Ready, set, implement: A road map for SMS success

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Abstract

Airports across the country are waiting for the federal mandate requiring the implementation of a Safety Management System (SMS). This formal top-down business-like approach to managing safety risk is considered the next significant step in increasing aviation safety. With a system of this magnitude available right now, why not voluntarily implement SMS? After all, the successful implementation of a SMS is not centred on regulatory guidance. Rather, it stands on the Airport Executive's commitment, the SMS Manager's position, and the airport's safety culture. An early adopter's road map should include goals, objectives, policies, committees, hazard reporting, promotional processes and the definition of programme success.

Keywords

safety management system, accountable executive, confidential hazard reporting, promotion, implementation, safety culture, just culture

INTRODUCTION

'SMS is about helping companies find trouble before trouble finds them.'[1] Implementing a Safety Management System (SMS) at an airport means, at a minimum, changing processes, and, at a maximum, changing mindsets, organisational norms and company culture. This much change can be overwhelming, with management finding it hard to implement, and rank-and-file employees finding it hard to accept. However, this formalised approach to safety can assist airport executives and their managers 'to recognise the early warning signs of hazardous situations that might otherwise be overlooked. A properly implemented SMS will amplify the "weak signals", encouraging managers to take corrective action before an accident occurs.'[1] With all the change involved in implementing an SMS, do not wait for regulatory guidance instructing you to do so: the message is 'Start Now'.

This paper will discuss the following: (1) the roles of the Accountable Executive, the SMS Manager and consultants; (2) where SMS fits within your table of organisation; and (3) markers of a successful programme.

BACKGROUND

The Safety Management System (SMS) was born out of the work by the Federal Aviation Administration (FAA) to make US aviation safety regulations consistent with International Civil Aviation Organization (ICAO) standards and recommended practices, as well as the harmonisation of international

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standards.[2] 'Safety Management System (SMS) is the formal, top-down business approach to managing safety risk, which includes a systemic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures' (p. 21).[3] SMS is composed of the following four pillars or functional components: Safety Policy, Safety Risk Management, Safety Assurance and Safety Promotion.

- *Safety Policy*. Establishes senior management's commitment to continually improve safety; defines the methods, processes, and organisational structure needed to meet safety goals.
- *Safety Risk Management (SRM)*. Determines the need for, and adequacy of, new or revised risk controls based on the assessment of acceptable risk.
- *Safety Assurance (SA)*. Evaluates the continued effectiveness of implemented risk control strategies; supports the identification of new hazards.
- *Safety Promotion*. Includes training, communication and other actions to create a positive safety culture within all levels of the workforce.[4]

'In November 2005, the International Civil Aviation Organization amended Annex 14, Volume I (Aerodrome Design and Operations) to require member states to have certificated international airports establish an SMS.'[5] To comply, the FAA initiated the first Airport SMS Pilot Study in 2007, the second SMS Pilot Study in 2008, and the Part 139 SMS Implementation Study in 2009 and, in response, released the Notice of Proposed Rulemaking for a Safety Management System for Certificated Airports in October 2010.[6] As SMS-related legislative efforts began to stall, in 2013 the FAA Airports Division issued an SMS Statement encouraging 'all certificated airports to voluntarily develop an SMS.'[7]

All told, US airports have been talking about SMS for ten years. All this talk has led to an industry-wide weariness regarding SMS, best described as 'SMS fatigue'. This paper focuses on what you, as Airport Directors, Managers and Executives, can do to move past the fatigue and implement an SMS at your airport.

SMS @ STL

Lambert-St Louis International Airport (STL) is unique in the world of SMS. Even though we were not one of the FAA Pilot Study airports, we voluntarily launched a robust SMS programme. In 2010, the now retired Assistant Director of Operations & Maintenance, William Korte, seeing both the value and the regulatory future of SMS, became an SMS champion, securing the approval of Airport Director Rhonda Hamm-Niebruegge and her executive staff to implement SMS at STL.

To begin the initial implementation of SMS, STL issued a Request for Proposal (RFP) for the Development and Implementation of a Safety Management System (SMS) in 2011. In early 2012, the Airport selected Faith Group as the firm to develop and implement the SMS. In late 2012, the Airport created a new, full-time 'SMS Coordinator' staff position.

IMPLEMENTATION: WHY PUT OFF UNTIL TOMORROW WHAT YOU CAN DO TODAY?

