



TSB Recommendation A16-14

Oversight of commercial aviation in Canada: policies, procedures and training

The Transportation Safety Board of Canada recommends that the Department of Transport enhance its oversight policies, procedures and training to ensure the frequency and focus of surveillance, as well as post-surveillance oversight activities, including enforcement, are commensurate with the capability of the operator to effectively manage risk.

Air transportation safety investigation report	A13H0001
Date the recommendation was issued	15 June 2016
Date of the latest response	September 2024
Date of the latest assessment	March 2025
Rating of the latest response	Unsatisfactory
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. 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

This, and other investigations have highlighted the need for TC to adapt its approach to regulatory oversight to the competence of the operator. The documentation provided to TC inspectors evolved considerably in the time period covered by this investigation, and TC continues to provide new training to its inspectors as outlined in the Safety action taken section of the report.

However, recent investigations have highlighted the fact that, when faced with an operator that is unable or unwilling to address identified safety deficiencies, TC has difficulty adapting its approach to ensure that deficiencies are effectively identified and that they are addressed in a timely manner.

TC's risk-based approach to surveillance planning resulted in the operators, which were all viewed as higher risk, being scheduled for more frequent surveillance. However, in A13W0120, unsafe conditions remained unidentified when the surveillance remained focused on processes. In other occurrences, unsafe conditions were allowed to persist for an extended period while TC relied heavily on a CAP process, in which the operators were ill-equipped to participate.

Therefore, to ensure that companies use their SMS effectively, and to ensure that companies continue operating in compliance with regulations, the Board recommended that

the Department of Transport enhance its oversight policies, procedures and training to ensure the frequency and focus of surveillance, as well as post-surveillance oversight activities, including enforcement, are commensurate with the capability of the operator to effectively manage risk.

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Previous responses and assessments

September 2016: response from Transport Canada

Transport Canada agrees that it must continually enhance its oversight policies, procedures and training. In fact, independent to this accident or this recommendation, TC committed in its National Oversight Plan for 2016/2017 to conduct an evaluation of its surveillance program.

Further to that commitment, in July 2016, TC launched a Civil Aviation Surveillance Program Evaluation and Update Project. The purpose of this project is to analyze opportunities for improvement identified via inspector feedback, analyze lessons-learned, and leverage business intelligence to update the surveillance program. The goal of the project is to ensure the surveillance program effectively verifies regulatory compliance at appropriate intervals and is effective in carrying out enforcement action, as required. While the project is scheduled to complete in December 2017, the department will not hesitate to implement enhancements sooner, if warranted.

The Board's recommendation A16-14 will be used as an input to this evaluation work.

December 2016: TSB assessment of the response (Satisfactory Intent)

In its response, Transport Canada indicated that it launched a Civil Aviation Surveillance Program Evaluation and Update Program that is scheduled to be completed in December 2017. The Board is encouraged that Transport Canada has committed to evaluating its surveillance program, and to considering opportunities for further improvements in order to ensure the effectiveness of its surveillance program.

In a recent briefing to the Board, TC has provided a detailed update on the various program improvement initiatives undertaken since 2015-16. The Board is pleased to note that TC has implemented some concrete actions such as: the establishment of a National Oversight Office, the implementation of an Oversight Advisory Board, the creation of a dedicated team working on surveillance policies and procedures, strengthened oversight planning, risk-based decision-making, timely enforcement actions, and taking temporary measures that will permit an increase in the number of inspections on higher risk areas while the program evaluation and update is being done.

The Board also acknowledges TC's efforts as it strives to find the right balance between planned and reactive oversight activities, as well as in the use of the various types of oversight tools available. Although TC has implemented numerous improvements it is too early to assess whether or not TC's actions will adequately address the safety deficiency associated with this recommendation.

Therefore, the response to the recommendation is considered to be **Satisfactory Intent**.

June 2018: response from Transport Canada

TC agrees with the recommendation.

In July 2016, TC launched a Civil Aviation Surveillance Program Evaluation and Update Project to analyze improvement opportunities identified via inspector feedback and lessons-learned to update the surveillance program.

The objectives are to:

- ensure the surveillance program effectively verifies regulatory compliance with safety management systems requirements;
- confirm that verifications are done at appropriate intervals; and,
- verify that enforcement action is taken as required.

Since launching the project, TC has briefed the Chair and members of the TSB on progress.

While the evaluation of the surveillance program continues, TC has already taken action and has:

- Introduced leaner, more efficient tools that effectively determine compliance and risk and provide a better balance between system and process level surveillance (e.g., an

unannounced inspection at the ramp of the airports used to determine an air operator's method for complying with regulatory requirements, such as flight crew certification, instrument and equipment requirements, weight and balance procedure, dispatch procedures and an overall evaluation of the operations being conducted. Ramp inspections may be conducted at point of origin, en route or destination stops).

- Introduced Safety Management System verifications as part of inspection tools, other than assessments, which will facilitate more regular checks of enterprises' SMS to confirm they are working.
- Made extensive use of data in terms of examining performance levels and sampling methodologies to determine surveillance intervals.

TC's surveillance plan for 2018/2019 covers private operators (604), aerial work (702), heliports (305), flight training units and the general aviation community in addition to the higher impact sectors, such as airlines (705), commuters (704) and their associated Approved Maintenance Organizations.

In April 2018, TC also introduced new guidance to inspectors for post-surveillance work, including the documentation of findings and enforcement procedures. The intent of these updates is to strengthen TC's approach to documenting findings of non-compliance and to better articulate the issue identified through inspection. This will support companies (that are in receipt of findings) with their development and implementation of more effective corrective action plans. This new guidance will allow unsafe operating practices to be addressed more quickly and effectively. In cases where certificate holders do not develop Corrective Action Plans, TC will suspend the relevant Canadian Aviation Document.

