Air Transportation
Actions to Improve Employee Safety

By Mark A. Friend, Alan J. Stolzer and Michael O'Toole

IN BRIEF
•The air transportation industry's incidence rate for nonfatal occupational injuries and illnesses is nearly four times the national rate for all private industry.
•Federal Aviation Administration (FAA) now requires a safety management system (SMS) for scheduled airlines. Although it is an effective way to address safety and health problems, an SMS is not required for all segments of the industry, nor does it address the safety and health needs of employees.
•OSHA and FAA should work together to help ensure the safety and health needs of all air transportation employees.

In 2015, the incidence rate of nonfatal occupational injuries and illnesses involving days away from work for the air transportation industry was 3.6 per 100 full-time workers. This was significantly higher than the national rate for all private industry, which was 1.0. It also exceeded every other transportation sector (BLS, 2016).

In January 2015, Federal Aviation Administration (FAA, 2015a) distributed Advisory Circular (AC) 120-92B, Safety Management Systems for Aviation Service Providers. The circular required businesses that have considered applying for, have applied for, or hold a Part 121 certificate (scheduled airlines) (14 CFR Part 121, Operating Requirements: Domestic, Flag and Supplemental Operations) to implement a safety management system (SMS) based on the requirements in the AC. The circular states, "This AC may also be helpful if you hold a certificate other than Part 121 or are not certificated because the AC can be used to voluntarily develop and implement an SMS" (FAA, 2015a). The certificate holder was required to submit an implementation plan to the FAA administrator no later than Sept. 9, 2015, and that plan must have been approved no later than March 9, 2016 (FAA, 2015b). Air carriers have until March 9, 2018, to develop and implement the plan (FAA, 2015c). According to FAA (2015a):

SMS [are] becoming a standard throughout the aviation industry worldwide. . . . Similar management systems are used in the management of other critical areas such as quality, occupational safety and health, security, environment, etc. SMS for product/service providers (certificate holders) and regulators will integrate modern safety risk management and safety assurance concepts into repeatable, proactive systems. SMS emphasize safety management as a fundamental business process to be considered in the same manner as other aspects of business management. (FAA, 2015a)

In considering SMS rulemaking, FAA (2009) envisioned that aerospace product/service providers would integrate a systematic, risk-based and process-oriented approach to managing safety into their operations and governance, including changes to necessary organizational structures, accountabilities, policies and procedures. Such an approach stresses not only compliance with technical standards, but increases emphasis on those management systems that ensure risk management and safety assurance.

It would appear that the new rule effectively addresses those hazards, risks and mishaps that lead to nonfatal occupational injuries and illnesses involving days away from work. However, the rule is not focused on employee protection. Rather, it is aimed at aviation operational processes only. Although air carriers might extend their SMS to nonaviation-related activities, such as OSH issues, FAA does not require or enforce that.

FAA defines *hazard* as "a condition that could foreseeably cause or contribute to an aircraft ac-

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cident" (FAA, 2015a, p. 7). This definition "clearly limits the potential events to be considered to those directly related to aircraft operations and the potential severity of those events to aircraft accidents, which is consistent with the FAA statutory authority" (FAA, 2015b).

Since the AC does not specifically address inclusion of a comprehensive safety and health program to be implemented throughout establishments (physical location where business is conducted or where services or operations are performed) or across the aviation industry, it seems likely the injury and illness incidence rates among the industry's employees will not be substantially lowered.

Although the apparent goal of the new SMS standard was primarily to prevent aircraft damage, research was conducted to determine whether implementation of an SMS system, as now required by FAA for Part 121 air carriers, appropriately addresses safety and health needs of all employees. In addition, that research examined what, if any, changes should be made to ensure full application of a comprehensive safety and health program by all affected employers.

Methodology

With funding from a grant made by the University of South Florida (USF) and NIOSH, experts were identified through recommendations of qualified personnel at Embry-Riddle Aeronautical University (ERAU), peer institutions and the federal government. The experts included representatives of a professional safety certification board, several aviation-focused universities and professional associations.

These experts were then asked to recommend individuals with in-depth knowledge of SMS and OSH to participate on a six-member panel. The goal was to receive input regarding application of SMS to OSH problems that currently exist in the aviation industry. After compiling a list of potential candidates, six individual SMS experts were selected to form the panel. The panel members represented four different airlines, an aviation insurance carrier and an aviation consulting company.

Prior to the first of three online meetings, panel members were instructed to review current FAA documents pertaining to SMS. Members reviewed Chapter 1 of the new AC (FAA, 2015a), which clearly states the SMS is meant to be an integral part of the overall safety system within an organization:

> An SMS is not meant to be a separate system built alongside or on top of your other business systems. An SMS should be integrated into your existing business structure. A properly integrated SMS fosters a fundamental and sustainable change in how you view and analyze data and information, how you make informed decisions, and how you develop new operational and business methods. SMS are necessary to comply with part 5, but they are not substitutes for compliance with other federal regulations. However, SMS can assist service providers in meeting other regulatory requirements.

The first meeting introduced panelists to an FAA representative who provided insights on the agency's intended direction and further acquainted them with the AC by answering questions. Panel members were then directed to determine whether they agreed that implementation of the new requirements for SMS would be sufficient to significantly lower incidence rates among air carriers.