'Safety experts worldwide view SMS as the next major step to increase safety in aviation.'[7] Even with this view, many airports have decided to wait until the FAA issues the final rule before implementing SMS. If SMS is the next major safety improvement, the question every executive should be asking is 'What am I waiting for?'

The very thought of implementing a programme that includes all aspects of all four pillars and touches all facets of your operation and your employees can be overwhelming. Implementation will not occur overnight; it should be viewed as a marathon, and the programme should be tailored to the size and complexity of your airport.

Ultimately, implementing SMS changes the definition of safety from 'the condition of being safer from undergoing or causing hurt, injury, or loss' (p. 1030)[8] to 'acceptable risks that enable an organisation to succeed in its mission' (p. 43).[9]

THE EXECUTIVE'S ROLE

First and foremost, the success or failure of an airport's SMS falls entirely on you: the Airport Executive. You set the priorities and the tone at your airport. SMS is not just another rubber-stamp safety initiative or another name for an airport's safety department. 'SMS is a system that is triggered from the top of the organization and measured at the bottom' (p. 43).[9] As the airport's leader, you need to view SMS as an investment in your organisation and believe in the programme's many benefits, which include (1) reducing the risk of accidents; (2) providing for more informed decision making, (3) providing for better resource allocation; and (4) strengthening corporate culture. Without management commitment and continuous executive-level support, the programme is doomed to fail.

With a firm commitment to SMS in place, the next step is to identify the 'Accountable Executive', the individual in the organisation who will have the ultimate responsibility and accountability for the implementation and maintenance of the SMS program.[10] In a perfect world, the Airport Director would be the programme's Accountable Executive. I acknowledge that this reporting structure may not be feasible at every airport; however, this direct reporting structure is highly reflective of the airport's commitment to safety.

Finally, it is important to prepare for and create an Accountable Executive transition plan. Any new Accountable Executive should know and understand his/her responsibilities and the benefits of the SMS programme. Again, the success or failure of the airport's SMS is based entirely on you: the Airport Executive.

THE SMS MANAGER'S ROLE

The next critical step to the success of your SMS programme is selecting a competent individual with the appropriate knowledge, skills and experience to manage the programme: in short, selecting the right person for the job is essential to the programme's success. As a dedicated, full-time SMS Coordinator, I am biased in that I think all 'larger' airports should have a dedicated SMS Manager or Coordinator, but this may not be feasible for all airports. In the event the decision is made to merge the responsibilities of SMS into an existing department supervisor's job duties, the SMS role runs the risk of becoming just another task, falling into the 'other duties as assigned' category, with its real benefits diluted. No matter what size airport or who is responsible for managing the SMS programme, it is essential that sufficient resources are allocated to manage the SMS programme: 'Withholding resources is the first indicator that management is not fully committed to the SMS program.'[10]

SMS Managers should be given appropriate status within the organisation, both in organisational charts and in practice, to reflect the importance of the safety role within the airport. In fact, where the SMS Manager is placed in the organisational chart and how the position is empowered

speaks volumes about the value placed on safety and the commitment to safety at your facility.[11]

If it is decided to place the SMS Manager under the Operations and Maintenance umbrella, a conflict of interest, or a perceived conflict of interest, may be created as this department typically oversees many of the functional areas cited in hazard reports. Conversely, if the SMS Manager is placed under the Finance and Administration umbrella, there is a risk that safety-related decisions are based solely on cost. Regardless of the reporting structure, it is essential to provide a direct reporting line between the Accountable Executive and the SMS Manager. In the event the Accountable Executive is not the Airport Director, it is essential that the SMS Manager is given permission to communicate directly with the Airport Director, especially as it relates to safety issues involving the executive staff or in a whistle-blower type situation.

It may be beneficial to reorganise and place the SMS Manager, the Risk Manager and the internal Safety Officer under the same 'Risk and Safety' umbrella. Many airports may not have the freedom to simply move employees or create a new department; however, it is to be encouraged to bring those groups with overlapping goals into the SMS conversation early and communicate with them often, as both groups gather and process valuable, safety-related information.

It may be easier to begin the SMS process with the support and assistance of a consulting firm. The new SMS Manager may appreciate the guidance an experienced SMS consultant can provide. If a consulting firm is used and it is the intent to hire a dedicated SMS Manager, it is recommended to hire the SMS Manager first, and then allow the SMS Manager to participate in the consulting firm selection process and all conversations and decisions that take place after the selection process. In the long term, this approach will maximise your consulting dollars and ensure any processes and procedures developed are sustainable.

