite system did not detect a signal from the emergency locator transmitter (ELT). At approximately 0543, a search-and-rescue aircraft located the crash site approximately 1 nautical mile northeast of Runway 06, and deployed search-and-rescue technicians. However, there were no survivors.

The Board concluded its investigation and released report A13H0001 on 15 June 2016.

Rationale for the recommendation

Transportation companies have a responsibility to manage safety risks in their operations. Compliance with regulations can only provide a baseline level of safety for all operators in a given sector. Since regulatory requirements cannot address all risks associated with a specific operation, companies need to be able to identify and address the hazards specific to their operation.

In the traditional oversight model, companies are not required to have formalized systems in place to continuously manage safety at a systems level. Oversight is accomplished using an inspect-and-fix approach. In this approach, the regulator's role is focused on finding instances of regulatory non-compliance, which the operator must correct. The impact on safety of this approach is limited for 2 main reasons.

First, it is not possible for the regulator to examine continuously all aspects of an operation. Challenges in detecting non-conformances have been identified in a number of previous TSB investigations (e.g. A12W0031, A12C0154, and A13W0120). For example, in A13W0120, although TC had assessed the operator involved as high risk, and was conducting frequent surveillance activities, the focus had not shifted to verifying regulatory compliance, and remained at a systems level. As a result, TC's surveillance did not identify the unsafe operating practices that contributed to the severity of the occurrence.

Secondly, if the systemic causes of non-conformance are not identified and addressed, it is likely that unsafe conditions will persist. The TSB has also previously identified this pattern in a number of investigations (e.g. A10Q0098, A10Q0117, and A13H0002). For example, in A13H0002, the report identified weaknesses in the oversight of an operator with a transitioning safety management system (SMS). In this case, the operator experienced difficulty producing acceptable CAPs and meeting its proposed implementation time frames. This resulted in repeated delays in addressing deficiencies. During this period, TC postponed any additional surveillance activities pending CAP implementation. The suspension of surveillance activities while waiting for the CAP process to run its course effectively reduced the frequency of oversight for an operator that was considered high risk and left the operator with less than the planned level of oversight for an extended period.

When implemented properly, SMS provide a framework for companies to effectively manage risk and make operations safer. Regulatory requirements for companies to implement SMS are the first step in ensuring that all operators are capable of meeting their safety responsibility. It is for this reason that the TSB has echoed calls from ICAO and the worldwide civil aviation industry emphasizing the advantages of SMS.

Still, even with SMS requirements, companies will vary in degrees of ability or commitment to effectively manage risk. Less frequent surveillance, focused on an operator's safety management processes, will be sufficient for some companies. However, the regulator must be able to vary the type, frequency, and focus of its surveillance activities to provide effective oversight to companies that are unwilling or unable to meet regulatory requirements or

effectively manage risk. Further, the regulator must be able to take appropriate enforcement action in these cases.

Operators with a mature, effective SMS, along with a corresponding safety culture and abilities, may be the subject of less-frequent, systems-level oversight. In contrast, companies that have not demonstrated the capability to effectively manage risks at a systems level should be subject to more frequent surveillance, with a greater emphasis on ensuring compliance with regulations. As an operator's systems mature and become more effective, the frequency of oversight may be reduced and the balance of oversight can shift from the compliance-based model to more systems-level surveillance activities.

In the investigation of the Ornge RW accident at Moosonee, Ontario, the TSB found that TC's approach to surveillance activities did not lead to the timely rectification of non-conformances. It also found that TC inspectors believed that tools other than a corrective action plan to guide the operator back into compliance were either unavailable or inappropriate for use with a willing operator. As a result, the operator's willingness to address surveillance findings superseded concerns about the operator's capability to address the deficiencies in post-surveillance decision making. In addition, the investigation found that the training and guidance that was provided to TC inspectors contributed to uncertainty, which led to inconsistent and ineffective surveillance of Ornge. Ultimately, although TC was conducting frequent and detailed surveillance, the approach to returning the operator to a state of compliance was not well matched to the capabilities of the operator.

The investigation also noted that although TC was relying heavily on the CAP process, the operator was not required to have an SMS and, as a result, had not demonstrated to TC that it had the processes in place to effectively manage safety.

