US Safety Management Activities

Federal Aviation Administration

Presented to: Safety Management Workshop, Kuwait

Presented by: Aaron Wilkins, FAA

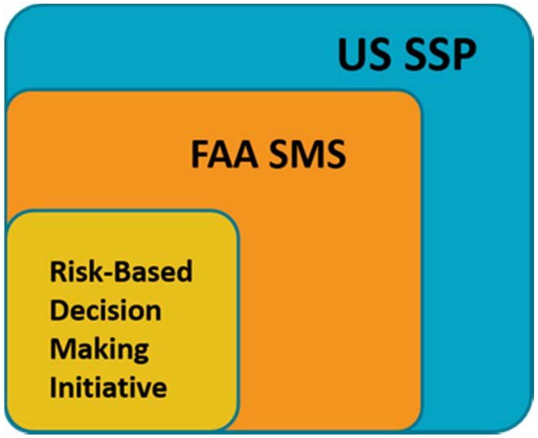
Date: May 25 - 27, 2015

Agenda

1. US State Safety Program (SSP)
2. FAA Safety Management System (SMS)
3. SMS and the Aviation Industry
4. International Collaboration

Overview of Safety Management Activities

- The U.S. SSP provides the overarching framework for our safety system
- The FAA SMS provides the details of our approach to safety management, showing how we will meet most of the tenets of the U.S. SSP



US SSP

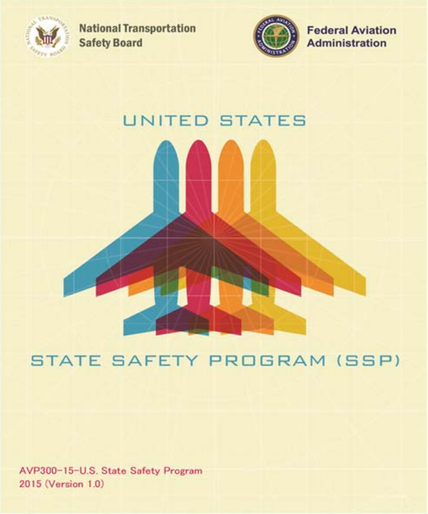
FAA SMS

Risk-Based Decision Making Initiative

- The Risk-Based Decision Making Initiative enables the FAA SMS by putting in place the tools and processes to proactively address emerging safety risk using consistent, data-informed approaches to support system-level, risk-based decisions

U.S. SSP Document

- Published early this year, describes how the US meets the 11 ICAO SSP Framework elements
  - US currently meets SSP intent and most elements, including through implementation of FAA SMS and SMS in the LOBs
- Focuses on roles of FAA and NTSB
  - Although multiple US Government agencies may contribute to US SSP
- *Foreword*, signed by the FAA Administrator and NTSB Chairperson
- Will be reviewed on a regular basis to ensure it reflects evolving aviation safety standards and practices



National Transportation
Safety Board

Federal Aviation
Administration

UNITED STATES

STATE SAFETY PROGRAM (SSP)

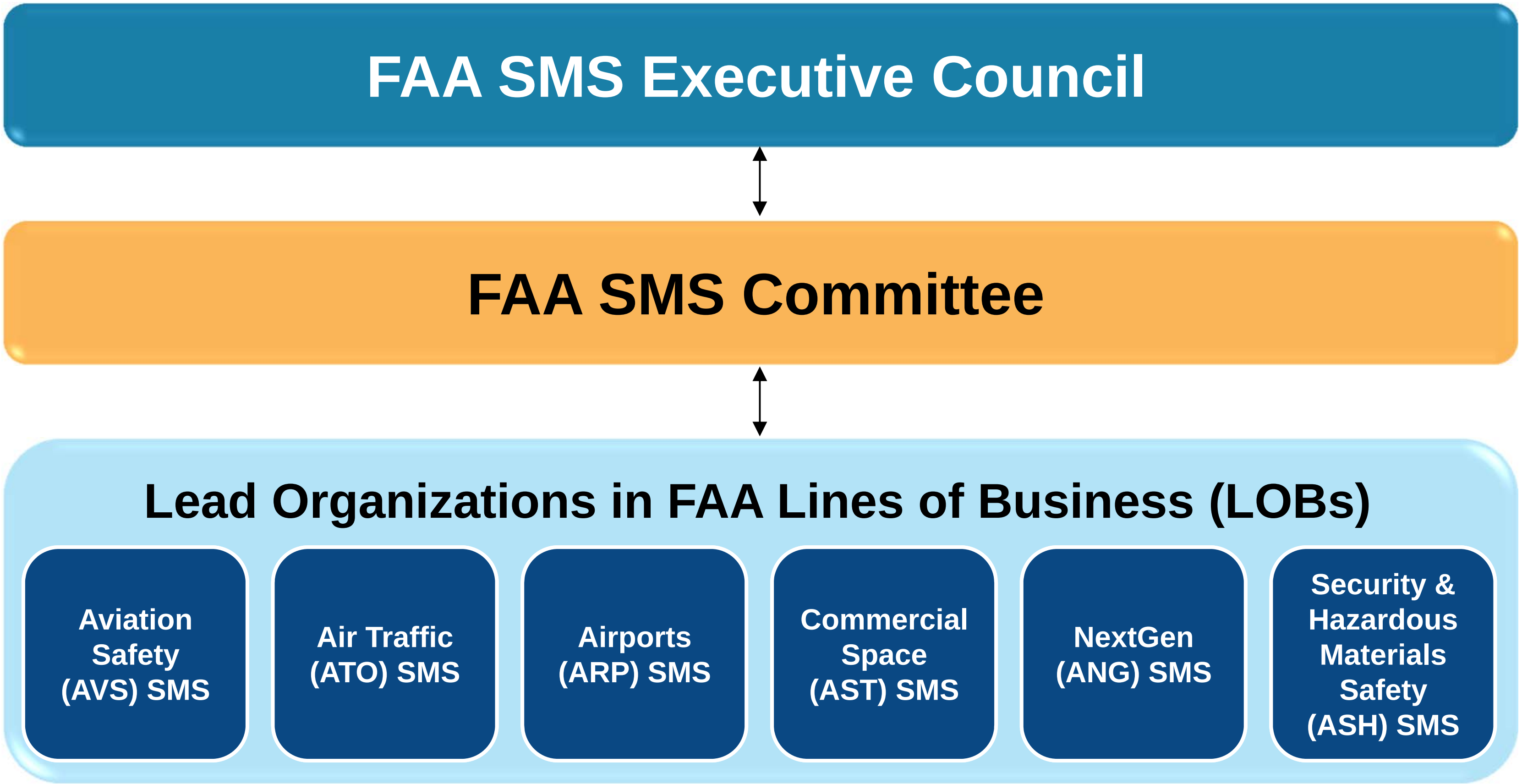
AVP300-15-U.S. State Safety Program
2015 (Version 1.0)