There are plenty of papers that describe in great detail the qualities a good SMS Manager should possess. Based on my own experience, it takes a person with excellent communication skills, organisational skills, interpersonal skills, patience, objectivity, a thorough understanding of the organisation's operation and a willingness to dive into uncharted organisational waters.

Safety, as a concept and an ideal, can be found in or attributed to almost every activity that takes place at an airport. All airport executives want their airports to be safe. This perception of safety can become a slippery slope of sorts, with SMS Managers finding themselves responsible for everything and anything relating to safety at the airport. To prevent the SMS Manager from becoming the 'catch-all' employee, it is essential to have a well-defined job description in place. In addition, everyone must have a firm understanding of the SMS Manager's authority and responsibilities. The SMS Manager must be empowered to facilitate solutions.

A final word of caution — being an SMS Manager is not easy. So much of the present and future integrity and employee involvement in SMS rides on the shoulders of the SMS Manager.

THE GAP ANALYSIS

The next step is to perform a 'gap analysis' to determine which SMS elements already exist at the airport and which SMS elements need to be improved upon or implemented. The gap analysis should encompass the entire organisation and include a review of existing programmes, systems and activities.[12] During the gap analysis, it is

important to interview middle managers and supervisors, as they probably view and experience the operating environment differently, in some cases very differently, from the executive staff. Capture both perspectives. When it comes to the question of communication, no matter what the organisation, there is always room to improve upon an airport's internal and external communication.

THE IMPLEMENTATION PLAN

Implementing a well-crafted, successful and sustainable SMS programme at an airport can be overwhelming. Although there are only four pillars of SMS, designing and implementing components for each of the four pillars can become a daunting task for the SMS Manager. Using the results of the gap analysis, an implementation plan is prepared. The implementation plan serves as the airport's road map, describing how the SMS programme will be executed and how the existing gaps, discovered during the gap analysis, will be closed.[12] Developing a good implementation plan will provide a clear understanding of what the end result should look like and how to get there.

SAFETY POLICY

Safety policy, the first pillar of SMS, is the programme's foundation. It includes the development and publication of a Safety Policy Statement, 'a statement of the organisation's fundamental approach to achieving acceptable or tolerable safety.'[13] The Safety Policy Statement should be developed and approved by the airport's executive team and provided to all employees. It is important to ensure that the SMS Safety Policy Statement is consistent with any existing municipal or public safety policy statements already in place.

GOALS AND OBJECTIVES

The programme's goals and objectives should be developed and approved by the airport's executive team and should be realistic, achievable and measurable. Examples of goals include decreasing fuel spills, decreasing foreign object debris (FOD) and eliminating runway incursions. Achieving these goals depends on the availability of sufficient historical data to know what a decrease or reduction looks like and what it will entail to accomplish that goal.

THE EXECUTIVE SMS COMMITTEE AND STANDING SMS COMMITTEE

As part of the SMS development process, it may be necessary to establish an SMS Committee or Committees. Generally, members of these Committees support and assist the SMS Manager with investigations, mitigations and resolutions of safety issues. If the airport elects to establish a Committee, committee guidelines should be developed and committee member roles and responsibilities should be defined. The effectiveness of an SMS Committee and the involvement of its membership rests on the airport's management structure.

To illustrate, STL has two SMS Committees: a Standing Committee and an Executive Committee. The Standing Committee is made up of nine airport staffers from key departments: Risk Management, Fire, Airfield Maintenance, Police, Engineering, Operations, Employee Safety, Planning & Development and Finance & Accounting. The Executive Committee is made up the five executive staff members, including the Airport Director, Airport Deputy Directors (Accountable Executive) and Assistant Director of Operations & Maintenance. The SMS Coordinator chairs both Committees. This two-tiered committee system was created to allow employees to speak freely at the Standing Committee

level, while keeping the executive staff informed and involved at the Executive Committee level. The original role of the members of the Standing Committee was to support and assist the SMS Coordinator in the various safety risk management processes. The Standing Committee quickly evolved and members now serve in an advisory capacity only. You may want or need committee members to play a more active role.