The TSB has previously identified these issues; safety management and oversight is a multi-modal item on the TSB Watchlist, which identifies those issues posing the greatest risk to Canada's transportation system. The Watchlist proposes the following solutions in this area:

- TC must implement regulations requiring all air operators to have formal safety management processes, and TC must oversee these processes.
- Companies that do have SMS must, in turn, demonstrate that it is working—that hazards are being identified and effective risk mitigation measures are being implemented.
- Finally, when companies are unable to effectively manage safety, TC must not only intervene, but do so in a manner that succeeds in changing unsafe operating practices.

The investigation into this accident and other recent occurrences emphasize the need for operators to be able to effectively manage safety. More than 10 years after introducing the first SMS regulations for airline operators and the companies that perform maintenance on their aircraft, SMS implementation has stalled. While many companies, such as Ornge RW, have recognized the benefits of SMS and voluntarily begun implementing it within their organizations, approximately 90% of all Canadian aviation certificate holders are still not

required by regulation to have an SMS. As a result, TC does not have assurance that these operators are able to effectively manage safety:

Therefore, the Board recommended that

the Department of Transport require all commercial aviation operators in Canada to implement a formal safety management system.

TSB Recommendation A16-12

Previous responses and assessments

September 2016: response from Transport Canada

Transport Canada agrees in principle with the recommendation.

TC already requires a safety management system in commercial air operators that represent approximately 95% of passenger miles. The department recognizes the added value of a safety management system.

TC will address this recommendation in two ways. First, by continuing to promote voluntary adoption of a safety management system among the balance of commercial air operators. To support this, the department will publish updated guidance material aimed at smaller sized-operations this year.

Secondly, over the next year and a half, the department will be reviewing the policy, regulations and program related to safety management systems in civil aviation. The expected outcome of the review is a determination on the scope, regulatory instrument, applicability and oversight model.

This review will rely on the input of the department's employees, as well as industry, international authorities and other specialists in this area.

November 2016: TSB assessment of the response (unable to assess)

In its response, Transport Canada indicated that it would continue promoting the voluntary adoption of a safety management system by publishing guidance material for smaller operations. The TSB is pleased that TC will continue to promote the benefits of SMS, and that it has published updated guidance material to assist smaller operators.

Transport Canada also advised that it would review the policy, regulations, and program related to SMS in commercial aviation. There is no clear indication at this time what Transport Canada will do once the review is complete and whether or not it intends on initiating a rule-changing process to require all commercial aviation operators to implement a formal safety management system.

Therefore, the response to Recommendation A16-12 is assessed as **Unable to Assess**.

December 2019: response from Transport Canada

In our previous update on this recommendation, TC committed to undertake a policy review of Safety Management Systems (SMS). The SMS policy review is ongoing and aims to answer the many questions that need to be answered to ensure that SMS is implemented in a way that improves safety, that is sustainable, and that both industry and TC are prepared for the implementation.

As the SMS policy review is in progress, there are no decisions or plans to modify or expand SMS to other sectors at this time.

Currently, the sectors that have requirements to implement SMS formally under the CARs include airlines operating under CARs subpart 705 and their associated maintenance providers, air navigation services and air traffic service providers under part VIII of the CARs, operators of certified airports under Part III of the CARs and private operators operating under CARs subpart 604.

As such, to be compliant with the standards and recommended practices contained in Annex 19 of the International Civil Aviation Organization (ICAO) convention, TC will need to identify if SMS requirements need to be developed for operators:

- Conducting international commercial air transport under CARs subparts 702, 703 and 704;
- Approved maintenance organizations (CARs subpart 573) providing services to these operators;
- Approved training organizations (CARs subpart 406);
- Design organizations (CARs subpart 505); and,
- Manufacturing organizations (CARs subpart 561).

Phase one of the SMS policy review is almost complete including an examination of the current state of SMS, and lessons learned since the initial SMS implementation in 2005. This work has included a review of previous examinations of experiences with SMS at TC including:

- The recommendations from an evaluation of SMS in Civil Aviation made by TC's Evaluation and Advisory Services between 2017 and 2019.
- The conclusions of an environmental scan focused on airport certificate holders under Part III of the CARs to help identify where TC may be able to strengthen guidance material or other support for inspectors and airport operators.