September 2018: TSB assessment of the response (Satisfactory in Part)

In its response, Transport Canada indicated that its Civil Aviation Surveillance Program Evaluation and Update Project is currently on-going. While the evaluation of the surveillance program continues, TC has introduced leaner, more efficient tools to determine compliance and risk, has introduced safety management system (SMS) verifications, has made extensive use of data to determine appropriate surveillance intervals, and has introduced new guidance to inspectors for post-surveillance work.

The Board is encouraged by these efforts. However, the Board notes that TC's response makes no mention of air taxi (703) operations as part of its surveillance plan for 2018/2019, and it does not clearly describe what, if any, changes will be made to enhance existing oversight policies, procedures, and inspector training. Although TC's actions to date may reduce the risk to the travelling public, the risk will not be substantially reduced or eliminated until its oversight policies, procedures, and training have been enhanced.

Therefore, the response to Recommendation A16-14 is assessed as **Satisfactory in Part**.

October 2019: response from Transport Canada

Since 2016, TC has implemented a number of changes to the surveillance program in order to improve oversight of the aviation industry. Among other enhancements, TC has implemented guidance, tools and training to improve the quality of findings, drive decision-making, and improve the risk-based planning methodology to ensure effective oversight.

Developing accurate, comprehensive, and clear findings are an essential function that supports enforcement action where required. Findings are critical communication tools that enable companies to understand and address the identified non-compliances. Further, robust and well supported findings are a necessary foundation upon which all further enforcement action relies, should an operator prove unable or unwilling to rectify identified issues.

SI SUR 029 was developed to provide inspectors with the enhanced guidance and tools to:

- accurately determine the existence of a non-compliance;
- determine what evidence is required to support the finding of non-compliance;
- clearly describe the nature of the non-compliance; and,
- identify whether the finding should be at the system level or process level.

It is critical that all of these elements are in place in order to allow for an effective enforcement response. In addition to the publication of SI SUR 029, Surveillance Update training was developed and delivered throughout 2018, which included instruction related to SI SUR 029.

The Oversight Advisory Board (OAB) was established to support efficient and effective decision-making when handling complex oversight decisions¹. The process was developed in order to bring decision-makers and subject matter experts together to review concerns and determine appropriate courses of action in relation to complex oversight issues.

The OAB brings several benefits, including:

- circumventing hierarchical processes for a rapid response;
- supporting nationally consistent decision-making; and
- facilitation of information-sharing between operational groups.

Fiscal year 2020-2021 is the third year of transition during which TC is enhancing its surveillance program. The planning methodology relies on the following fundamental concepts: operational latitude, using local intelligence, leveraging inspectors' professional judgment, and data-driven risk-based decision-making.

SI SUR 028² was updated in October 2018 for fiscal year 2019-2020 and is currently being amended in preparation for 2020-2021 planning. The document details enhancements to the

¹ Transport Canada Staff Instruction SI SUR-027: Oversight Advisory Board, Issue 01, Effective 6 October 2017.

² Transport Canada Staff Instruction SI SUR-028: Surveillance Planning Instructions – Fiscal Year 2019-2020, Issue 04, Effective 29 Oct 2018.

risk-based planning process that have been implemented with a view to continuous improvement.

Changes to the surveillance planning methodology for 2020-2021 include³:

- The introduction of a “conceptual National Oversight Plan” which is developed by headquarters, and further refined by the regions based on local intelligence.
- An enhanced data analysis tool that will assist in the planning of surveillance activities. This tool uses data obtained from the National Aviation Company Information System (NACIS), the Civil Aviation Daily Occurrence Reporting System (CADORS), as well as qualitative data from the regions to group enterprises into peer groups based on risk level.
- The introduction of a qualitative assessment tool to validate the categorization of enterprises using the quantitative analysis using the primary inspector’s perspectives.
- Continued use of process inspections as the primary surveillance tool for planned surveillance activities. Systems level surveillance will be conducted on a reactive basis where warranted.

TC’s surveillance plan for 2019-2020 includes surveillance for the following sectors: commercial airlines (705), commuter airlines (704) and their associated Approved Maintenance Organizations, as well as private operators (604), aerial work (702), air taxi (703), heliports (305), flight training units, and the general aviation community.

March 2020: TSB assessment of the response (Satisfactory in Part)

The Board is encouraged by Transport Canada’s (TC) efforts to improve oversight of the aviation industry. In particular, TC has indicated in its response that it has implemented guidance, tools, and training to improve:

- the quality of findings produced during surveillance activities;
- the decisions made related to the oversight of commercial aviation; and
- the risk-based planning methodology.

The necessary guidance and tools can be found in the following documents:

- Staff Instruction (SI) SUR-027 — *Oversight Advisory Board (OAB)*, published in October 2017;
- SI SUR-029 — *Writing Findings for Non-Compliance*, published in April 2018;
- SI SUR-001 — *Surveillance Procedures*, updated in January 2019; and
- SI SUR-028 — *Surveillance Planning Instructions — Fiscal Year 2019-2020*, updated in January 2019.

³ These processes and tools are described in detail in Appendices A to D of SI SUR-028, Issue 04.

TC's emphasis on improving the quality of findings will assist in the conduct of surveillance activities and in post-surveillance decision-making, which may include enforcement action decisions, at the regional and/or national level. TC's response also highlighted the benefits of the OAB which, when used, can assist with the post-surveillance decision-making process.

TC has provided a general overview of its recent enhancements to its surveillance planning methodology. Specifically, TC refers to operational latitude, local intelligence, and inspectors' professional judgment, which will be used in conjunction with an enhanced data analysis tool and a qualitative assessment tool. In light of the infancy of these changes, it is not possible to fully assess any potential impact that they will have on TC's oversight program.

TC now relies on process inspections as the primary surveillance tool for planned surveillance, whereas systems level surveillance is done on a reactive basis, when warranted. There are benefits to an increased focus on regulatory compliance, which may be easier to accomplish through process inspections; however, simply verifying regulatory compliance in a cross-section of an organization does not guarantee that commercial aviation operators are capable of effectively managing safety within their organization. TC must also confirm that operators are capable of managing safety risks effectively, whether or not they have a safety management system. Therefore, TC's increased reliance on process inspections represents a reduced surveillance focus, which will have to be assessed over time.