SAFETY CULTURE AND JUST CULTURE

Before moving to the next critical component of SMS, it is important to review the topic of Safety Culture and Just Culture. 'Safety Culture is the way safety is perceived, valued and prioritized in an organization. It reflects the real commitment to safety at all levels in the organization. It has also been described as "how an organization behaves when no one is watching". Safety Culture is not something you get or buy; it is something an organization acquires as a product of the combined effects of organizational culture, professional culture and, often national culture. Its essence is in what people believe about the importance of safety, including what they think their peers, superiors and leaders really believe about safety as a priority. Safety Culture can have a direct impact on safe performance. If someone believes that safety is not really important, even temporarily, then workarounds, cutting corners, or making unsafe decisions or judgments will be the result, especially when there is a small perceived risk rather than an obvious danger. Organizations need both a SMS and a healthy Safety Culture in order to achieve acceptable safety performance.'[14]

Taking it one step further, airports also need a Just Culture, 'an atmosphere of trust in which people are encouraged, even rewarded, for providing essential safety-related information — but in which they are also clear about where the line must be drawn between acceptable and unacceptable behavior. A Just Culture supports learning from unsafe acts in order to improve the level of safety awareness through the improved recognition of safety situations and helps to develop conscious articulation and sharing of safety information. Under "Just Culture" conditions, individuals are not blamed for "honest errors", but are held accountable for willful violations and gross negligence. People are less willing to inform the organization about their own errors and other safety problems or hazards if they are afraid of being punished or prosecuted. Such lack of trust of employees prevents the management from being properly informed of the actual risks. Managers are then unable to make the right decisions in order to improve safety. However, a totally "no-blame" culture is neither feasible nor desirable. Most people desire some level of accountability when a mishap occurs.'[15]

When developing a Just Culture, ensure a Just Culture policy is documented and communicated throughout the organisation, define what is 'acceptable' behaviour and what is 'not acceptable' behaviour, develop consequences for unacceptable behaviour, create a process to deal with actions that may fall into 'grey areas', and make certain fair treatment is being perceived and applied.[15]

CONFIDENTIAL HAZARD REPORTING SYSTEM

The next major step in the development of the SMS is the creation of a safety reporting form or confidential hazard reporting system. The number of users of a confidential hazard reporting system is tied directly to the employees' perception of

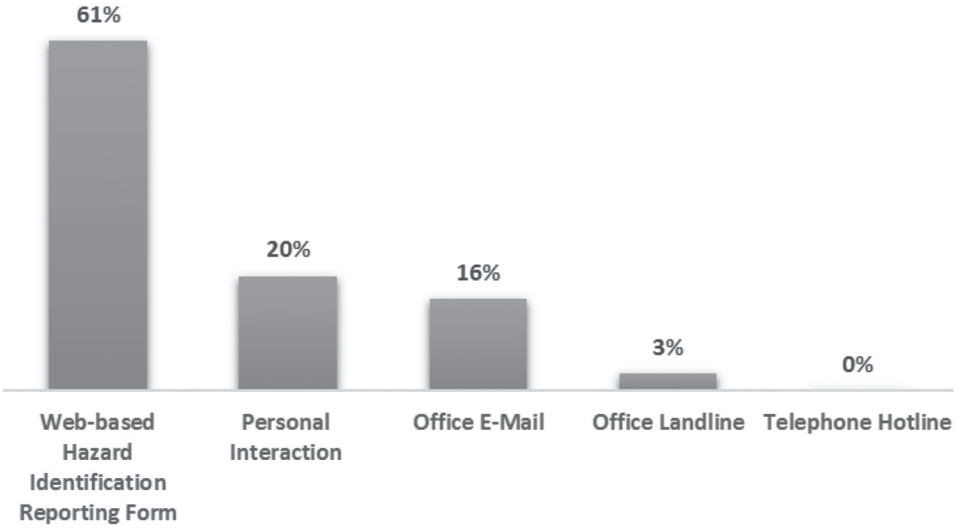

Figure 1 Reporting methods

the airport's 'Safety Culture'. Conversely, the manner in which the confidential hazard reporting system is structured is tied directly to the ability to foster a 'Just Culture' at the airport.

A key component of a confidential hazard reporting system is the ability for employees — the eyes and ears of an airport, who have the privilege of working in places and seeing 'things' many other employees and managers do not — to report hazards or near misses anonymously. An anonymous reporting option reduces the overall fear of reporting a hazard, which is critical to the sustainability of the system.