Phase two, the engagement strategy, is expected to occur in winter 2020, and will:

- Examine the approach of other regulating departments and agencies that have undergone similar regulatory reviews;
- Examine best practices of other aviation regulating jurisdictions (e.g. Federal Aviation Administration, European Aviation Safety Agency, Civil Aviation Safety Authority, Civil

Aviation Authority, among others) who have recently undergone major regulatory modernization initiatives;

- Consult with industry stakeholders, all TC Regions and other experts; and
- Identify the support required for the oversight program as TC moves forward with efforts to modernize current SMS practices as well as future implementation of SMS in other sectors.

Upon completion of phase two, the SMS policy review will develop an options paper that will identify recommendations for regulatory and non-regulatory tools for the modernization of current SMS practices as well as future implementation of SMS in other sectors.

In addition to carrying out the SMS Policy Review, TC continues to take a leadership role in promoting and developing SMS through its role in the Safety Management International Collaboration Group. This group recently published a resource paper entitled “*Determining the Value of SMS*”¹ that provides tools to calculate the return on investment for SMS implementation, including the cost breakdown and the added benefits or value of safety.

March 2020: TSB assessment of the response (unable to assess)

In its response, Transport Canada (TC) indicated that it has started a two-phase policy review of safety management systems (SMS) to ensure that the implementation of SMS improves safety, is sustainable, and that all involved parties are prepared for the implementation. Until this review is complete, TC is not planning to either modify or expand SMS to other sectors.

In addition, TC advised that it was completing phase one of its two-phase review. However, it did not include a timeline for the completion of phase two. It did not provide a timeline either for the subsequent option paper that will be developed to identify recommendations of both regulatory and non-regulatory tools to be used to modernize SMS practices and to implement SMS in additional sectors.

In the meantime, Canada is not complying with SMS standards and recommended practices contained in Annex 19 to the *Convention on International Civil Aviation* published by the International Civil Aviation Organization (ICAO). As identified by TC, the following are not meeting the SMS requirements of ICAO Annex 19:

- Operators conducting international commercial air transport under subparts 702, 703 and 704 of the *Canadian Aviation Regulations* (CARs);
- Approved maintenance organizations (CARs subpart 573) providing services to these operators;
- Flight training units (CARs subpart 406);
- Design approval organizations (Chapter 505 of the *Airworthiness Manual*); and

¹ Safety Management International Collaboration Group (2016), *Determining the Value of SMS*, at <https://www.skybrary.aero/bookshelf/books/3427.pdf> (last accessed on 27 March 2023).

- Approved manufacturers (CARs subpart 561).

The Board is encouraged that TC wants to ensure the SMS policy achieves the objectives outlined above. However, this policy review is still not complete even though TC originally stated, in 2016, that it would take a year and a half to complete.

There is no clear indication at this time of what TC will do once the review is complete and whether or not it intends to initiate regulatory changes to require that all commercial aviation operators, operating both domestically and internationally, implement a formal SMS.

Therefore, the Board is **unable to assess** the response to the recommendation.

September 2020: response from Transport Canada

TC agrees with the recommendation and continues work on its Safety Management System (SMS) Policy Review.

The SMS policy review is identifying issues and opportunities, and consulting with aviation Subject Matter Experts (SMEs) and stakeholders. This information will assist in developing recommendations to update and modernize current SMS requirements in the CARs. In addition, the recommendations address ways to better align with newer SMS requirements, as well as with international best practices.

Foundational work of the SMS policy review is complete. This work included: creating a Project Charter, founding of a SMS working group with SMEs in headquarters and the regions, developing a consultation paper and plan, and drafting a summary discussion paper. The summary discussion paper was shared internally with TCCA regions (Pacific, Prairie and Northern, Ontario, Quebec and Atlantic) and will be used as a tool to support ongoing discussion and consultation.

The first phase of the SMS policy review is focused on sectors that currently have SMS requirements, which include: CAR 705 Airline Operations; CAR 573 Approved Maintenance Organizations (AMOs) for CAR 705; CAR 302 Certified Aerodromes; CAR 805 Air Navigations Services (ANS); and CAR 604 Private Operators.

Formal in-person consultations with aviation SMEs and stakeholders were originally planned for March 2020. However, they were postponed due to the COVID-19 pandemic. In August 2020, the SMS policy review team initiated virtual consultations with TC inspectorate, SMEs, and aviation industry stakeholders.

