



Federal Aviation
Administration

FAA Airports (ARP) Safety Management System (SMS)

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Conference*

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Safety and Standards

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OUTLINE OF DISCUSSION

- **4 ELEMENTS (PILLARS) OF SMS**
- **SMS DOCUMENTS OF REFERENCE**
- **CURRENT STATUS SMS POLICY**
- **5 PHASE (STEPS) OF SRM**
- **TRIGGERS FOR SMS/SRM**
- **WHEN A PANEL IS NEEDED AND PANEL MEMBERS**
- **SIGNATURES REQUIRED ON COMPLETED DOCUMENT**



Safety Management System (SMS) Definition by ICAO

Systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies, and procedures.



SMS COMPONENTS

- **Safety Policy**

- Commitment to continually improve safety
- Defines methods, processes and organizational structure

- ✓ **Safety Risk Management**

- Formalized approach to safety
- Ensures sound safety-related decisions
- Hazards identified, risks assessed and controls implemented

- **Safety Assurance**

- Evaluates safety performance

- **Safety Promotion**

- Promotes safety culture



Feedback

The Four SMS Components

Safety Policy

Establishes senior management's commitment to continually improve safety; defines the methods, processes, and organizational structure needed to meet safety goals

Safety Assurance

Evaluates the continued effectiveness of implemented risk control strategies; supports the identification of new hazards

Safety Risk Management

Determines the need for, and adequacy of, new or revised risk controls based on the assessment of acceptable risk

Safety Promotion

Includes training, communication, and other actions to create a positive safety culture within all levels of the workforce



Safety Risk Management (SRM) is the HEART of SMS



CURRENT STATUS OF ARP SMS POLICY

- **FAA Airports (ARP) SMS (Internal)**
 - Effective for Large Hub Airports only as of June 1, 2011
- **Part 139 SMS (External)**
 - Comment period closed July 5, 2011
 - 16 month period to review public comments
- **This discussion will focus on ARP SMS**



ARP SMS DOCUMENTS OF REFERENCE

- **FAA Order 8000.369, *Safety Management System Guidance (Parent Order)***
 - Driving force behind internal and external policies
 - Helps to harmonize with ICAO standards
- **FAA Order 5200.11, *FAA Airports (ARP) Safety Management System***
 - Discusses SMS policy integration requirements for ARP
 - Discusses roles and responsibilities for ARP offices and other lines of businesses
 - Discusses triggers for Safety Risk Management (SRM) and contains Safety Assessment Screening (SAS) forms for SRM.
- **FAA ARP SMS Implementation Guidance**
 - Supplement to Order 5200.11
 - Provides more detailed guidance for compliance on the SRM component of SMS.



Project Proposal Summary (Used to Coordinate Construction Project)

- Clear, concise description of the airport and proposed change. Used by stakeholders or panel to understand safety and operational factors
- Prepared by Airport or Consultant
- Shows construction layout, phases, and times
- Shows runway and taxiway closures, aircraft and vehicle routing for each phase
- Identifies impacts to NAVAIDS







FIVE PHASES OF SRM

- **Phase 1.** Describe the system
- **Phase 2.** Identify the hazards
- **Phase 3.** Determine the risk
- **Phase 4.** Assess and analyze the risk
- **Phase 5.** Treat the risk (i.e., mitigate, monitor and track)



SAFETY RISK MANAGEMENT

INITIAL AND RESIDUAL RISK

Predictive Risk Matrix

Severity \ Likelihood	No Safety Effect	Minor	Major	Hazardous	Catastrophic
Frequent	Low Risk	Medium Risk	High Risk	High Risk	High Risk
Probable	Low Risk	Medium Risk	High Risk	High Risk	High Risk
Remote	Low Risk	Low Risk	Medium Risk	High Risk	High Risk
Extremely Remote	Low Risk	Low Risk	Low Risk	Medium Risk	High Risk
Extremely Improbable	Low Risk	Low Risk	Low Risk	Low Risk	Medium Risk