In March 2013, STL launched its 'SMS Hazard Identification Reporting Form'. Developed by STL's talented in-house IT team, this encrypted, secured, password-free website offers any employee with an airport-issued ID badge the opportunity to report hazards and near misses either anonymously or with identifying information. Interestingly enough, 80 per cent of users have chosen to identify themselves. Recognising that not all employees have access to the internet, a telephone hotline was established. Equally interesting is that the telephone hotline has not received one single telephone call since its inception. It should be noted that I also receive reports through personal interactions, office e-mail and the office landline (Figure 1). Although this is not the preferred method of reporting safety concerns, I will not turn any report or individual away. I consider every individual as a safety resource and view every report as having value.

As all reports received should be responded to in a timely manner, establishing a hazard 'triage' protocol will help to systematically prioritise and process these reports. It should also be noted that hazard reports are not and should not be emergencies.

The success of a hazard reporting system depends on employee trust. Employees need to feel that the system is focusing on the reported hazard, not the individual who reported it. Employees need to feel their reports are valued and are being acted upon, and they need to see that their reports are not being used as a discipline tool. Developing a communication strategy, which includes developing standardised

verbiage and formats, will foster employee trust and keep users of the system informed.

STL established a hazard reporting communication policy that includes sending status statements that update the individual on the report's progress, at 30-day intervals until the report is closed. Upon close-out, a final close-out report is provided to the individual who submitted the hazard report. This 30-day follow-up cycle is time-consuming, especially when multiple reports are in progress. In spite of this, I have found this communication policy to be an excellent way to reach out to employees and let them know that we value their concerns.

The confidential hazard reporting system is not a game of metrics. If you, as the executive, are only concerned with the number of reports received, the number of reports closed and the number of days it took your SMS Manager to close out a report, then you are missing out on all the benefits SMS has to offer an airport. This metric-driven approach could also lead to the creation of hazards where they did not exist before. It is important that the SMS Manager is given plenty of latitude when responding to these reports. The SMS Manager should be allowed to view the concern from the entire organisation's point of view, critically thinking about how a change will affect the entire airport and all its employees. This is especially true when making changes to an item or activity that has been in place for a number of years.

The airport is not static. Neither is its organisational culture static. To ensure long-term success, it is necessary to constantly educate employees, especially key SMS players (middle managers and rank-and-file staff), on the availability and benefits of the confidential hazard reporting system.

SAFETY PROMOTION

'Safety promotion sets the tone that predisposes both individual and organizational behaviour and fills in the blank spaces in the organization's policies, procedures and processes, providing a sense of purpose to safety efforts.'[16] Safety Promotion facilitates the continuous improvement process by supporting safety culture communication and the dissemination of lessons learned. In fact, 'Communication is the foundation of the safety promotion aspect of an effective SMS.'[17]

Airport executives, together with their SMS Managers, should develop a formal safety communications strategy that assures transparency and knowledge sharing. The objective of this safety communications strategy is to ensure that all employees are aware of the SMS, where to locate safety-critical information, why particular actions are taken, why safety procedures are introduced or changed, lessons learned and 'nice-to-know' information. Safety promotion opportunities are endless — from websites, newsletters, e-mails and bulletin boards, to meetings, workshops, and events. The list could go on.

From my perspective, Safety Promotion is the fun and creative side of SMS. The first promotional step at STL was to give the SMS its own identity by creating an STL SMS logo (Figure 2), followed by the two key components of our promotional strategy: the dashboard and newsletter. The dashboard, released to airport executives both quarterly and annually, consolidates confidential hazard reporting system information into a single, easy-to-read format that communicates the system's performance.

The newsletter, aptly titled *Safety Net* and released to executives and employees across the airport both quarterly and annually, highlights the confidential hazard reporting system's performance and information relating to anonymously reported

Figure 2 SMS logo

hazards, together with proactive repairs, safety reminders, tips and initiatives. Newsletters have fallen out of fashion in recent years in favour of electronic communications, but I have found the newsletter to be an important communication tool to both inform and motivate employee groups that have limited access to technology. Also included in our promotion strategy is an awareness of SMS during new employee onboarding sessions, 'welcome' e-mails sent directly to new airline, tenant and partner managers, SMS slides in the airfield and ramp driver training presentations, a dedicated SMS page on the airport's internal website, an SMS bulletin board in a high traffic area, and an SMS awards programme.

Keeping the Accountable Executive informed is a key component to Safety Promotion. The type of communication must be based on how you, the executive, want to digest the information. Whether that communication comes in the form of e-mail updates or data-driven dashboards, the SMS Manager must make every attempt to keep you informed.