Further, in September 2020, TC will implement alternative means of consultation to continue advancing the file. This includes the distribution of a formal consultation paper via the CARAC reporting system, as well as launching the TC-administered Let's Talk: Modernizing Safety Management Systems consultation platform. Once the consultation period has concluded, the SMS policy review will begin work on developing options and recommendations to modify current SMS requirements.

As the SMS policy review continues to move forward, it will build on the outcomes of the consultations and use the recommendations as important considerations for moving forward with the modernization of current SMS requirements.

The initial consultations described above are scheduled to be completed in December 2020.

As part of the evolution of SMS into sectors not currently regulated in the CARs, the SMS policy review team will propose a recommended approach for future consultations regarding expanding SMS requirements in additional sectors including: CARs 702, 703, 704, 573 (Associated Maintenance Organizations), 406 (Flight training units), 505 (Design and Manufacturing Organizations) and 561 (Manufacturer of aeronautical products).

This work is set to begin in January 2021.

January 2021: update to the response from Transport Canada

TC is currently reviewing the feedback received during the consultation period, October 14-December 19th.

As we work to develop policy options and next steps based on this input, we will be flagging specific feedback for additional consultation with stakeholders, where necessary.

In the meantime, we will be releasing a ‘What We Heard’ document via CARAC shortly, providing stakeholders a broad overview of the issues and recommendations received during the consultation process.

March 2021: TSB assessment of the response (unable to assess)

In its responses, Transport Canada (TC) states that it agrees with the recommendation and continues to work on the safety management system (SMS) policy review, which will ultimately assist in developing recommendations to update and modernize current SMS requirements in the *Canadian Aviation Regulations* (CARs).

According to TC, foundational work of the policy review is complete and the project was in a consultation period until December 2020 with TC inspectorate, subject matter experts, and aviation industry stakeholders. TC is currently reviewing the feedback received during the consultation period, and is developing policy options and recommendations to modify current SMS requirements. TC also intends to release a “What We Heard” document via the Canadian Aviation Regulation Advisory Council, providing stakeholders a broad overview of the issues and recommendations received during the consultation period.

In addition to making recommendations to current SMS requirements, TC’s policy review team will also propose a recommended approach for future consultations regarding the expansion of SMS into sectors that are not currently required to have an SMS under the CARs. This work was set to begin in January 2021.

As outlined in the TSB's previous reassessment of TC's March 2020 response, the Board is encouraged that TC wants to modernize the current SMS requirements. However, the policy review that TC originally stated, in 2016, would take a year and a half to complete is still ongoing and there is no indication when the review will be completed. In addition, there is no clear indication of what TC will do once the review is complete and whether or not it intends to initiate regulatory changes to require that all commercial aviation operators, operating both domestically and internationally, implement a formal SMS.

Therefore, the Board is **unable to assess** the response to Recommendation A16-12.

September 2021: response from Transport Canada

Transport Canada (TC) agrees with the recommendation.

At the time of the recommendation's publication in June 2016, TC already required a safety management system in commercial air operators that represent approximately 95% of passenger miles. TC also recognized the added value of a safety management system and continuously takes a leadership role in promoting and developing SMS through its role in the Safety Management International Collaboration Group. This group recently published a resource paper entitled "Determining the Value of SMS"² that provides tools to calculate the return on investment for Safety Management System (SMS) implementation, including the cost breakdown and the added benefits or value of safety.

In our last update of September 2020, the Department committed to:

- Complete a policy review related to safety management systems in civil aviation to identify issues and opportunities, and consult with aviation Subject Matter Experts (SMEs); and,
- Develop an options paper that will identify recommendations for regulatory and non-regulatory tools for the modernization of current SMS practices as well as future implementation of SMS in other sectors.

The SMS policy review completed consultations in late 2020. The "What We Heard" report³ was released on the 8th of June 2021, with a summary of the comments received during the consultation, from which a triage was conducted to help develop recommendations.

An options paper will be developed in which near, medium and long-term recommendations will be considered to improve and modernize SMS in the current sectors and a plan of action, along with projected timelines for implementation, will be communicated to Canadian Aviation Regulation Advisory Council (CARAC) members by Fall 2021.

² Safety Management International Collaboration Group (2016), *Determining the Value of SMS*, at <https://www.skybrary.aero/bookshelf/books/3427.pdf> (last accessed on 27 March 2023).

