

Airport Consulting

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NEW DIRECTIONS IN AIRPORT SAFETY

CLARIFYING SMS, SRM AND THE SAFETY CASE

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Airport consultants have likely heard about the FAA-driven safety initiatives that are beginning to impact airport clients: Safety Management Systems (SMS), Safety Risk Management (SRM) and Safety Cases. These are exciting efforts but, as with any significant change, their implementation has generated confusion. Over the past year, there have been many questions from airport consultants and operators about these programs. What do SMS, SRM and Safety Cases require of airports? How do they differ? What is their impact to airport operators both now and in the future?

The new FAA safety initiatives will reach not only into operations, but planning, environmental, design/engineering and construction activities. As a result, consultants should understand these terms, along with their similarities and

differences, to answer the questions that will undoubtedly arise from colleagues and clients.

SMS, SRM and Safety Case — What's the Difference?

In Advisory Circular 150/5200-37, the FAA defines SMS as “the formal, top-down, business-like approach to managing safety risk. It includes systematic procedures, practices and policies for the management of safety (including safety policy, safety risk management, safety assurance and safety promotion).” At its essence, SMS is a Quality Program (otherwise referred to as a “System”) focused on proactively managing and controlling safety at (in this application) airports.

The FAA’s definition identifies the four elements that comprise an SMS: Safety Policy, Safety Risk Management, Safety Assurance and Safety Promotion. Although the integration

and deployment of each element is critical to a successful SMS implementation, the SRM element is the lynchpin of the program.

SRM is a set of processes, procedures and practices that is adopted to identify hazards, to assess and analyze the risks, and to mitigate all unacceptable risks. As previously stated, SRM is a component of the larger SMS Program, and it provides the structure, methods and tools by which hazards and the associated risks can be identified and treated. It also includes the standards and templates for documenting the output of the SRM process — the Safety Case.

The Safety Case is one of the primary tools employed in SRM. When airports are proposing changes or new projects, a Safety Case can help to proactively identify and document potential

See AIRPORT SAFETY on page 16

page 4

SPECIAL FEATURE:
NEXTGEN FOR
AIRPORTS



page 6

CONSULTANT
PERSPECTIVE:
CLOSING THE
COMMUNICATION
GAP



page 12

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OF 31ST ANNUAL
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AIRPORT SAFETY *continued from page 1*

hazards and help the team to measure risks, mitigations and alternatives in a structured and methodical way.

It is important to note that the FAA's Air Traffic Organization (ATO) has been heavily focused on the Safety Case in the SRM element of their SMS implementation. The ATO Safety Case is manifested in one of two documents:

- Safety Risk Management Document (SRMD)
- Safety Risk Management Decision Memorandum (SRMDM)

The SRMD is required if new hazards are introduced into the National Airspace System (NAS) and is a lengthy, detailed product with specific documentation requirements for those hazards, the risk(s) associated with them and the mitigation that was identified to lessen the risk(s). The SRMDM is required if no new hazards are identified. The SRMDM is much shorter, less detailed and merely documents that no new hazards will be introduced into the system.

In general conversation, the term "SRMD" is often used interchangeably with SMS and/or with SRM. However, it is important to note that the Safety Case (as documented in the SRMD or SRMDM) is the output of SRM processes. For simplicity's sake, unless specifically discussing one of the documents, the generic term "Safety Case" will be utilized throughout the

remainder of this article. It is recommended that consultants also use this term when discussing the subject with colleagues and clients.

ATO and the Safety Case: A Brief History

Among the FAA's divisions, the FAA's Air Traffic Organization is by far the furthest along in implementing SMS. ATO started its initiative in 2004 and has had the opportunity to test and refine the four elements of a typical SMS program. ATO's SMS includes processes to collect and analyze safety data; conduct safety reviews, audits and evaluations; investigate air traffic incidents; and continuously monitor data to manage NAS safety. Specifically, ATO has developed a formalized and proactive SRM process that is used to monitor changes made to the NAS and their impact on safe operations.

As part of ATO's SRM process, a panel consisting of appropriate Subject Matter Experts (SME's) may be convened and results documented in a Safety Case for proposed changes to the NAS. Whether or not a panel is formed and who participates on the panel is directly related to the type and complexity of the proposed change. Also, ATO does not convene panels and create Safety Cases for those changes that already have processes and procedures in place, such as a new generator being installed for an ILS system.

In many of the Safety Case panels, SME participation from the local airport owner and and FAA's Airports Office (ARP) representation,

such as certification personnel, has been requested. This has been the case for physical changes to an airfield (a runway extension is a good example). Through its SRM, ATO has the means and mechanisms in place to conduct such a Safety Case panel and has therefore taken the lead on these types of projects.

Over the past three years, ATO has generated numerous Safety Cases through its SRM process and airport owners have been asked to participate in panels as stakeholders and SME's. Airports participate in the panel; assist in identifying hazards; assess and analyze the risk(s); and review and approve the final Safety Case document, (either the SRMD or the SRMDM).

