2025:
Future Visions, Requirements, and Implementation of Safety Management Systems (SMS) at U.S. Airports

Stacie L. Fain, Embry-Riddle Aeronautical University (ERAU), Daytona Beach, FL, USA

ABSTRACT

Several governmental entities: the Secretary of Transportation; the Departments of Defense, Homeland Security, and Commerce; the Federal Aviation Administration (FAA); National Aeronautics and Space Administration (NASA); and industry, aligned their resources to develop the Next Generation Air Transportation System (NextGen), a new approach to safety at airports in the United States (U.S.). NextGen places the responsibility for safety within airport management and changing the FAA's role from testing, inspecting, and certifying to approval and periodic audits of the Safety Management Systems (SMS) programs at U.S. airports. The purpose of the research was to determine, through a comprehensive literature review and evaluation, whether SMS will be used as the framework for U.S. airports to move safely into the year 2025. The researcher concluded that the vision for SMS implementation was well defined and the requirements fairly clear, but guidance and support for SMS implementation at U.S. airports are lacking.

Keywords: Federal Aviation Administration (FAA), Next Generation Air Transportation System (NextGen), Safety, Safety Management Systems (SMS), United States (U.S.) Airports

INTRODUCTION

In the past, improvements in the national airport system were attributed to advances in technology, but today the busiest airports are barely keeping up with demand. The Federal Aviation Administration (FAA) predicts that by 2020 more airports will be experiencing problems supporting the demand for air travel. The FAA believes a "failure to address the impact of air travel congestion on the mobility of Americans could cost consumers up to $20 billion a year by 2025" (Joint Planning and Development Office, 2004, p.3). Several governmental entities aligned their resources to develop the Next Generation Air Transportation System (NextGen). The Secretary of Transportation; the Departments of Defense, Homeland Security, and Commerce; the Federal Aviation Administration (FAA); National Aeronautics and Space Administration (NASA); and industry are all working together to develop a new system that

will allow for different modes of air transportation and will be able to handle three times the current capacity of air traffic (JDPO, 2004).

NextGen will require a new approach to safety at airports in the United States (U.S.). According to the Joint Planning Development Office (2004), the vision is that the "air transportation system in 2025 will remain the world's safest form of transportation" (p. 11), but in order to accomplish this, the new approach to safety places the responsibility for safety within airport management and changes the FAA's role from testing, inspecting, and certifying, to approval and periodic audits of the Safety Management Systems (SMS) programs at U.S. airports (JPDO, 2004).

SMS is a process that incorporates systematic procedures, practices and policies to improve safety. SMS is not designed to replace existing safety procedures but to integrate safety processes among airport tenants and departments instead of allowing for stove-piped safety programs. The system is comprised of four pillars: Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion. Together, these components are intended to provide a systematic approach to identifying, evaluating, and mitigating risk (FAA, 2012). The ultimate benefit of SMS is that instead of approaching aviation safety in a reactionary fashion, it predicts where an accident or incident is likely to occur.

The International Civil Aviation Organization (ICAO) first mandated the implementation of SMS in 2001 for certain air traffic providers and later "specified that member states should mandate SMS implementation for airports, air carriers, and others by 2009" (Government Accounting Office, 2012, p. 5). As the United States is a prominent member of ICAO, the FAA has been working for a number of years to adopt SMS. The FAA began a phased approach for SMS implementation in 2005, but did not meet the 2009 goal (GAO, 2012).

Some progress is being made in SMS implementation at U.S. airports, and that can be seen through the release of several documents by the FAA. *Advisory Circular (AC) 150/5200-*

37 was released in February 2007 and provided an overview of SMS for airports (FAA, 2007). The FAA released a *Notice of Proposed Rulemaking* for all airports certified under Title 14 Code of Federal Regulations (Part 139) in October 2010 (FAA, 2010). In June 2012, *DRAFT AC 150/5200-37A* provided details on the SMS implementation process (FAA, 2012). Although some airport managers are using the information that has been provided to begin SMS implementation, most are waiting for the FAA regulation to be mandated. The final rule for airports is likely to be released in early 2014.

LITERATURE REVIEW

The Secretary of Transportation, JPDO, FAA, and supporting organizations are clear about the vision for safety at airports and SMS implementation in the years leading up to 2025. The NextGen Air Transportation System Integrated Plan (NGATS) states "the air transportation system in 2025 will remain the world's safest form of transportation" (JPDO, 2004, p. 11). This vision will be accomplished by having safety risk management and design assurance responsibility reside with the airport management office; all safety requirements will be embedded at the core of all procedures, products, policies, or technologies associated with the airport. The FAA will still have regulatory authority for safety assurance to the public, which will be outlined in a comprehensive air and space safety management doctrine that will establish the standards and procedures for government and industry SMS programs.

The JPDO explains that the new standards for SMS require implementing a data analysis capability to identify and resolve precursors to an accident. "This new capability will transform today's incompatible databases scattered throughout government and industry into a proactive safety analysis tool. Procedures and mechanisms will be in place to move safety management from a reactive mode to data-driven, proactive mode that continuously searches for accident precursors. Data collecting and sharing

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