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Agenda Item 6: NAM/CAR Regional Safety/Air Navigation/Aviation Security/Facilitation Implementation Matters
6.2 Safety Implementation Matters

USING TARGETED INSPECTIONS AS A TOOL TO MITIGATE RISKS ASSOCIATED WITH UNSTABILIZED APPROACHES

(Presented by Canada)

EXECUTIVE SUMMARY
As Canada further develops its State Safety Program and reflects on the value a service provider's safety management system brings to regulators, this working paper reimagines the role of civil aviation safety inspectors as risk/hazard causal data collection agents in addition to their traditional role of regulatory compliance agents. Using targeted inspections as an evaluative information gathering tool, TCCA has further realized the potential for integration of hazard identification and safety performance monitoring as a function of safety oversight.

Strategic Objectives:	• Safety
References:	• Annex 19 – Safety Management • ICAO Safety Management Manual, 3rd Edition • Transportation Safety Board of Canada Accident Investigation Report No. A11H0002 • Transport Canada Civil Aviation Safety Alert No. 2014-03 – Using SMS to address

1.   Introduction

1.1   The purpose of this paper is to discuss the recent approach that Transport Canada Civil Aviation (TCCA) took to mitigate a known risk using targeted inspections and to discuss how this fits with the safety management approach versus a prescriptive regulatory approach.

1.2   Safety management systems (SMS) represent a performance-based approach to regulating as opposed to a prescriptive one. Indeed TCCA has put in place enforceable requirements to ensure operators identify and manage safety hazards and develop and meet safety performance targets.

However, this performance-based approach provides regulators and operators with a mechanism to ensure hazards are managed without the need for the regulator to always prescribe actions to reduce the risk.

1.3   TCCA always expects operators, through their SMS, to assess and manage risks. This exercise in using targeted inspections as an evaluative tool was conducted to determine if the SMS approach helps provide confidence in an operator's safety system as an alternative to prescribing specific regulations to enforce.

2.   Background

2.1   Following a fatal accident in Northern Canada on August 20, 2011, the Transportation Safety Board of Canada (TSB) determined that unstable approaches are a significant hazard. In its accident investigation report (A11H0002), the TSB recommended that TCCA require airline operators to "monitor and reduce the incidence of unstable approaches that continue to a landing" (TSB Recommendation A14-01).

2.2   In response to this recommendation, as well as the data made available by the Flight Safety Foundation, TCCA issued Civil Aviation Safety Alert (CASA) 2014-03. In this CASA, TCCA requests that air operators certified under Part VII, Subpart 5 of the Canadian Aviation Regulations (henceforth referred to as "airlines") review the hazard related to unstabilized approaches. TCCA further requested that airlines determine the appropriate mitigations through their regulated safety management systems.

2.3   In Canada, Civil Aviation Safety Alerts do not have the force of law, rather they are used to convey important safety information and typically contain recommended action items. However, section 107.03(c) of the Canadian Aviation Regulations makes airlines responsible for identifying hazards to aviation safety and for evaluating and managing the associated risks.

2.4   In CASA 2014-03, TCCA does indicate that civil aviation safety inspectors could verify how airlines used their SMS to take action against the subject hazard.

3.   Targeted Inspection/ Evaluative Approach

3.1   TCCA mitigated the risk through two separate strategies;

- Surveyed airlines to understand whether they identify unstabilized approaches as hazards and how they manage the risk.
- Targeted inspections to verify the approaches taken.

3.2   These two evaluation activities took place over the span of two years. The first was a questionnaire that civil aviation safety inspectors asked airlines to complete in 2015. Questionnaires requested information on methods to managing the risk of unstabilized approaches.

3.3   The second evaluation activity, in 2016, through targeted inspections on airlines regarding unstable approaches. The objective was to collect evidence that airlines could demonstrate that they were practicing what they communicated in the questionnaire. Civil aviation safety inspectors

used a common inspection worksheet to capture the results, which were submitted to national headquarters (i.e. Standards Branch, Technical Programs, Evaluation and Coordination Division) for evaluation and analysis.