The New Rule

According to the FAA representative, unlike a traditional aviation safety program, an SMS defines management responsibilities as part of the overall SMS. The operational managers are front and center. Everything relative to safety emanates from the SMS and these managers. This includes identifying hazards, making decisions based on hazard identification and keeping the accountable executive informed.

Irrespective of other functions, the accountable executive has ultimate responsibility for the safety performance of the operations in terms of ensuring that the SMS is properly implemented and performing. This individual controls the financial and human resources required for the operations authorized. Technical tiers of dedicated safety professionals exist, but a business tier also exists that is ultimately in charge of operations; this is the accountable executive.

The certificate holder must decide how it wants to organize safety personnel, but safety personnel should always have access to the accountable executive. The question arises as to whether OSH issues should be included in SMS applications. Although these are not covered by the final rule, any areas of managers' responsibilities, including those dealing with OSH issues, can easily be encompassed. In fact, these other areas often interact with responsibilities under the new standard, but they are not required by the standard to be addressed.

Impact & Limitations of the New Rule

The panel members agreed that the new rule helps set the tone by forcing management buy-in. This adds sustainability and drive to the safety process and can be an effective method of managing the overall safety and health process within an organization. One panel member noted that the new rule is designed to help transport passengers safely and it does not necessarily apply to other aspects of the business. There may be a collateral effect of the new rule, but companies may choose not to go beyond the rule's limits.

When the rule was published in January 2015, SMS was only required for Part 121 air carriers. Because the air carriers interface with the other businesses, panelists generally believe that additional, similar operations should be held to similar safety standards. Panelists said this gap in the AC becomes especially evident during incident investigations. Collateral organizations such as baggage handlers, maintenance facilities and contractors are not required to abide by the standards, which results in problems. Panelists believe there should be at least minimum SMS standards for all aviation organizations under FAA authority. When air carriers follow FAA checklists, it seems only reasonable that all aviation entities should also be required to do so. According to the panel, this should be part of their certification requirements.

OSH requirements are not mentioned in the FAA rule. To refer to any formal SMS as a system, then

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not incorporate it into all functions of an organization seems contrary to the basic premise of a systems approach. Some panel members pointed out that this would occur on a wider basis if regulations were passed to ensure coverage of OSH requirements. The panelists added that although this is likely coming, the timetable could be time-intensive and should be accelerated. An advisory circular would be a good place to begin going down this path. If a mandate only applies to specific portions of the organization, a company may decide to simply follow the letter of the law and participate at a purely compliance level.

OSH & the New Rule

Panel members realized that asking FAA to incorporate a requirement that the rule be mandated across the entire organization is problematic, since FAA only has regulatory authority over the operational portions and can only mandate an SMS as it deals with aircraft. Even so, FAA could help the industry by supplying training materials regarding SMS and providing ongoing guidance through the publication of ACs.

An FAA-style SMS manual could serve as a comprehensive template for the whole organization. Demonstrating performance in the management of safety processes and outcomes can have direct carry-over to other parts of the business. Businesses must understand the importance of and the methodology for incorporating all aspects of their operations under SMS. This could be highlighted in an FAA advisory circular.

Panelists said that FAA also may want to coordinate its efforts more closely with OSHA to ensure that at least minimum requirements exist for critical aviation-related organizations. One panel member stated, "FAA bowed out when [it] defined *hazard* and moved away from employee safety. There is a need for FAA to sign a memorandum of understanding (MOU) with OSHA." The panel agreed that the two agencies must coordinate their efforts to ensure protection of all air transportation employees. This includes a clear delineation between the two in terms of areas of authority and responsibility, and a philosophical understanding. An MOU between the two organizations could be designed to facilitate coordination and cooperation between FAA and OSHA, similar to how the two groups recently addressed OSHA standards for airline cabin crewmembers (OSHA, 2014).

Conclusion

In conclusion, the panel offered the following recommendations:

1) The air transportation industry must lower its overall incidence rate and bring it closer to that experienced by general industry. An SMS provides a mechanism to achieve that goal.

2) The new SMS rule has all the necessary components of an effective SMS. FAA should gradually and systematically expand its SMS rule to include a broader array of aviation operations to cover more businesses within the air transportation industry, not just airlines and airports.

3) FAA could also serve as a catalyst to help establishments fully implement SMS throughout the organizations. This includes providing technical support through counseling and publication of related materials, such as ACs. It should be a resource for companies seeking to truly expand SMS to all areas of operation, including OSH.

4) FAA should consider working closely with OSHA to ensure that not only equipment but also employees and their safety and health are addressed by and included in SMS coverage. The panel believes that an MOU between the agencies will provide a fast-track to lower incidence rates, and certainly a closer working relationship on all matters related to OSH will help the workforce.

FAA is doing a commendable job by requiring a strong SMS within select segments of the aviation industry; however, there is still work to be done. The panel felt strongly that the safety and health needs of all employees in the aviation industry are important, and that broader application of SMS within the industry will likely reduce the incidence rate. For SMS to truly work effectively on behalf of employees in the air transportation industry, OSHA and FAA should work together in a coordinated effort to mitigate problems affecting employee safety and health.

Given the conclusions reached by participants in this study, FAA could take a more proactive stance regarding employee protection through SMS and would likely benefit from a stronger relationship with OSHA. **PS**

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