It is likely that TC's planned actions and actions taken to date will reduce the risks associated with the safety deficiency identified in Recommendation A16-14. However, with the information TC provided, it is not possible to determine at this point if these actions will substantially reduce or eliminate the safety deficiency. That determination will be made once TC's changes have been fully implemented.

Therefore, the Board considers the response to the recommendation to be **Satisfactory in Part**.

September 2020: response from Transport Canada

TC agrees with this recommendation.

Following the original commitments related to TSB recommendation A16-14, TC completed the Surveillance Program Evaluation and Update project in 2018. Since then the civil aviation program has continued through the normal continuous improvement cycle as evidenced by the publication of multiple revisions of staff instructions (SI) defining the surveillance program:

- SI-SUR-001 Issue 8 – Surveillance Procedures⁴
- SI-SUR-029 Issue 2 – Writing Findings of Non-Compliance⁵

⁴ Transport Canada (2019). Staff Instruction SUR-001 Issue 8 – Surveillance Procedures.

⁵ Transport Canada (2019). Staff Instruction SUR-029 Issue 2 – Writing Findings of Non-Compliance.

- SI-SUR-028 Issue 5 – Surveillance Planning Instructions – Fiscal Year 2020-2021⁶

The training program launched to explain to the inspectorate the changes resulting from the Surveillance Program Evaluation and Update project concluded in the spring of 2020. The vast majority of the Civil Aviation Safety Inspectors, Technical Team Leads and Associate Directors of Operations participated in the two-day scenario based training that was offered in small groups across Canada to facilitate open discussion about the multiple aspect of their surveillance related duties, including: data gathering for risk-based planning, pre-site, onsite and post site activities, enforcement, writing and documenting findings of compliance, quality control and continuous improvement and operational latitude concepts. Recurrent surveillance training is to be included to the list of mandatory training at the next revision of CAD-ADM-05: Required Training for Civil Aviation Employees who Develop, Deliver and/or Support Oversight Activities.⁷

The planning exercise for fiscal year 2019-2020 and fiscal year 2020-2021 was done with the support of local intelligence gathered from inspectors directly involved with the enterprises as well as the risk indicators based on data available from central databases. This methodology enabled TC produce a risk-based surveillance plan that reflects the preoccupations of the inspectorate as well as the interpretation of the risk data available to TC as a whole.

The recent COVID-19 pandemic has proven to be an opportunity to leverage the Targeted Inspection (TI) tool that was introduced as a result of the Surveillance Program Evaluation and Update Project. Being a flexible and nimble tool, the TI methodology enabled TC to assess the impact of the pandemic on Canadian certificate holders and to capture emerging safety risks in a changing landscape. More specifically, the purpose of the COVID-19 TI was to:

- Assess certificate holders current levels of risk given the changing landscape of aviation operations;
- Feed data-driven decision-making in order to prioritize surveillance for certificate holders who demonstrate increased levels of risk, and;
- Actively monitor and respond to the changes imposed during the COVID-19 pandemic.

In a matter of 3-4 weeks from start to finish, the inspection was designed, planned, delivered and the results were analyzed.⁸ The vast majority of the 2166 operating certificate holders contacted were found to represent very low to low risk. These results are consistent across regions, with inspectors providing only 3 recommendations to increase monitoring and 9 recommendations to initiate a reactive surveillance activity as a result of higher risk.

⁶ Transport Canada (2019). Staff Instruction SUR-028 Issues 5 – Surveillance Planning Instructions – Fiscal year 2020-2021.

⁷ Transport Canada (2015). Civil Aviation Directive – Required Training for Civil Aviation Employees who Develop, Deliver and/or Support Oversight Activities (CAD ADM-005).

⁸ Transport Canada (2020). Targeted Inspection COVID-19 – National report.

The COVID 19 pandemic is also driving further improvements to the surveillance program due to the restrictions imposed on travel and physical distancing requirements. Remote surveillance and new surveillance tools aiming directly at regulatory compliance verifications are being considered and piloted to limit on-site presence while maintaining an adequate level of oversight.

It is important to point out that this is not a departure for the system-level approach to surveillance. The vision is to limit on-site presence to conduct necessary compliance verification. The documentation review, documentation sampling, interviews and analysis work required to support the system level surveillance will continue in a remote (virtual) environment.

TC continues to rely on the development of its Quality Assurance system to support further improvement of its surveillance system. Following the conclusion of the Surveillance Program Evaluation and Update project and several other Transformation Initiatives, TC is committed to invest the resources necessary to ensure that the surveillance program remains effective at mitigating risks associated with Civil Aviation.

With respect to the enforcement component of the surveillance program, TC has recently moved to a multimodal enforcement model. Civil aviation is working actively with the newly created Centre for Enforcement Expertise to develop procedures and guidance to ensure effective enforcement process.

Finally, TC has launched the Civil Aviation Oversight Application Rationalization project aiming at reducing the number of oversight related databases and systems while improving workflow, interconnectivity, analysis and reporting capability. This long term project (estimated at 5 years +) is expected to dramatically improve Civil Aviation's risk-based planning and risk analysis capability once fully implemented.

March 2021: TSB assessment of the response (Satisfactory in Part)

The Board is pleased that Transport Canada (TC) agrees with this recommendation and is taking steps to improve its surveillance program. In particular, the Board acknowledges that TC has undertaken the following activities:

- TC has made multiple revisions to staff instructions defining the surveillance program, including:
 - SI-SUR-001 Issue 8 – Surveillance Procedures
 - SI-SUR-029 Issue 2 – Writing Findings of Non-Compliance
 - SI-SUR-028 Issue 5 – Surveillance Planning Instructions – Fiscal Year 2020-2021
- TC provided 2-day scenario-based training to its personnel to explain recent changes to TC's surveillance program.
- TC introduced the Targeted Inspection (TI) tool to allow for a flexible and nimble approach to oversight during the COVID-19 pandemic. Using this tool, TC determined that the vast majority of operators represent a very low to low risk.