3.4   The results of the regulatory evaluation gave the following data:

Question – All CAR Part VII, Subpart 5 Operators	2015	2016
1. Airlines voluntarily using SMS to address and mitigate hazards with unstable approaches	84.4%	85.7%
2. Airlines using means to monitor unstable approaches	87.5%	94.3%
2(a) Airlines using Flight Data Monitoring (FDM or FOQA) to monitor unstable approaches	21.9%	31.4%
2(b) Airlines using Line Oriented Safety Audits (LOSA) to monitor unstable approaches	28.1%	37.1%
2(c) Airlines using flight crew reporting to monitor unstable approaches	37.5%	54.3%
3. Airlines using more than one system to monitor or report unstable approaches	25%	45.7%

3.5   The next steps are to continue monitoring through inspections and evaluating the effectiveness of the actions taken.

4   Implications

4.1   The exercise that is the subject of this working paper emphasized the value of the key aspects of a State Safety Program. Specifically, monitoring hazards and incorporating safety performance indicators (SPIs) to act as triggers to take strategic action against emerging hazards and risks as part of a State safety oversight program. It also begs the question; *do regulators need to address every emerging issue through prescribed regulations or can they trust service providers to monitor and address certain hazards and risks through their SMS, provided an effective collaborative approach is in place?*

4.2   At a time when TCCA is fully engaged in advancing Canada's State Safety Program, this exercise provided another tangible example of how beneficial hazard identification and monitoring is in informing an oversight program. Oversight can be more than identifying and correcting regulatory compliance, but – and perhaps just as important – helping to understand causes of hazards and risks.

4.3   Using the oversight program to collect more data on hazards enables more informed, effective and efficient cause analysis. This data and the evaluations can be shared with the aviation community in Canada and globally to mitigate risks more quickly and widely. The better the community understands why hazards exist and/or the risks they present the safer the system can be. On that note, Canada intends to use the Regional Aviation Safety Team forum to share information more regularly on risks that TCCA has evaluated.

4.4   While there will always be a place for regulations, it is a common challenge for the modern regulator to fully grasp the operational realities of service providers. However, what this

working paper is intending to highlight is that regulators have options – and may not need to automatically jump to regulation as the first and only way to promote safety.

4.5   TCCA's interim evaluation report on unstabilized approaches notes that while *"the progress may have been influenced by the fact that enterprises were told that Transport Canada Civil Aviation would perform a follow-up inspection, the progress made is very encouraging."*

4.6   Regardless of the reason airlines reacted to the subject hazard, the fact that they did demonstrates the potential of collaboration between service providers, regulators and other State safety partners, such as the TSB. TCCA continues to evolve to a more proactive approach to safety oversight through the use of data that will help provide our partners in aviation safety with timely analysis and information to facilitate safe aviation practices. This effort supports Canada's pursuit of a Collaborative Safety Team. In addition, the data collected from these targeted inspections will be shared with the Pan America – Regional Aviation Safety Team (PA-RAST) as important lessons learned for all participants. TCCA recognizes that the success of these levels of collaboration require safety hazard identification and monitoring and the use of safety performance indicators.

4.7   TCCA has incorporated more targeted inspections into its oversight program based on the value of information from this initial exercise. TCCA is updating its surveillance planning model in such a way that envisions a process that more fully integrates organizations under Canada's State Safety Program. A cycle, if you will, that integrates safety analysts and evaluators to monitor, identify and interpret national safety hazards, risks and trends; safety inspectors in the field to understand the nature of those hazards through the collection of oversight data; safety policy and program analysts to use this knowledge to facilitate policy direction and decision-making on safety promotion and rule-making.

5   Conclusion

5.1   This paper serves to share lessons Canada has learned as we advance our State Safety Program and promote discussion on our collective progress of implementing and promoting sustainable, effective safety management practices.

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