COST BENEFIT?

Formulating a strong business case for an SMS can be difficult. Historically, the costs associated with accidents, incidents, safety interventions and the cost savings associated with these interventions have not been accurately tracked by the aviation industry (p. 14).[18] As SMS is considered a business-like approach to managing safety risk, however, it should be 'managed and reviewed like any other business process and should utilise the same financial principles to monitor its performance. These financial processes should allow for tracking of SMS operational costs, cost savings and cost avoidance. Reviewing the data can provide valuable insights into how efficiently the system is operating and help identify SMS inefficiencies, opportunities for improvement, and enable better resource management (p. 14).'[18]

Calculating the true value of an SMS to an airport is a complex undertaking. One must identify 'not only the costs associated with the SMS, but also the costs associated with an incident or accident that most probably would have occurred if no appropriate SMS programme were in place (p. 9).'[18] Adding to the complexity, not all mitigations will produce the desired return on investment in the first year. A number of mitigations will take longer to come to fruition and 'may rely on multiple factors outside the control of the SMS Manager (p. 3).'[18] Another tracking difficulty is that an SMS-related investment in one area of the airport may produce benefits that flow across the entire organisation. Finally, the intangible benefits generated by the SMS, including worker motivation, airport image and reputation, and passenger and user satisfaction may be greater than the tangible benefits, but they are very difficult to quantify.

It is simply unreasonable to expect a quality programme to operate for zero dollars.

At STL, there was and continues to be a cost associated with the SMS programme: the cost to develop the programme, the cost to promote the programme and the cost to sustain the programme. In the beginning, consulting firm fees and, of course, my salary and benefits made up the majority of costs associated with SMS development. Now, responding to hazard reports and developing and implementing risk mitigations make up the majority of costs associated with promoting and sustaining the programme.

STL released the confidential hazard reporting system on 1st March, 2013. The first report was filed through the system on 15th March, 2013. To show the organisation that this new programme was effective and fully supported by management, the Director set aside cost/benefit metrics and allocated the funds needed to address the report, changing the organisation's 'perception of safety programmes from "costs" to "investments" (p. 3).'[18]

A detailed cost-tracking structure that added separate SMS budget lines to each individual department's budget was included in STL's original implementation plan. This budgeting and tracking structure, while very detailed and potentially data-rich, was found to be very difficult to implement and deemed impractical. I recommend developing a simply cost tracking structure that will identify what costs are incurred as part of the SMS effort.

The SMS should be seen as an investment in an airport's health and safety. SMS-related safety interventions can provide a significant financial benefit to the airport. 'It is based on the simple premise that it is a better use of airport dollars to invest in SMS programs that will prevent accidents than to forego SMS and absorb the financial impact of accidents that could have been avoided' (p. 5).[18]

IS IT WORKING?

I am often asked the question: 'How do you know what SMS success looks like?'. For those metric-driven executives, numbers do communicate a small portion of the success story. As of 31st December, 2015, STL airport, airline and tenant employees have participated in three Foreign Object Debris (FOD) walks, read nine SMS newsletters and utilised the confidential hazard reporting system 200 times. Since the programme's inception, I have witnessed its success slowly permeate throughout the airport. I can tell you definitively, however, that the programme's true measure of success is not found in the numbers, it is realised through the actions of the employees throughout the organisation: managers, including the Airport Director, participating in safety meetings; an increased number of employees wearing safety vests; employees stopping me in the hallway or dropping by my office to discuss safety concerns; being invited to airline safety meetings and training sessions; and individuals requesting to be added to the newsletter distribution list. The most telling measure of success to date was observing the SMS newsletter tacked to a bulletin board in a maintenance department's lunch room. The employees themselves pinned the newsletter to the board, not their supervisor or department manager. Although this action may be deemed as minor, it is a significant success indicator: The employees see value in the programme and have voluntarily adopted SMS. That is what SMS success looks like at STL — engaged airport employees and partners.

SUMMARY

An SMS is a business-like approach to managing safety risks. The 'management of safety risk is a core activity'[19] in the airport industry. Airport executives should embrace

and implement SMS, ensure actions reflect words, create a positive safety culture and provide appropriate resources. 'The SMS is not a manual, a database or a reporting process; these are all tools'[19] used by the SMS Manager. Rather, it shapes critical management thinking regarding operational processes and activities. 'The SMS lives in the DNA of your airport.'[19]

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