- TC is exploring remote surveillance and new surveillance tools intended to verify regulatory compliance.
- TC continues developing its quality assurance system to support further improvements to its surveillance system.
- TC has recently moved to a multimodal enforcement model and is developing procedures and guidance to ensure an effective enforcement process.
- TC has launched the Civil Aviation Oversight Application Rationalization project to reduce oversight-related databases and systems while improving efficiency.

It is likely that TC's planned actions and actions taken to date will reduce the risks associated with the safety deficiency identified in Recommendation A16-14. However, in light of past instances where non-compliances have gone undetected, or have been allowed to persist, the Board is unable to assess the validity of the risk assessments made using the new TI tool. Furthermore, TC has not provided a clear framework for how it plans to ensure that the frequency and focus of surveillance activities are commensurate with the capability of the operators to effectively manage risk or how moving to a multimodal enforcement model will result in more effective enforcement of commercial aviation.

While the Board recognizes these positive steps, with the information provided, it is not possible to determine at this point if these actions will substantially reduce or eliminate the safety deficiency.

Therefore, the response to Recommendation A16-14 is assessed as **Satisfactory in Part**.

September 2021: response from Transport Canada

Transport Canada (TC) agrees with the recommendation.

Since the recommendation was issued in 2016, TC launched in 2016, and completed in 2018, a "Surveillance Program Evaluation and Update" project. TC also established a training program to explain to the inspectorate the changes resulting from this project. The goal of the project was to ensure the surveillance program effectively verifies regulatory compliance at appropriate intervals and is effective in carrying out enforcement action, as required. In 2020, TC has also moved to a multimodal enforcement model. Civil aviation is working actively with the newly created Centre for Enforcement Expertise to develop procedures and guidance to ensure an effective enforcement process.

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

- Continuously develop its Quality Assurance system to support further improvement of its surveillance system and invest the resources necessary to ensure that the surveillance program remains effective at mitigating risks associated with Civil Aviation; and,

- Launch a Civil Aviation Oversight Application Rationalization (CAOAR) project aimed at reducing the number of oversight related databases and systems while improving workflow, interconnectivity, analysis and reporting capability.

Quality assurance of surveillance findings

Since the previous update, TC has formed the Finding Review Committee in April 2021. Through this initiative, 100% of findings entered by TC inspectors are currently undergoing quality assurance. Findings which do not pass an initial screening are analyzed by the Finding Review Committee which is comprised of representatives from all regions and operational branches. Representatives then provide feedback to their respective operational groups to support continuous improvement in the quality of findings TC is writing. Results from the committee are reported monthly to Civil Aviation senior management.

TC also continues to devote resources to improving the processes and guidance it has in place for inspectors in order to ensure the consistent and effective delivery of the surveillance program. As such, SI-SUR-029 - *Writing Findings for Non-Compliance*⁹ is undergoing a third revision that will provide new tools to aid inspector decision-making. The national consultation process is planned to begin Fall/Winter 2021.

Resources have also been invested in developing a tool for the automation of qualitative risk indicator information through the Surveillance Analytical Risk Algorithm (SARA) program. When fully implemented, it will improve the accuracy and timeliness of data gathering, specifically raising the voice of front line inspectors and leveraging their knowledge of civil aviation enterprises. This project also includes a planning module, which when implemented, will streamline the risk based planning process.

Additionally, TC is reviewing how it balances the oversight workload with the resources available through the surveillance planning methodology.

Civil Aviation Oversight Application Rationalization project

In regards to the Civil Aviation Oversight Application Rationalization (CAOAR) project, TC continues to move it forward even as funding for full implementation is not yet secured past the short-term. The implementation plan is as follows:

- Short term (July – September 2021): CAOAR is in the process of launching a request for information (RFI) that will complete the last piece of information required to further finetune budgetary and procurement requirements. Meanwhile, the CAOAR team is assisting Civil Aviation Oversight applications' business owners in mapping and streamlining their processes to help identify master data to be migrated to the future CAOAR solution.
- Medium term (October 2021 – March 2022): The results of the Request for Information (RFI) will help short-list potential vendors and enable Civil Aviation to select a vendor

⁹ Transport Canada (2019). Staff Instruction (SI) SUR-029 - *Writing Findings for Non-Compliance*.

of choice to set up a pilot project for Civil Aviation Medicine. The functionality to be evaluated in the pilot is a comprehensive subset of the functionality available in the overall solution. It is the intent of TC to use the pilot as a Proof of Concept of the overall CAOAR solution. CAOAR will continue to work with Treasury Board Secretariat and with TC's Digital Services and Transformation Office to secure proper funding to launch a procurement process (Request for Proposal (RFP) OR Advance Contract Award Notice (ACAN)) to secure the CAOAR solution.

- Long term (April 2022 – forward): Once funding is secured, publish CAOAR RFP/ACAN and award contract. With contract in place, the next step is to initiate phased (prioritized) deployment of the CAOAR solution. Depending on approved/allocated project budget, the phased implementation can be accomplished in 2 to 5 years.

This long term project (estimated at 5 years +) is expected to dramatically improve Civil Aviation's risk-based planning and risk analysis capability once fully implemented.

Adapting oversight to the COVID-19 pandemic

The COVID-19 pandemic has provided a need and opportunity to adapt oversight policies and procedures to a new reality. In order to enable the conduct of remote surveillance activities in response to the challenges posed by the COVID-19 pandemic, TC issued Internal Process Bulletin (IPB) 2020-14 – *Remote Surveillance During the COVID-19 Pandemic*¹⁰ on December 11, 2020. It provides a decision-making framework for the conduct of remote surveillance in concert with, or in lieu of, on-site activities. The IPB gives guidance on determining whether remote surveillance is appropriate for the activity being performed and the Canadian Aviation Directive (CAD) holder involved as well as the process for initiating remote surveillance with them.