³ Transport Canada (2021), *What We Heard: Policy review of safety management systems*, at <https://tc.canada.ca/en/corporate-services/acts-regulations/list-regulations/canadian-aviation-regulations-sor-96-433/canadian-aviation-regulation-advisory-council-carac#2> (last accessed on 27 March 2023).

Also, in Fall 2021, the SMS Policy Review will begin its work on Phase II, which will examine expansion of SMS to aviation sectors not currently requiring their operators under regulations to maintain SMS.

March 2022: TSB assessment of the response (unable to assess)

In its response, Transport Canada (TC) stated that it agrees with the recommendation. TC also indicated that it is taking a leadership role in promoting and developing safety management systems (SMS) through its involvement in the Safety Management International Collaboration Group.

Since its last response, the department completed consultations on an SMS policy review, which was used by TC to help develop recommendations. Phase II of the SMS policy review, which will examine expansion of SMS to other aviation sectors, was planned for fall 2021. According to TC, work is still underway on the policy review, with a few delays.

TC committed to developing an options paper with near-, medium-, and long-term recommendations to improve and modernize SMS, along with a plan of action and projected timelines for implementation. The options paper was to be communicated to the Canadian Aviation Regulation Advisory Council in the fall of 2021; however, this has yet to be completed.

The Board is encouraged that TC continues to promote and develop SMS, and that it plans on modernizing the current SMS requirements. However, the policy review and consultations are ongoing and there is no indication when this process will be finalized. In addition, there is no clear indication as to how the results of these initiatives will address the safety deficiency identified in Recommendation A16-12 and whether the department will initiate regulatory changes requiring all commercial aviation operators in Canada to implement a formal SMS.

Therefore, the Board is **unable to assess** the response to Recommendation A16-12.

October 2022: response from Transport Canada

Transport Canada (TC) agrees with the recommendation.⁴

At the time of the recommendation's publication in June 2016, TC already required a safety management system in commercial air operators that represent approximately 95% of passenger miles. TC also recognized the added value of a safety management system and continuously takes a leadership role in promoting and developing SMS through its role in the Safety Management International Collaboration Group. This group recently published a

⁴ 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.

resource paper entitled “Determining the Value of SMS”⁵ that provides tools to calculate the return on investment for Safety Management System (SMS) implementation, including the cost breakdown and the added benefits or value of safety.

In 2020, TC’s SMS policy review completed consultations and released the “What We Heard” report in June 2021, with a summary of the comments received during the consultation, from which a triage was conducted to help develop recommendations.

In TC’s September 2021 update, the Department committed to:

- Begin its work on Phase II of the SMS policy review which will examine expansion of SMS to aviation sectors not currently requiring their operators under regulations to maintain SMS.
- Develop an options paper that will identify recommendations for regulatory and non-regulatory tools for the modernization of current SMS practices as well as future implementation of SMS in other sectors.

Since the previous update, TC continued its effort to advance Phase II of its SMS policy review and will continue this work until regulations come into force. Given the scale of amendment required, and in light of new ICAO standards for SMS, TC has elected to divide its modernization of the SMS framework into two packages. The objectives of each package are as follows:

- **Package One** proposes to focus on extending SMS to design and manufacturing organizations as well as the harmonization of existing SMS regulations for clarity and simplicity. It also proposes to ensure compliance of Canadian regulations with international standards and harmonize regulations with those of key international partners.
- **Package Two** will propose to examine the expansion of SMS to other sectors not currently covered under the SMS *Canadian Aviation Regulations* (CARs) requirements. The sectors under review for the expansion of SMS have been made aware that they will be consulted on SMS implementation in the near future so that they can better prepare.

TC is currently drafting the Phase II: Package One NPA for SMS Modernization, which is planned to be ready by Fall 2022. Publication in the *Canada Gazette* Part I is planned for mid-2024. Timelines for Package Two remain in development.

As for the options paper, TC has and continues to prioritize communication and consultation with members of Canadian Aviation Regulation Advisory Council (CARAC) concerning options for SMS modernization. To this end, TC presented an update on its policy review, options for proposed regulatory approach, and timelines for modernization at the 19th CARAC plenary, which took place between November 23-25, 2021. Modernization plans and timelines were also

⁵ Safety Management International Collaboration Group (2016), *Determining the Value of SMS*, at <https://www.skybrary.aero/bookshelf/books/3427.pdf> (last accessed on 27 March 2023).

communicated via various forums, such as the Canadian Aviation Safety Collaboration Forum (April 2022) and the Northern Air Transport Association Annual Conference (April 2022).