High Risk
Medium Risk
Low Risk

TRIGGERS FOR SRM

- Development and updates to standards in the Advisory Circulars
 - Planning
 - Environmental
 - Engineering
 - Construction
 - Operational
 - Maintenance
- New or revised Airport Layout Plans (ALPs)
- Review and approval of construction coordination (i.e. construction safety and phasing plans)
- Approval of Part 150 Noise Compatibility measures affecting aviation safety
- Approval of requests for Modifications to Standards



SAFETY ASSESSMENT SCREENING (SAS)

- The SAS form (5200.11, Appendix D) is the primary tool used for conducting SRM
 - **SAS-1: Applies to ALPs, CSPPs, Part 150 Noise Issues and Non-Construction modifications**
 - **SAS-2: Applies to Modifications to Standards**
 - **SAS-3: Applies to Advisory Circulars**



Conducting SRM does NOT necessarily mean having a panel



WHEN A PANEL IS REQUIRED

- If any item is checked in the Safety Impact Checklist (contained in the SAS):
 - Deviation from standards
 - Increase in aviation safety risk
 - Safety impact on aviation operations
 - Impacts on navigational aids (NAVAIDs)
 - Impacts to Terminal Approach Procedures (TERPS)
- If OE/AAA review indicates an objection

SAFETY ASSESSMENTS: THE PANEL

- FAA Project Manager
- SRM Panel Facilitator
- Design/Planning Consultant
- Airport Sponsor
- LOBs and Stakeholders

(ATCT, Approach Control, FP,FS, Tech Ops, ATO Safety, Pilots, Tenants, Cert Inspector)



SAFETY ASSESSMENTS: FAA PROJECT MANAGER

- **Roles and Responsibilities**
 - Subject matter expert on SRM panel
 - Oversight & guidance for Safety Assessment process
 - Monitoring SRM panel (not the facilitator)
 - Designates/selects SRM panel members
 - Acceptance of final Safety Assessment documentation for FAA management review and signature



SAFETY ASSESSMENTS: SRM PANEL FACILITATOR

- Neutral with no bias towards the panel's conclusions
- Acquired by the airport sponsor
- Solicits expert advice and build consensus
- Coordinates with the Project Manager
- Final decisions and conclusions of the panel are the responsibility of the Project Manager.



SAFETY ASSESSMENTS: MORE PLAYERS

- **Design/Planning Consultant**
 - Supports the facilitator, project manager and airport for the safety assessment process
 - Develops Project Proposal Summary
- **Airport Sponsor**
 - SRM Panel member, subject matter expert
- **FAA LOBs**
 - SRM Panel members
 - Represent and make decisions for their organization



SAFETY ASSESSMENTS: SIGNATURES

- **SRM Panel Member Certification**
 - Fully considered hazards and mitigation
 - Dissenting opinions are included in the final report
- **Airport Sponsor**
 - Acknowledges hazards
 - Responsible for mitigations identified
- **FAA Approval**
 - Low initial Risk-- ADO/Region manager
 - Medium Initial risk– Regional Division Manager
 - High Initial Risk– Safety Review Board/ARP-1



IF YOU EVER PARTICIPATE IN A PANEL...