Remote surveillance is still new and as such the full range of its use and effectiveness is not yet known. At present, it has allowed us to conduct oversight while respecting public health orders. Preliminary results suggest that it is well suited to certain activities such as document/record review and interviews. While remote surveillance will never replace on-site activities, as technology improves and the process is refined, it may prove to be a useful tool to in the oversight process by allowing preliminary sampling or interviews to occur, which will maximize on-site activities and refine areas of concern.

The Targeted Inspection (TI) methodology enabled TC to assess the impact of the pandemic on Canadian certificate holders and to capture emerging safety risks in a changing landscape. During the onset of COVID-19, this allowed TC to follow public health orders while maintaining effective oversight by deploying inspectors only where an immediate risk was identified. Through the TI, TC established risk thresholds that would trigger reactive surveillance if any aspect of a certificate's assessment reached those limits.

¹⁰ Transport Canada (2020). Internal Process Bulletin (IPB) 2020-14 – *Remote Surveillance During the COVID-19 Pandemic*.

As TC prepared to resume regular surveillance, the TI results were considered in conjunction with additional risk indicators to re-prioritize activities for the remainder of the planning year.

In June, TC performed a second round of the COVID-19 TI in order to determine how risks have changed or evolved since last year. The results are still being analyzed.

March 2022: TSB assessment of the response (Satisfactory in Part)

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

The Board is pleased that TC is continuing to take steps to improve its surveillance program and notes that the following actions have been taken since the last update:

- Quality assurance of surveillance findings
 - Created the Finding Review Committee, which carries out a quality assurance function by reviewing all findings entered by TC inspectors. The committee provides feedback to their respective operational groups to support continuous improvement in the quality of findings TC is writing.
 - Began a third revision of SI-SUR-029 - *Writing Findings for Non-Compliance* to provide new tools to help inspector decision-making. The national consultation process was planned for fall/winter 2021; however, TC recently indicated this process has been delayed as work continues on the surveillance program.
 - Initiated the development of a tool for the automation of qualitative risk indicator information through the Surveillance Analytical Risk Algorithm (SARA) program. This program is intended to improve the accuracy and timeliness of data gathering and includes a planning module that should streamline the risk-based planning process.
- Civil Aviation Oversight Application Rationalization (CAOAR) project
 - Continued moving forward with this project aimed at reducing the number of oversight-related databases and systems, even as funding for full implementation is not yet secured past the short-term. TC has outlined short-, medium-, and long-term goals for this project. According to TC, this long-term project (estimated at 5+ years) is expected to dramatically improve Civil Aviation's risk-based planning and risk-analysis capability once fully implemented.
- Adapting oversight to the COVID-19 pandemic
 - Adapted oversight policies and procedures to conduct surveillance activities remotely in response to the challenges posed by the COVID-19 pandemic.
 - Issued Internal Process Bulletin (IPB) 2020-14 – *Remote Surveillance During the COVID-19 Pandemic* on 11 December 2020, which provides a decision-making framework for conducting remote surveillance in concert with, or in lieu of, on-site activities.

The Board is encouraged by TC's ongoing efforts to enhance its current oversight policies and training. However, TC's response does not provide a clear framework for how it plans to ensure that the frequency and focus of surveillance (i.e., systems level vs. process level) and post-surveillance activities, including enforcement, are commensurate with the operator's ability to effectively manage risk. As a result, it is not possible for the Board to determine, at this point, if these actions will substantially reduce or eliminate the risks associated with the safety deficiencies identified in the recommendation.

Therefore, the response to Recommendation A16-14 is assessed as **Satisfactory in Part**.

October 2022: response from Transport Canada

Transport Canada (TC) agrees with the recommendation.¹¹

Since the recommendation was issued in 2016, TC launched in 2016, and completed in 2018, a "Surveillance Program Evaluation and Update" project. TC also established a training program to explain to the inspectorate the changes resulting from this project. The goal of the project was to ensure the surveillance program effectively verifies regulatory compliance at appropriate intervals and is effective in carrying out enforcement action, as required. In 2020, TC has also moved to a multimodal enforcement model. Civil aviation is working actively with the newly created Center for Enforcement Expertise to develop procedures and guidance to ensure effective enforcement process.

In 2021, TC had formed the "Finding Review Committee" (FRC) through which 100% of findings entered by TC inspectors are undergoing quality assurance. Findings which do not pass an initial screening are analyzed by the FRC which is comprised of representatives from all regions and operational branches. Representatives then provide feedback to their respective operational groups to support continuous improvement in the quality of findings TC is writing. Results from the committee are reported monthly to Civil Aviation senior management.

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

- Continuously develop its Quality Assurance system to support further improvement of its surveillance system and invest the resources necessary to ensure that the surveillance program remains effective at mitigating risks associated with Civil Aviation; and,
- Launch a Civil Aviation Oversight Application Rationalization (CAOAR) project aimed at reducing the number of oversight related databases and systems while improving workflow, interconnectivity, analysis and reporting capability.

¹¹ 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.

Quality Assurance of Surveillance Findings

Further work on the Quality Assurance program has been delayed due to competing priorities and limited resources; however, the FRC has continued the work of reviewing 100% of findings entered by inspectors. The amount of data collected since April 2021 has allowed for some preliminary analysis on where issues are arising.

Due to the success of the FRC, TC plans to leverage it to progress the QA program. The mandate of the FRC will be expanded to review the gaps in quality control and quality assurance from a national perspective. The FRC will regularly brief regional Management on Quality Assurance findings and recommended best practices. There will be a focus on effectiveness of the inspection activity (selection of the right point of entry, tailoring the scope of the inspection to the evidence, etc.).