TC also completed external consultations through CARAC in Summer 2022, during which it presented proposed means to advance Phase II, Package One amendments.

TC also notes that it remains committed to introducing regulatory changes in a manner that is adaptable to the size and complexity of specific operations, feasible in terms of scope of requirements, and equitable with respect to timelines for operators coming into compliance.

March 2023: TSB assessment of the response (Satisfactory in Part)

In its latest response, Transport Canada (TC) stated that it agrees with the recommendation.

Since the previous update in September 2021, TC has continued to advance Phase II of its Safety Management System (SMS) policy review, which will examine expansion of SMS to other aviation sectors, and work will continue until such regulations come into effect. To this end, TC presented an update on its policy review, options for a proposed regulatory approach, and timelines for modernization at the 19th Canadian Aviation Regulation Advisory Council (CARAC) plenary, which took place between 23-25 November 2021.

Given the scale of this initiative, TC has divided its modernization of the SMS framework into 2 packages. TC is currently drafting Package One, Notice of Proposed Amendment (NPA) for SMS Modernization. Package One proposes to extend SMS to design and manufacturing organizations. Also, it will propose compliance and harmonization of Canadian regulations with international standards. Following TC's response in October 2022, it has confirmed that the NPA will be published on the CARAC website in Spring 2023. Publication in the *Canada Gazette*, Part I is planned for mid-2024.

Package Two will propose to examine the expansion of SMS to other sectors not currently covered under the SMS *Canadian Aviation Regulations* (CARs) requirements. Timelines for Package Two remain in development.

The issue of safety management has been on the TSB Watchlist since 2010. As highlighted in Watchlist 2022, progress has been slow to extend the application of SMS beyond CARs Subpart 705 operators. While the Board is encouraged that TC is conducting an SMS policy review that will assist in developing recommendations to modernize and expand SMS requirements, until this review is complete and changes are implemented to the SMS requirements, it is unclear whether these efforts will address the safety deficiency identified in the recommendation.

Therefore, the Board considers the response to Recommendation A16-12 to be **Satisfactory in Part**.

Latest response and assessment

September 2023: response from Transport Canada

Transport Canada (TC) agrees with recommendation A16-12 and continues to advance its work related to the modernization of the SMS framework in Canada.⁶

At the time of the recommendation's publication in June 2016, TC already required a safety management system in commercial air operators that represent approximately 95% of passenger miles. TC also recognized the added value of a safety management system and continuously takes a leadership role in promoting and developing SMS through its role in the Safety Management International Collaboration Group. This group recently published a resource paper entitled "Determining the Value of SMS"⁷ that provides tools to calculate the return on investment for Safety Management System (SMS) implementation, including the cost breakdown and the added benefits or value of safety.

As TC previously noted in its October 2022 update, given the scale of amendment required, and considering the International Civil Aviation Organization (ICAO) standards for SMS, TC has elected to divide its modernization of the SMS framework into two packages. The objectives of each package are as follows:

- **Package One** proposes to focus on extending SMS to design and manufacturing organizations as well as the harmonization of existing SMS regulations for clarity and simplicity. It also proposes to ensure alignment of Canadian regulations with international standards and harmonize regulations with those of key international partners.
- **Package Two** will propose expansion of SMS to certain sectors not currently covered under the SMS *Canadian Aviation Regulations* (CARs) requirements, such as Aerial Work (702), Air Taxi (703), Commuter (704) operators, Approved Maintenance Organizations (AMOs), and Flight Training Units (FTUs). Additionally, TC is assessing possible expansion of SMS to other sectors as required by future ICAO Annex 19 amendments.

To date, as part of Package One, TC has completed a policy review related to the safety management systems in civil aviation to identify issues, explore options for the proposed regulatory approach, and thereafter, develop a consultation plan to further engage with aviation

⁶ 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.

