



*“Enhancing Aerodrome Safety through Partnership, Collaboration and Today’s Technology”.*

# Strategies for SMS Implementation



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# Overview Agenda

- ▶ SMS Defined
- ▶ Getting Started
- ▶ Personnel
- ▶ Technology
- ▶ Useful References

# ICAO Safety Definition

## ▶ ICAO Doc. 9859, Sec. 2.2.4

Safety is the state in which the **POSSIBILITY** of harm to persons or property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and risk management.

# What is a Safety Management System (SMS)?

▶ AC No.: 150/5200-37A

ICAO defines SMS as a “systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies, and procedures.

# 4-Components

## Safety Policy

Policy Statement  
Procedures  
Documentation & Processes

## Safety Risk Management

Mitigation  
Assessment  
Hazard Identification & Tracking

## Safety Assurance

Continuous Improvement  
Reporting System  
Data Management

## Safety Promotion

Culture  
Training & Education  
Communication

# SMS

# Getting started with your Airport SMS

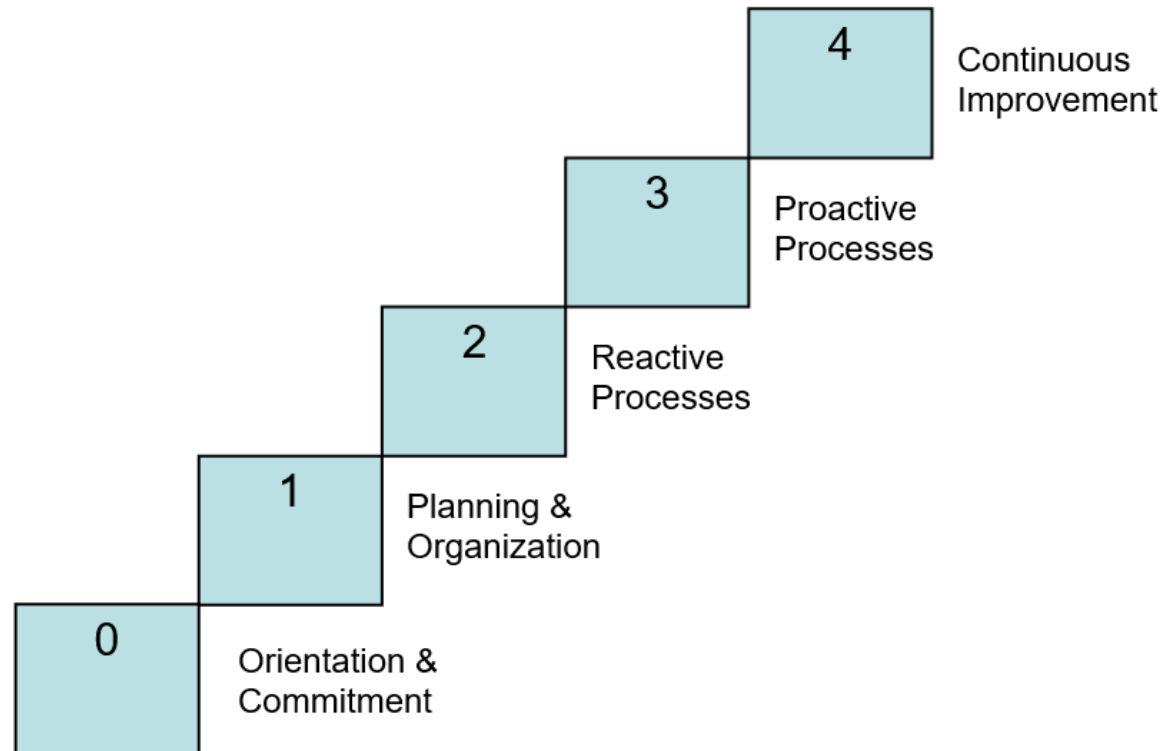
- What existing programs do you plan to use as the foundation for SMS?
- Gap Analysis
- Procurement
- Phasing
- Timeline

Where you want to be



Where we are today

# SMS Implementation - Phases



**Figure 1. SMS Implementation Levels**



# SMS Implementation - Phases

## Commitment

- Workshops
- Education / Training

# SMS Implementation - Phases

## Planning & Organization

- Accountable Executive
- Assign Safety Responsibility
- Appointment of Key Safety Personnel
- Develop your Safety Policy and Objectives



# SMS Implementation - Phases

## Reactive Processes

- Develop basic safety information management
  - Data
  - Analysis
- Implement safety risk management (SRM) for reactive processes
  - Hazard identification
  - Risk assessment, mitigation

# SMS Implementation - Phases

## Proactive Processes

- Implement safety risk management (SRM) for proactive processes
  - Hazard identification
  - Risk assessment, mitigation
- Develop related documentation and perform training
- Develop procedures for safety assurance