Civil Aviation Oversight Application Rationalization Project (CAOAR)

TC continues to move it forward even as funding for full implementation is not yet secured past the short term. The implementation plan is as follows:

In regard to the CAOAR project, TC continues to move it forward as funding for full implementation remains to be secured. A phase II decision on the National Supply Chain MC is expected for Fall 2022. During the past year CAOAR has completed and published the Request for Information (RFI) as well as evaluated potential vendors and solutions through RFI response analysis and vendor demonstrations. As of August 2022, the CAOAR project team has been fully resourced to support the development of the Request for Proposal (RFP). The updated implementation plan is as follows:

- Short term (August– October 2022): CAOAR is in the process of finalizing Gate 2 endorsement requirements and will be seeking approval from the Technical Architecture Committee and TC's Architecture Review Board (TAC/ARB) in September.
- Medium term (November 2022 – March 2023): Whereas the results of the RFI have eliminated the option for an Advance Contract Award Notice (ACAN) the primary goal for the CAOAR project during the 2022/23 fiscal year is to finalize development of the RFP and supplemental documentation. Coordination with TC's Digital Services and Transformation Office (DSTO) on in-house development activities remain ongoing (e.g. CAMMS, E-Licensing, Digital Flight Tests) and will continue to be assessed based on known solution capabilities (COTS & In-house Dev.). CAOAR will continue to work with TBS and with DSTO to secure proper funding and will continue engagement with PSPC to actively plan out the CAOAR procurement process which may include one or more reduced scope pilots/prototypes.
- Long term (April 2022 – forward): Once funding is secured, publish CAOAR RFP and award contract. With contract in place the next step is to initiate phased (prioritized) deployment of the CAOAR solution in alignment with in-house development activities. Depending on approved/allocated project budget, the phased implementation can be accomplished in 2 to 5 years.

This long-term project (estimated at 5 years +) is expected to dramatically improve Civil Aviation's risk based planning and risk analysis capability once fully implemented.

February 2023: TSB assessment of the response (Unable to Assess)

In its latest response, Transport Canada (TC) stated that it agrees with the recommendation, as it has since June 2018.

The Board notes that most of TC's latest response contains information that was previously provided. The Board is pleased to know that TC continues its efforts to improve its Quality Assurance program. The Board also notes that TC continues to work on the Civil Aviation Oversight and Application Rationalization Project, despite the fact that funding has not been secured beyond the short term, and that it is estimated this program will take more than 5 years to complete.

The Board is pleased that TC continues to make efforts to improve surveillance; however, the Board's previous concerns remain. TC's response does not provide a clear framework for how it plans to ensure that the frequency and focus of surveillance (i.e., systems level vs. process level) and post-surveillance activities, including enforcement, are commensurate with an operator's ability to effectively manage risk. Additionally, TC's projected timeline to complete its long term actions will mean that this recommendation will have remained open for more than 10 years. Given the lack of specificity and the uncertainty expressed in TC's response, the Board has concerns about whether TC will take the necessary actions to substantially reduce or eliminate the risks associated with the safety deficiency identified in Recommendation A16-14, and when those actions will be completed.

Therefore, the Board is **unable to assess** TC's response to Recommendation A16-14.

September 2023: response from Transport Canada

Transport Canada (TC) agrees with the recommendation.

Since the recommendation was issued in 2016, TC launched in 2016, and completed in 2018, a "Surveillance Program Evaluation and Update" project. TC also established a training program to explain to the inspectorate the changes resulting from this project. The goal of the project was to ensure the surveillance program effectively verifies regulatory compliance at appropriate intervals and is effective in carrying out enforcement action, as required. In 2020, TC has also moved to a multimodal enforcement model. Civil aviation is working actively with the newly created Centre of Enforcement Expertise to develop procedures and guidance to ensure effective enforcement process.

In 2021, TC formed the "Finding Review Committee" (FRC) through which 100% of findings entered by TC inspectors are undergoing quality assurance. Findings which do not pass an initial screening are analyzed by the FRC which is comprised of representatives from all regions and operational branches. Representatives then provide feedback to their respective

operational groups to support continuous improvement in the quality of findings TC is writing. Results from the committee are reported monthly to Civil Aviation senior management.

In TC's September 2021 update and October 2022 update, the Department committed to:

- Continuously develop its Quality Assurance system to support further improvement of its surveillance system and invest the resources necessary to ensure that the surveillance program remains effective at mitigating risks associated with Civil Aviation; and,
- Launch a Civil Aviation Oversight Application Rationalization (CAOAR) project aimed at reducing the number of oversight related databases and systems while improving workflow, interconnectivity, analysis and reporting capability.

Quality Assurance of Surveillance Findings

The FRC diligently conducts a comprehensive review of all deficiencies identified by TC inspectors, ensuring a thorough assessment of our operations. The data gathered through this process not only highlights areas in need of improvement but also serves as a valuable resource for shaping inspector training initiatives. The next steps of the project are as follows:

- **In the short term (Q3 2023–24)**, the Finding Review Committee (FRC) will deliver a conclusive report summarizing project outcomes and proposing necessary steps to enhance the Quality Assurance (QA) Program, with a specific focus on addressing deficiencies within the surveillance program. During this phase, TC will carefully consider corrective action plans in response to the findings from the ICAO [International Civil Aviation Organization] USOAP [Universal Safety Oversight Audit Programme] audit, ensuring a comprehensive approach to program improvement.
- **Transitioning into the medium term (Q3/Q4 2023–24)**, following executive-level approval of QA recommendations, TC will establish a dedicated project team responsible for developing essential guidance, including Staff Instructions, implementation plans, and communication materials, facilitating the effective execution of the QA Program. Simultaneously, TC will engage in a comprehensive document framework process, involving national consultation on the Staff Instruction, ultimately leading to the publication of a revised Staff Instruction for reference.
- **Looking forward to the long term (Q1 2024–25)**, the new QA Program will be implemented, seamlessly integrating into TC's operations. A robust system of continual monitoring will be established to assess the program's performance and make necessary adjustments, ensuring sustained effectiveness over time.

The FRC's efforts, combined with the introduction of an enhanced QA Program, are poised to elevate the quality of findings and observations produced by TC. This, in turn, will bolster our knowledge base regarding enterprises, ultimately enhancing our risk-based planning process for inspection frequency and entry points. Moreover, improved findings will provide stronger support for enforcement actions when they are deemed necessary.

