International Civil Aviation Organization
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Agenda Item 4: RASG-PA Implementation Status and Perspectives on SMS/SSPs

THE CHALLENGES OF REGULATING IN AN SMS ENVIRONMENT

(Presented by Canada)

SUMMARY

This paper will provide an overview of Transport Canada's approach to SMS and will focus on the use of a systems based approach to regulatory oversight. The SMS assessment tool and methodology will be examined as well as the results to date of this approach.

Strategic Objectives	*This working paper is related to the Strategic Objective A.*

1. Introduction

1.1. A decade has passed since Transport Canada began the process of regulating safety management systems (SMS). On the surface it appeared quite a simple task: develop a set of regulatory instruments and the supporting tools to facilitate the implementation of SMS in Canadian aviation. What has transpired over the past ten years is the focus of this paper.

2. Discussion

2.1. For an SMS to be effective there has to be a willingness to change the way *both* the regulator and the industry conduct their business. This paper looks at the process of discovery, the challenge of change and the major activities Transport Canada undertook to facilitate the successful implementation of SMS.

2.2. In the Canadian context a safety management system: *" means a documented process for managing risks that integrates operations and technical systems with the management of financial and human resources to ensure aviation safety or the safety of the public*"[1] From a practical perspective this means that an organization must develop, maintain and integrate a management system comprised of six basic components:

[1] Canadian Aviation Regulations, Part 101.01(1)

- A safety management plan
- Training
- Safety oversight (reactive and proactive)
- Documentation
- Quality assurance
- Emergency response preparedness

2.3. These six components and related elements form the basis of a performance (or objective) based integrated management system that looks specifically at the risks to flight safety associated with the operations conducted under the certificate. In developing this model, Transport Canada considered what was already in place in the Canadian Aviation Regulations (CARs) and what was missing to complete the system requirements. Industry was involved throughout in the discussion and Transport Canada participated in implementation projects with several airlines to enhance its knowledge and experience

2.4. From the outset, it became clear that even with the best of intentions and the appropriate resources a compliant, let alone effective, SMS could not be built overnight. But how can a regulator build in the need for time when most regulatory frameworks require immediate compliance? Transport Canada issued an exemption from the regulations providing a 39-month window for implementation. This same window has been, and will continue to be, provided for organizations required to implement an SMS.

2.5. Establishing an effective SMS requires more than compliance to a regulation. A safety culture is a prerequisite for an effective SMS and no regulation can adequately prescribe it. It's an expected outcome of compliance. If the organizations have involved the appropriate parties and incorporated their input into the development of the SMS, encouraged people to report hazards, incidents, accidents and errors without fear of retribution and continuously improved the system based on multiple inputs, they will be well on the way to having a SMS that is supported by a healthy culture.

2.6. In this way Transport Canada expects operators to adopt a holistic approach to the operating environment and proactively pursue knowledge related to hazards and manage attendant risks. A comprehensive safety risk profile has to consider all aspects of the operating environment including regulated and non-regulated areas to be effective. For example, the hazards and risks involved in flying a particular route can only be accurately assessed if one considers the contributing role that maintenance, airports, air traffic control, fuel suppliers etcetera play. An assessment of the hazards related to the flight deck in this circumstance would provide insufficient information from which to draw conclusions.

2.7. The demographic, economic and social challenges facing the Canadian aviation industry and Transport Canada are representative of the situation globally. The Canadian experience, as it relates to SMS, is not unique and there are lessons to be learned for all. As it was new, there was a fundamental lack of understanding of SMS, and consequent misperceptions in industry and within Transport Canada itself. This lack of understanding underlines the importance of training and ongoing communications as a critical success factor in the implementation of SMS. So too, is the need to fundamentally address the changing role of the regulator in an SMS environment and the assessment of the state's internal safety culture.

2.8. Early in the transition, Transport Canada realized that its internal systems and processes needed to be redesigned to operate efficiently and effectively to regulate an SMS environment. The concept of an integrated management system, or IMS, is an evolution of Transport Canada's management processes into a systematic, risk-based management process, identical in concept to the principles that guide SMS, but more far reaching. IMS is about management accountability, resource management and planning, program design and implementation, as well as measurement, analysis and continuous improvement. IMS furthers efforts to work as a cohesive whole, to improve safety policy and regulatory development while balancing the needs of our stakeholders. Transport Canada is not alone in recognizing the benefits of this approach. ICAO is mandating its member states to put in place similar systems under the banner of State Safety Programmes (SSP). In the IMS environment Transport Canada has recognized the need to bring together and better integrate employees' separate skills and knowledge to a far greater extent than ever before. While employees will maintain the strengths of the personal experience they bring to Transport Canada, they are being asked to develop a more solid understanding of the role of their colleagues and work closely in multi-disciplinary teams to form a culture which values continuous improvement and the sharing of knowledge.

2.9. Transport Canada inspectors have had to be retrained to take a systems approach to oversight, rather than individual compliance, and Transport Canada has moved to an enterprise approach where companies with multiple certificates are managed by a multi disciplinary group of specialists. This has resulted in a complete reorganization of Transport Canada Civil Aviation Directorate. A further review of the existing regulatory structure will need to be carried out, including common certification standards, unified operating certificates and increased harmonization in relation to the technical areas.

2.10. From an oversight perspective, the most significant is the move to a new approach to overseeing certificate holders. In the past, Transport Canada inspectors audited procedures and reviewed records to see if a company met regulations or not. These are known as compliance inspections. Under SMS, inspectors will be taking a more in-depth look at companies. This oversight involves specific, targeted and routine inspections. Inspectors will go into a company to watch how it operates and speak with the workers to measure how well a company's procedures identify and address safety hazards before they become a serious safety risk. This allows Transport Canada inspectors to have more contact with a company's senior management, supervisors and employees.

2.11. Assessments look to see if the SMS complies with regulations and measures how effective a system it is, based on performance. Inspectors review a system by activity, and rate each sub-activity with a score from one to five. Scores are based on defined expectations, and a score of three means that the regulations are being met. A score above three means that the company has gone beyond the regulatory requirements using industry best practices and demonstrates that they are always working to improve the way it operates.

2.12. The theory behind all of this is that if the system is healthy and working effectively the management of the operational areas and compliance level will be equally robust. Transport Canada expects the organization to verify compliance through a robust quality assurance program while we ensure that the processes used to verify compliance are effective. When there is doubt that an operator is in compliance with the regulations, Transport Canada inspectors can step in at any point in the process to make sure that the company follows the regulations as well as measure how well they apply them. This approach is well established in other high-risk industries but has not been widely used in the regulatory oversight of Civil Aviation.

2.13. As Transport Canada phases in SMS throughout the industry, it is continually striving to improve the implementation process, the guidance material and the services. The implementation of SMS for smaller operators continues to provide ongoing challenges.

2.14. Transport Canada continues to assess and adopt the internal changes required for success. The road to implementing SMS has been longer and rockier than anticipated. Transport Canada has not only learned from those challenges, but used them as opportunities to make SMS an even more robust system. Based on the results so far, there is every reason to believe that the end result will be even more impressive than anticipated.

3. Action by the meeting

3.1. The meeting is invited to:

a) take note of Canada’s continuing commitment to the implementation of SMS throughout the aviation industry;

b) take note of the lessons learned presented in this paper gained during Canada’s SMS implementation; and

c) continue to share best practices and lessons learned on SMS and SSP.

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