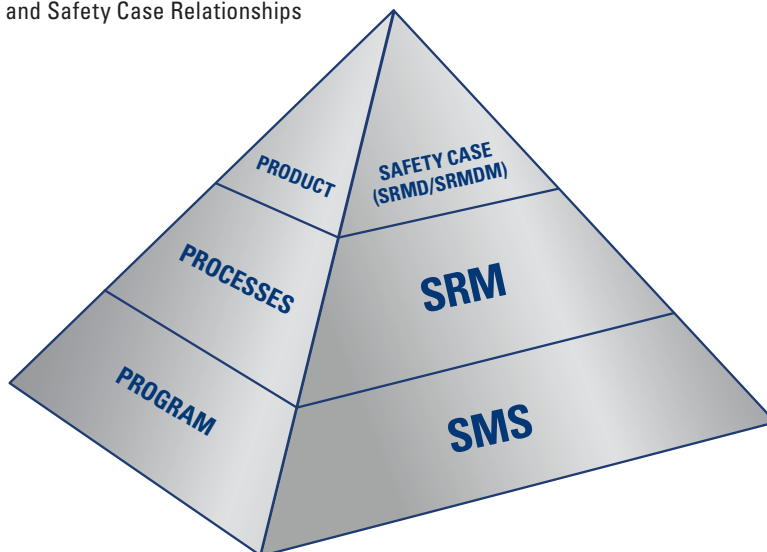
In the current state of implementation, ATO is the owner of the SRM process and the resulting Safety Case and airports are participants in the process. The future of ATO's leadership on these projects is not yet known. It is possible that ATO will continue to lead and own SRM for all projects with impact to the NAS. It is likely, however, that some responsibility will be transferred to FAA's ARP and/or airports. Ultimately, airports may take more ownership and accountability for driving the SRM process, generating the Safety Case, and ultimately accepting any risks that remain following mitigation efforts.

Convergence of SMS at Airports

FAA's Airports Office has recently initiated a process to adopt SMS. As it moves forward with an SMS Notice of Proposed Rulemaking (NPRM), processes and products similar to ATO's SMS activities will likely be required of airports.

Before discussing these programs further, it is important to note that ARP has delineated and frequently speaks of the forthcoming SMS requirements as "internal" and "external" programs. This language may be confusing to airport clients and is therefore an important distinction to understand. The SMS "internal" program requirements will include processes that ARP implements within its own organization and will be formally introduced via an Executive Order within the FAA. SMS "external" program requirements will be those that airports are required to implement and will be formally introduced via the NPRM.

SMS, SRM and Safety Case Relationships





Although the questions of “when” and “how” are largely still unanswered, airports will be a central point in a convergence of SMS programs.

SMS “Internal”

In the future, the scope of ARP’s “internal” SMS implementation may be for local airport owners or ARP to convene and conduct a panel for projects supported through federal grant funds (AIP). The interaction between projects and changes to the facility will likely be the point at which ARP and local airports “meet” in their Safety Case development.

How will the “internal” SMS initiative manifest itself within the FAA grant program? To date, there have been discussions surrounding airports’ need to generate a preliminary Safety Case for the preferred alternative developed during the master planning process. Additional discussion has focused on the possibility of generating a Safety Case as validation of the preferred alternative during the Environmental Assessment (EA) or Environmental Impact Statement (EIS). An additional opportunity for ARP to require a Safety Case panel may be at the project design phase for the preferred alternative.

It is expected that local airports will need to convene a Safety Case panel prior to major construction projects impacting the NAS. It is likely that this will take the form of a review of the construction plan and will either incorporate or replace the current construction safety plan process. However, it is unclear at this time

whether a Safety Case for major construction projects would fall under the requirements for SMS “internal” or under SMS “external.”

SMS “External”

ARP anticipates issuing the NPRM requiring SMS implementation by airport owners and operators in late 2010. It is expected, but not confirmed, that the FAA’s SMS rule will require airports to conduct SRM by convening Safety Case panels and creating a SRMD or SRMDM (as appropriate) for any projects that impact the NAS.

Still unknown is whether the scope of the requirement will include the Movement Area, the Non-Movement Area, or both. It is additionally unclear whether airports will be required to produce a Safety Case for projects that do not directly impact the NAS, but that do have local airport operational impacts such as changes to commercial airline operations on the main ramp.

Regardless of the NPRM outcome, airport owners are strongly encouraged to consider developing processes and procedures within its SMS that address local changes and ramp safety as well as movement area changes. These processes will be an important piece in the development of an SMS at airports if it is truly expected to become part of an airport’s culture.

Now What?

The implementation of SMS across the national system may pose a significant change to the

manner in which airport owners conduct their business. The SRM processes and resulting Safety Case products will be the areas in which airports experience the most overlap and potential confusion between requirements for their own SMS and requirements for ATO and ARP SMS. It is critical for the FAA to have consistency and standardization across SRM processes. Because airports will need to comply with ATO along with “internal,” and “external” ARP SMS requirements, the rules must be straightforward, detailed and aligned with one another.

Even the most straightforward regulations may constitute a major change for airport clients. Airport consultants should develop an understanding of the existing ATO processes; learn and correctly use important new terminology to ensure consistency among the industry and clients; and closely monitor progress on the ARP SMS implementation so that guidance, leadership and solid expertise to the airport community can be provided.

Consultants should also understand how the new SMS program requirements will impact the products and services provided to clients. Proactively anticipating additional scope and/or cost items, along with any changes to services resulting from SMS implementation, will prevent unpleasant surprises to clients. ✈