Civil Aviation Oversight and Application Rationalization Project (CAOAR)

The CAOAR project has received full endorsement to proceed into the Elaboration & Planning phase, and funding has recently been secured from the Strategic Allocation Fund through 2025–26. The development of the Request for Proposal (RFP) is nearing completion, with the majority of procurement documentation having already undergone review and vetting by Public Services and Procurement Canada (PSPC) and TC. While some specifics of the procurement approach still require clarification, we anticipate resolving these issues by the end of Summer 2023, well ahead of the publication date.

CAOAR is actively engaged in research and collaboration with both internal and external stakeholders to support the creation of a user interface (or portal) essential for feeding the CAOAR solution and legacy applications. Technical assessments and support for transitioning application frameworks, including data migration, are ongoing but contingent upon the identification of a vendor. The next steps in the CAOAR project's development are as follows:

- **In the short term (Fall 2023)**, the primary focus will be on finalizing the Request for Proposal (RFP) and its associated documentation, including translation where necessary. TC will publish the CAOAR RFP on Canada Buys and diligently adhere to the 40-day posting requirement to ensure a transparent and efficient procurement process.
- **Moving into the medium term (Early 2024)**, TC's efforts will center on collecting and meticulously evaluating vendor responses in accordance with predefined criteria, employing paper evaluations. TC will also promptly address any communications or inquiries from prospective vendors. In parallel, TC will conduct essential demonstrations and Proof of Proposal (POP) tests to ensure the selection of the most suitable vendor(s). Additionally, TC will fulfill the Project Management Framework governance requirements, including the development of the Project Charter, Data Migration Plan, and Change Management Plan, setting the stage for a well-structured deployment.
- **As we transition to the long term (April 2024 – onwards)**, TC anticipates awarding the contract in Q1 2024–25, marking a pivotal milestone in the project. TC will then initiate a phased and prioritized deployment of the CAOAR solution, aligning it seamlessly with in-house development activities. Each phase of deployment will be accompanied by meticulous Data Migration and User Acceptance Testing. The timeline for completion of this phased implementation will be contingent on the approved project budget, with the flexibility to span anywhere from 2 to 4 years.

This long-term project, estimated to span over 5 years, is expected to significantly enhance Civil Aviation's capacity for risk-based planning and risk analysis once fully implemented.

February 2024: TSB assessment of the response (Unsatisfactory)

In its latest response, Transport Canada (TC) reaffirmed that it agrees with Recommendation A16-14.

The Board notes that TC's response consists of 3 parts. The first part contains information that has been previously assessed by the Board. The second part discusses TC's plans with regards to using the Finding Review Committee and its Quality Assurance program to elevate the quality of findings and observations. The third part of TC's response discusses the Civil Aviation Oversight and Application Rationalization Project and the contract process. According to TC, this project is estimated to span over 5 years and, when completed, is expected to enhance TC's capacity for risk-based planning and risk analysis.

The Board is pleased that TC continues its efforts to improve surveillance; however, TC's latest response does not address the Board's concerns from February 2023, which resulted in the Board being **unable to assess** TC's response. Specifically, TC's response does not provide a clear framework for how it plans to ensure that the frequency and focus of surveillance (i.e., systems level vs. process level) and post-surveillance activities, including enforcement, are commensurate with an operator's ability to effectively manage risk. In addition, the timeline to address the safety deficiency associated with this recommendation remains unclear.

Therefore, the Board considers the response to Recommendation A16-14 to be **Unsatisfactory**.

Latest response and assessment

September 2024: response from Transport Canada

Transport Canada (TC) agrees with the recommendation.

Since the recommendation was issued in 2016, TC launched in 2016, and completed in 2018, a "Surveillance Program Evaluation and Update" project. TC also established a training program to explain to the inspectorate the changes resulting from this project. The goal of the project was to ensure the surveillance program effectively verifies regulatory compliance at appropriate intervals and is effective in carrying out enforcement action, as required. In 2020, TC also moved to a multimodal enforcement model. Civil Aviation is actively working with the newly created Centre for Enforcement Expertise to develop procedures and guidance to ensure an effective enforcement process.

In 2021, TC formed the "Finding Review Committee" (FRC) through which 100% of findings entered by TC inspectors are undergoing quality assurance. Findings which do not pass an initial screening are analyzed by the FRC, which is comprised of representatives from all regions and operational branches. Representatives then provide feedback to their respective operational groups to support continuous improvement in the quality of findings TC is writing. Results from the committee are reported monthly to Civil Aviation senior management.

In TC's September 2023 update (RDIMS 19764552), the Department committed to:

- Continuously develop its Quality Assurance system to support further improvement of its surveillance system and invest the resources necessary to ensure that the surveillance program remains effective at mitigating risks associated with Civil Aviation; and,

- Launch a Civil Aviation Oversight Application Rationalization (CAOAR) project aimed at reducing the number of oversight related databases and systems while improving workflow, interconnectivity, analysis and reporting capability.

Quality assurance of surveillance findings

The FRC diligently conducts a comprehensive review of all deficiencies identified by TC inspectors, ensuring a thorough assessment of our operations. The data gathered through this process not only highlights areas in need of improvement but also serves as a valuable resource for shaping inspector training initiatives.

As mentioned in our update in September 2023, the FRC initiated a comprehensive pilot project aimed at enhancing TC's Quality Assurance (QA) Program within the surveillance process. This project, starting in April 2021 and concluding in August 2024, reviewed and validated 3244 surveillance findings and observations. The purpose was to identify and address concerns, provide feedback to operational groups, and support continuous improvement in the quality of findings. The data gathered through this process has been instrumental in shaping inspector training initiatives, with aggregated trends and opportunities for improvement presented to management monthly.

In response to the 2023 ICAO Universal Safety Oversight Audit Programme (USOAP) audit, TC has recognized the need to extend surveillance quality assurance beyond the FRC and has launched the Oversight Renewal Project to address identified gaps in its oversight program, particularly those related to enforcement and operators' ability to manage risk effectively.