# SMS Implementation - Phases

## Continuous Improvements Operational Safety Assurance

- Implement safety assurance program
  - Performance monitoring and measurement
  - Continuous improvement
- Develop acceptable levels of safety, indicators and targets
- Develop related documentation and perform training

# Comparison of Part 139 and SMS . . . examples

Part 139	Sample SMS
301 - Records	<ol style="list-style-type: none"><li>1. Enhance current record keeping by developing documented procedures.</li><li>2. Use existing software to record and track training records for personnel.</li></ol>
303 - Personnel	<ol style="list-style-type: none"><li>1. Use current training programs and integrate SMS requirements.</li><li>2. Assign dedicated person (or outsource) record tracking &amp; retention to limit public disclosure.</li></ol>

# Comparison of Part 139 and SMS . . . examples

Part 139	Sample SMS
305 - Paved Areas	<ol style="list-style-type: none"><li>1. Enhance existing inspection program.</li><li>2. Incorporate SRM processes/procedures to maintain proactively.</li><li>3. Develop preventative maintenance program.</li></ol>
307 - Unpaved Areas	
309 - Safety Areas	
311 - Markings, Signs & Lighting	

# Comparison of Part 139 and SMS . . . examples

Part 139	Sample SMS
317 - ARFF Equipment & Agents	<ol style="list-style-type: none"><li>1. Enhance current record keeping by developing documented procedures.</li><li>2. Develop preventative maintenance program.</li></ol>
319 - ARFF Operational Requirements	
321 - Handling & storing of hazardous substances & materials	<ol style="list-style-type: none"><li>1. Review existing hazardous materials &amp; dangerous goods programs and include SMS requirements.</li></ol>



# Comparison of Part 139 and SMS . . . examples

Part 139	Sample SMS
323 - Traffic & Wind direction indicators	<ol style="list-style-type: none"><li>1. Document procedures and incorporate SMS requirements.</li></ol>
325 - Airport Emergency Plan	<ol style="list-style-type: none"><li>1. Incorporate SMS requirements.</li><li>2. Develop / procure document and management system to be further enhanced and managed.</li></ol>
327 - Self Inspection program	<ol style="list-style-type: none"><li>1. Enhance current program, incorporate SMS requirements.</li></ol>
329 - Pedestrians & ground vehicles	<ol style="list-style-type: none"><li>1. Enhance current record keeping by developing documented procedures.</li><li>2. Incorporate SMS requirements in program</li></ol>

# Comparison of Part 139 and SMS . . . examples

Part 139	Sample SMS
331 - Obstructions	<ol style="list-style-type: none"><li>1. Establish process for periodic review of regulations.</li><li>2. Use existing or new document management system that refers to all airport policies and procedures such as SMS Manual, ACM, SOPs and other interrelated and cross-referenced documents.</li><li>3. SMS focus group or committee to enhance current programs, procedures.</li></ol>
333 - Protection of NAVAIDs	
337 - Wildlife Hazard Management	
339 Airport Condition Reporting	
341 - Identifying marking & lighting construction & other unserviceable areas	
343 - Non-complying conditions	

# SMS Implementation - Personnel

Employee Participation is Key to Successful Implementation!

“...employees are the key resource to the success of the SMS. All airport employees are encouraged to report any accidents, incidents and hazardous conditions and behaviors as soon as possible.”

# SMS Implementation - Personnel

## Training Overview

- SMS basics and their roles
- Safety investigations
- How and when to use new confidential reporting tools
- Hazard identification and reporting
- Ongoing training during seasonal or operational changes
- Findings from safety audits requiring changes

# SMS Implementation - Personnel

## Reporting System Overview

It has been estimated that for each major accident, there are up to 360 incidents that, if reported and investigated, might have identified underlying problems in time to prevent the accident.

# SMS Implementation - Technology

- Reporting System
- Convert and document inspections and maintenance records in an electronic format
- Design forms that generate real-time insights



# SMS Implementation - Summary

- ✓ Identify accountable executive and key safety personnel
- ✓ Conduct gap analysis
- ✓ Develop project plan
- ✓ Safety policy and objectives have been signed off and communicated to all staff
- ✓ Implement safety risk management for reactive processes
  - ✓ Hazard identification, investigation, analysis, training
- ✓ Implement safety risk management for proactive processes
  - ✓ Hazard identification, investigation, analysis, training
- ✓ Training for personnel
- ✓ Documented policies and procedures
- ✓ Implement safety assurance program
  - ✓ Develop acceptable levels of risk, indicators and targets
  - ✓ Review mitigations and procedures to ensure they are working correctly



# FAA and ICAO References

FAA AC 150/5200-37A, Safety Management Systems for Airports (Draft)

FAA Order 5200.11, Safety Management Systems 14 CFR Part 139 Airports

FAA AC 150/5370-2F, Operational Safety on Airports During Construction

FAA PGL 13-06, Program Guidance Letter for SMS

ICAO Safety Management Manual (SMM) Doc 9859, Third ed.

ICAO Annex 19, Safety Management

Skybrary.aero - Aviation Safety web reference