

## industry



# SAFETY MANAGEMENT SYSTEMS: A GLOBAL PERSPECTIVE

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**T**he International Civil Aviation Organization sets global aviation standards for ICAO member states through Standards and Recommended Practices. Safety management is discussed in a number of SARPs but is detailed in Annex 19, Safety Management, which describes the components of an SMS as being:

- Policy.
- Risk management.
- Promotion.
- Assurance.

The ICAO has required SMS for certain types of operations since Jan. 1, 2009. Technically, all ICAO member countries are required to comply with the SARPs. However, individual civil aviation authorities vary on the extent of compliance with the ICAO SARPs. Those which do not comply completely with a particular requirement submit a formal difference with the ICAO, stating which SARP or

portion of a SARP they do not follow explicitly.

The Federal Aviation Administration, for example, has filed a difference with the ICAO, allowing certain U.S. organizations to postpone SMS implementation.

Other countries like Canada, Switzerland and Australia have been leaders in the implementation of SMS. Still others, including many Latin American countries, are currently requiring SMS implementation of some organizations.

“Canada began SMS implementation with larger operations and is now rolling out plans for a more-widespread mandate with full implementation expected by 2022,” said Ric Peri, vice president of government and industry affairs for the Aircraft Electronics Association. “Some Latin American countries are also announcing SMS mandates.”

In the U.S., 14 CFR Part 5 describes SMS requirements in a manner consistent with ICAO requirements. However,

Part 5 only applies to Part 121 airlines. Plans to extend implementation to Part 145 repair stations, Part 135 air carriers, and other certificated entities have stalled over the years with little progress toward mandated implementation.

Although Part 5 doesn't directly apply to airports, repair stations and other vendors to Part 121 airlines, the Part 121 mandate has unintended effects. Part 121 airlines are required to have SMS, which likely includes management and oversight of its vendors, so airports, repair stations, and others implement SMS to meet the airline's needs.

"Operators are driving implementation in many cases," said Russ Lawton, director of safety and ASAP program manager at the Air Charter Safety Foundation. "Customer requirements have a trickle-down effect, resulting in voluntary implementation for repair stations and other vendors."

### **Voluntary implementation still the norm**

Because regulatory mandates vary from one state to another, SMS implementation has become largely voluntary for many aviation organizations. What pushes an aviation organization to implement SMS, if not required by their aviation authority?

There are several non-regulatory drivers at play. Besides the tragedy of lives lost in an aviation accident, even minor accidents and incidents can be quite expensive. Direct costs related to loss of aircraft, insurance deductibles, and so on can be significant. Indirect costs like loss of use of equipment, loss of staff time, and negative media exposure can be difficult to quantify but are nonetheless considerable.

Industry best-practice audits, such as the Air Charter Safety Foundation Industry Audit Standard, the International Standard for Business

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## **General aviation manufacturers: SMS is a solution**

General aviation design and manufacturing organizations have a unique outlook on SMS. Typically, these organizations are not certificated entities by civil aviation authorities, but their products end up being approved or certificated by authorities around the world. For these companies, SMS is not just a safety program – it's an efficiency program. SMS could have multiple benefits for design and manufacturing organizations, including less-cumbersome approval processes by the FAA and a more-globalized approach to approvals from aviation authorities around the world.

"SMS is one way to increase the ability of regulators to recognize or accept capabilities of various organizations," said Walter Desrosier, vice president of engineering and maintenance at the General Aviation Manufacturers Association. "SMS isn't a complete solution. But as part of the organization's design and compliance process, SMS can provide a mechanism for the aviation authority to provide oversight of the design of your product."

A leading recommendation of a 2014 Part 21 SMS Aviation Rulemaking Committee, of which the AEA and GAMA were participants, was to improve the FAA's approach to Part 21 and type approvals, increasing efficiency and effectivity, by moving from a transactional approach to a systems approach with safety oversight. While GAMA hopes the related notice of proposed rulemaking, expected to be published in 2018, will recognize SMS as a way to modernize FAA oversight, the organization is also insistent any SMS mandate actually meet the goals of SMS and be scalable so SMS can be efficiently integrated into business processes.

"Industry needs to be engaged in the process to be sure any mandate for SMS is reasonable and appropriate and does not have undue impact but meets the intended goals," Desrosier said. "It's the role and responsibility of all of us to ensure a mandate is done in an efficient way that achieves the intended objectives."

The proposed rule, if it follows recommendations from the Part 21 SMS ARC, will harmonize with the EASA and other regulatory authorities that follow ICAO Annex 19, ensuring any FAA-approved product is also acceptable to those regulatory authorities.

In the meantime, design and manufacturers needed an FAA-recognized SMS solution. National Aerospace Standard 9927, Safety Management Systems for Design and Manufacturing, is that solution. The standards in NAS 9927 closely follow Part 5 and are an acceptable method of demonstrating compliance with ICAO SMS requirement, should an organization voluntarily request evaluation of its program by the FAA.

"We are cognizant of a strategic need to help the FAA move to a system approach to design and type approval," said Desrosier, explaining how inefficient the "Mother may I?" method currently used for design and approval truly is. "General aviation design and manufacturing organizations believe SMS may be part of the solution." □



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Aircraft Operations, and other third-party audit standards require or encourage organizations to require SMS of their vendors. For example,

a repair station might adopt an SMS program because its customers are IAS-audited charter operators and those operators require their vendors to have SMS.

“Many aviation organizations are adopting SMS as an industry best practice,” Lawton said. “In some

cases, organizations implement SMS to meet an audit standard and obtain a certain accreditation.”

In the U.S., the FAA’s relatively new safety assurance system also drives certain certificated entities, including Part 135 and 145 certificate holders, toward many concepts of SMS. SAS is a risk-based approach to FAA oversight of certificate holders or new applicants, and it requires consideration of six safety attributes: responsibility, authority, policy, process, process measurement, and interfaces. Requiring certificate holders or applicants to address these six safety attributes implicitly drives the organizations toward SMS, without a formal mandate to implement SMS.

Further, as SMS gains in popularity in aviation organizations around the world, it has or will soon become the reasonable standard of care, meaning the degree of care an ordinary and reasonable person would normally exercise under similar circumstances. Standard of care has significant legal implications following an accident or in liability cases.

A global mandate for SMS is inevitable. If SMS is not yet required by your regulatory authority, you might see many benefits from voluntary implementation. Aside from the intended increased safety, you might find competitive advantages, earn accreditations, and – for U.S. operators – more easily comply with SAS. □

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*The AEA offers an easy-to-use online complimentary SMS program for member companies. The program is consistent with applicable ICAO SARPs, as well as guidance and requirements from the FAA, the European Aviation Safety Agency, Transport Canada, the Australian Civil Aviation Safety Authority, and other regulatory authorities.*