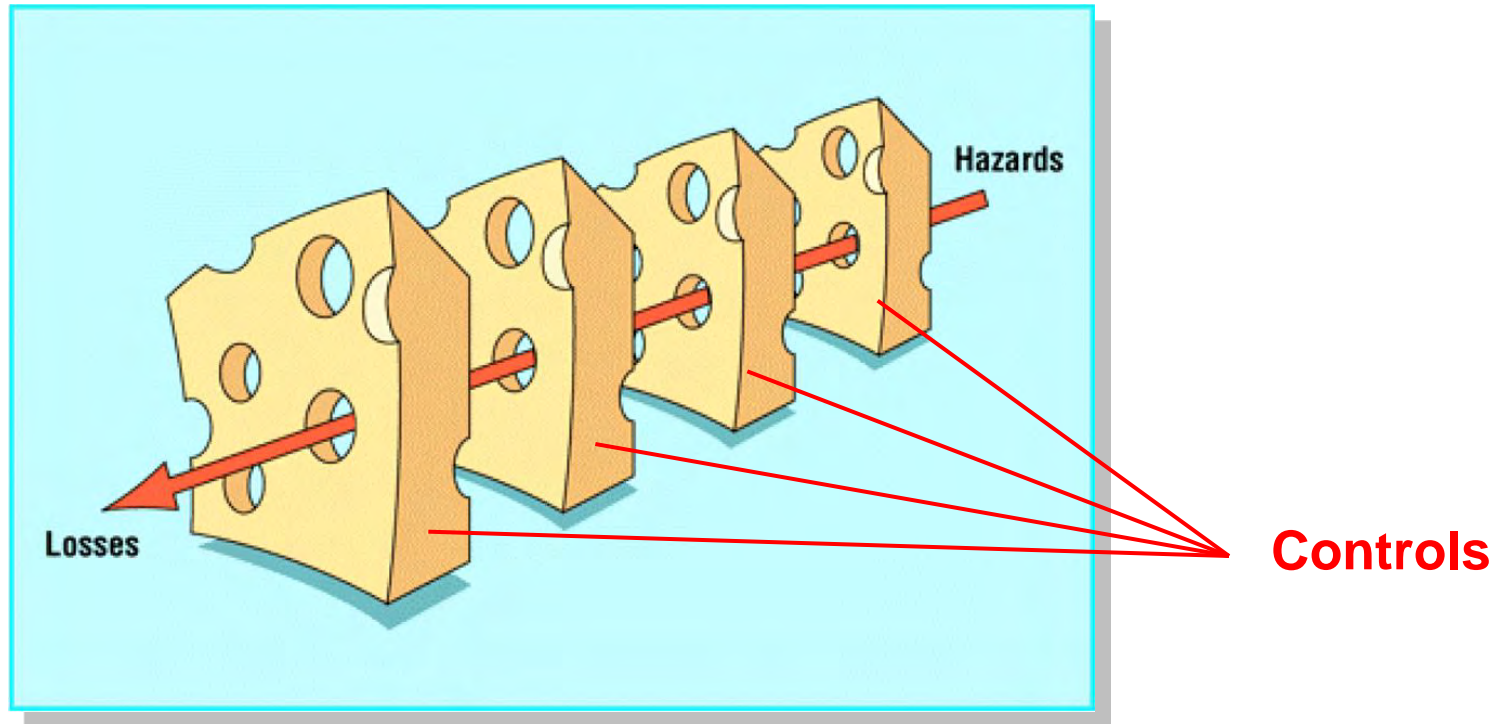
- Remember that...
 - **RISK** is the combination of the predicted **Severity** and **Likelihood** for the possible effect of a Hazard in a specified **System State**
 - Risk should be analyzed using **Existing Controls**, and provide rationale to support severity and likelihood assessments.
 - There are many possibilities of what can happen, but only a few are “**credible**”.

Transition – SRM Implementation Phase-In

Airport Type	SRM becomes applicable:
Large , Medium, and Small Hub Airports*	June 1, 2011 Revised to Large Hub Airports Only
Remaining airports certificated under 14 CFR Part 139	* Per FAA Order 5200.12, Change 1, phase-in of other airports will depend on resources
Remaining FAA and contract tower airports	*
Remaining NPIAS airports	*



Why do we need SMS?



James Reason's Swiss cheese model of defenses. Reprinted from the BMJ [71] (copyright 2000) with permission from the BMJ Publishing Group Ltd.

Status of ARP Internal SMS