Looking forward to the long term, the improved surveillance methodology, stemming from the Oversight Renewal Project, will be fully implemented by December 2025. This will ensure that TC's operations are aligned with all relevant standards, with a robust system of continual monitoring to assess the program's performance and make necessary adjustments over time. The enhanced QA Program is expected to elevate the quality of findings and observations produced by TC, thereby bolstering the risk-based planning process for inspection frequency and entry points and providing stronger support for enforcement actions when necessary.

Civil Aviation Oversight and Application Rationalization Project (CAOAR)

The Civil Aviation Oversight Application Rationalization (CAOAR) project continues to advance towards securing third-party Software as a Service (SaaS) solutions, aiming to replace a significant portion of Transport Canada (TC) backend applications and databases. These systems play a crucial role in supporting both program service delivery and oversight, while also addressing areas that require immediate digital remediation.

Since the previous update in September 2023, the project has made notable progress. The Request for Information (RFI) for both Stream A (Aviation Exam Devolution) and Stream B (backend oversight applications) has been completed. A Conflict of Interest (COI) delayed Stream B by nine months, but a remediation plan was developed, allowing the Invitation to Qualify (ITQ) to proceed. For Stream A, an Advanced Contract Award Notice (ACAN)

opportunity has been identified and is moving forward. The ITQ for Stream B and the draft ACAN for Stream A are both expected to be published in September/October 2024, pending governance approvals.

The CAOAR project has also completed most of its primary and secondary user engagements, both internally and externally, to support requirements gathering and change management planning. Additionally, a successful sandbox trial for the Electronic Personnel License (EPL), in compliance with W3C standards and aligned with upcoming ICAO mandates for electronic credentials, has been finalized. This trial was conducted in collaboration with Canada Digital Services (CDS) and other government departments, with funding secured to continue advancing the file.

Another milestone includes the development of TC's first mobile application, TC AIR (Aviation Intake Request), designed to streamline the intake of new and renewed Aviation Document Booklet (ADB) applications. This mobile solution also ties into broader efforts for portal development and digital modernization, addressing the expected surge in demand as up to 50 000 booklets are projected to expire between now and 2026-2027. A backend triage environment was also developed to manage these ADB application requests, reducing the workload for service teams by nearly 30 minutes per application.

In the **short-term**, over the next 1 to 3 months, the project will focus on obtaining final governance approvals from the Senior Project Review Committee (SPRC). Once approved, the ACAN for Stream A-AED and the Stream B-ITQ will be published on *CanadaBuys*. Additionally, a soft launch of the AIR application will be completed, allowing internal staff to begin using the platform.

For the **medium-term**, within the next 3 to 6 months, the team will finalize Security Assessment & Authorization (SA&A) and contracting requirements with the vendor identified for Stream A. This phase will also involve evaluating vendor submissions, including demonstrations, and preparing for the Request for Proposal (RFP) launch. The data migration and change management planning for Stream B will be aligned, while the industry-wide launch of the TC AIR application will take place, expanding access beyond internal use.

Looking ahead to the **long-term**, over the next 6 to 12 months, the project aims to secure a contract with the Stream A vendor, followed by implementation and deployment. During this phase, communication and change management (CM) activities will be conducted to support the rollout. For Stream B, the focus will shift to assessing RFP responses, identifying preferred vendors, finalizing governance requirements, and preparing contracting documentation. Concurrently, the team will continue work on both the AIR and EPL initiatives in coordination with CDS and other government departments.

March 2025: TSB assessment of the response (Unsatisfactory)

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

As in the previous update, TC's response can be broken into 3 distinct areas of discussion.

The first portion of TC's response consisted of information that has been previously assessed and will not be assessed again.

The second portion of TC's response provided an update to the Finding Review Committee (FRC) pilot project that began in 2021. According to TC, the FRC pilot project reviewed and validated 3244 findings and observations. TC's response indicated that the purpose of this project was to provide feedback to operational groups and support continuous improvement in the quality of findings. The response also stated that trends and opportunities for improvement are presented to management monthly. TC's response offered no insight into how this information is then used to ensure national standardization among front-line inspectors responsible for producing findings and observations. As identified during TSB Investigation A13H0001, it is vital that TC establish processes that ensure a national standard is set and maintained across TC's regional offices.

The third portion of TC's response discussed the Civil Aviation Oversight and Application Rationalization Project (CAOAR) and provided information and timelines about software development. The Board is encouraged that TC is taking steps to modernize software used to assist in its oversight role; however, it is unclear how this initiative relates to the safety deficiency associated with this recommendation.

According to TC, the 2023 International Civil Aviation Organization (ICAO) Universal Safety Oversight Audit Programme (USOAP) audit led TC to recognize "the need to extend surveillance quality assurance beyond the FRC." As part of that effort, TC launched the Oversight Renewal Project intended to "address identified gaps in its oversight program, particularly those related to enforcement and operators' ability to manage risk effectively." Since the accident associated with TSB Investigation A13H0001, TC has created, and reported on, several different projects, offices, boards, and committees. Some of those include:

- Civil Aviation Surveillance Program Evaluation and Update Project;
- National Oversight Office;
- Oversight Advisory Board;
- Finding Review Committee; and
- Surveillance Analytical Risk Algorithm (SARA) Program.

The Board notes that the stated intent of the Oversight Renewal Project is congruent with the underlying safety deficiency associated with Recommendation A16-14. The Board remains hopeful by this effort; however, it is uncertain how this latest project differs from TC's previous efforts, and TC's response raises additional questions. According to TC, this new project will be fully implemented by December 2025.

Overall, the Board is pleased that TC continues its efforts to improve surveillance; however, TC's latest response has yet to address the Board's concerns from February 2023 and does not provide a clear framework for how it plans to ensure that the frequency and focus of surveillance (i.e., systems level vs. process level) and post-surveillance activities, including enforcement, are commensurate with an operator's ability to effectively manage risk.

Therefore, the Board considers the response to Recommendation A16-14 to be **Unsatisfactory**.

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 A16-14, and it will reassess the response to the recommendation on an annual basis or when otherwise warranted.

This deficiency file is **Active**.