⁷ Safety Management International Collaboration Group (2016). *Determining the Value of SMS*. Available at: <https://www.skybrary.aero/bookshelf/books/3427.pdf>

Subject Matter Experts (SMEs) and stakeholders. Beginning in 2020, TC published the following consultative documents:⁸

- 2020 Civil Aviation SMS: Consultation Paper
- 2020 What we heard: Policy Review of SMS
- 2022 External Consultation Plan SMS For Design and Manufacturing
- 2022 External Consultation Summary Report – Safety Management System (SMS) Regulatory Modernization

In Summer 2022, TC completed its SMS Policy Review’s external consultations through the Canadian Aviation Regulation Advisory Council (CARAC), that sought industry feedback on the proposed options for a regulatory approach to Package One SMS modernization. Comments received through this consultative process continue to inform ongoing work related to SMS modernization in Canada, including the development of the Notice of Proposed Amendment (NPA) for Package One SMS modernization that is planned to be published in Fall 2023. The proposed regulatory changes would consolidate existing Safety Management System regulations and introduce requirements for aircraft design and manufacturers to have safety management systems. Publication in the *Canada Gazette*, Part I is planned for Spring 2025.

As part of Package Two, TC is exploring the possibility of extending SMS requirements to other sectors under the CARs, such as Aerial Work (702), Air Taxi (703), Commuter (704) operators, Approved Maintenance Organizations (AMOs), Flight Training Units (FTUs) and other sectors as required by future ICAO Annex 19 amendments. The work on Package Two is currently awaiting the completion and passage of Package One.

TC also notes that it remains committed to introducing regulatory changes in a manner that is adaptable to the size and complexity of specific operations, feasible in terms of scope of requirements, and equitable with respect to timelines for operators coming into compliance.

February 2024: TSB assessment of the response (Satisfactory in Part)

In its latest response, Transport Canada (TC) reaffirmed that it agrees with Recommendation A16-12.

TC’s response outlines some actions regarding its approach to the modernization of the safety management system (SMS) framework, that the Board has already assessed. Specifically, TC’s response explains that due to the scale of amendment required and considering the International Civil Aviation Organization (ICAO) standards for SMS, the modernization project has been divided into 2 packages.

⁸ These consultative documents are available on the CARAC website at: <https://wwwapps.tc.gc.ca/Saf-Sec-Sur/2/NPA-APM/actr.aspx?id=82&aType=1&GoCTemplateCulture=en-CA>

The Board is encouraged that, as part of Package One, TC recently published a Notice of Proposed Amendment (NPA) related to SMS framework changes.⁹ According to TC, this NPA will consolidate existing SMS regulations and introduce requirements for aircraft designers and manufacturers to have SMS. The Board will continue to monitor the progress of this NPA, planned for publication in the *Canada Gazette*, Part I in the spring of 2025.

TC indicated that part of Package Two will include exploring the possibility of extending SMS requirements to other sectors under the *Canadian Aviation Regulations* (CARs), such as Aerial Work (Subpart 702), Air Taxi (Subpart 703), Commuter (Subpart 704) operators, approved maintenance organizations, flight training units, and other sectors as required by future ICAO Annex 19 amendments. However, at this time, TC has not yet provided the Board with sufficient information to determine the extent of TC's actions and timelines to extend SMS to other sectors of the CARs; therefore, the Board looks forward to additional clarity with regards to intended outcomes and timelines in future responses.

In 2005, TC introduced SMS requirements for airline operators and companies that perform maintenance on their aircraft. In 2008 and 2009, TC introduced SMS requirements for airports and air traffic service providers. In 2009, TC delayed implementation of SMS regulations for the remaining aviation sectors, citing as one of the reasons, "[...] to allow more time for industry to prepare [...]."¹⁰ Approximately 90% of all Canadian aviation certificate holders are still not required by regulation to have an SMS. Until all commercial aviation operators are required to have an SMS, the risk will persist. If SMS requirements are extended into the other sections under the CARs, as suggested in TC's latest response, it will significantly reduce or eliminate the safety deficiency associated with this recommendation.

Therefore, the Board considers the response to Recommendation A16-12 to be **Satisfactory in Part**.

File status

The TSB will continue to monitor the progress of TC's planned actions to mitigate the risk associated with the safety deficiency identified in Recommendation A16-12, and it will reassess the deficiency on an annual basis or when otherwise warranted.

This deficiency file is **Active**.

⁹ NPA 2024-002, Safety Management Systems, is available at the NPA Search website: <https://wwwapps.tc.gc.ca/Saf-Sec-Sur/2/NPA-APM/npaapml.aspx> (last accessed on 01 March 2024).

¹⁰ Transport Canada, *Improving Canada's Civil Aviation Safety Program: An Action Plan to April 2013* (April 2012).