Additional SSP related Activities

US elected to further enhance our SSP by incorporating safety management concepts into our internal processes

- Joint Planning and Development Office (JPDO) SMS Standard
- Department of Transportation (DOT) Safety Management Systems Guidance Document
- FAA SMS Policy and Guidance
- FAA SRM Policy and Guidance
- AVSSMS Requirements Order
- ARP SMS Order
- FAA AVS and Airports SMS rulemaking activities

Management Structure



FAA SMS Executive Council

FAA SMS Committee

Lead Organizations in FAA Lines of Business (LOBs)

- Aviation Safety (AVS) SMS
- Air Traffic (ATO) SMS
- Airports (ARP) SMS
- Commercial Space (AST) SMS
- NextGen (ANG) SMS
- Security & Hazardous Materials Safety (ASH) SMS

Why Has the FAA Adopted SMS?

- Aviation system is changing rapidly
- Repetitive, recurrent common cause accidents (low hanging fruit) essentially eliminated
- Increase in system demand
- Continues evolution in application of system safety concepts in the aviation system

What Do You Get from an SMS?

- Repeatable, proactive, and systematic processes used to manage safety
- Safety Risk Management (SRM) decision making processes that are structured, consistent, defendable, measurable, and data-driven
- Proactive SRM which facilitates identification of hazards and development of risk controls prior to event occurrence
- Demonstrated safety management performance that enables proactive risk management
- Framework to support a sound safety culture

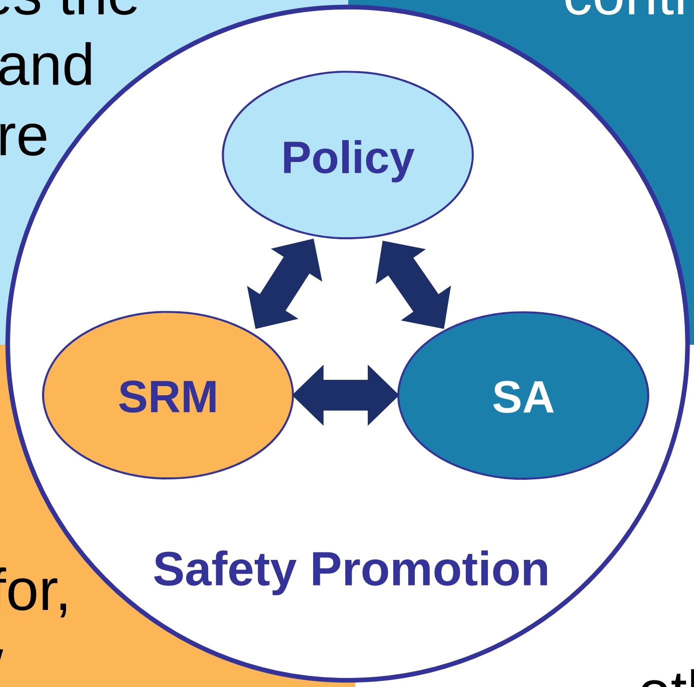
The Four SMS Components

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

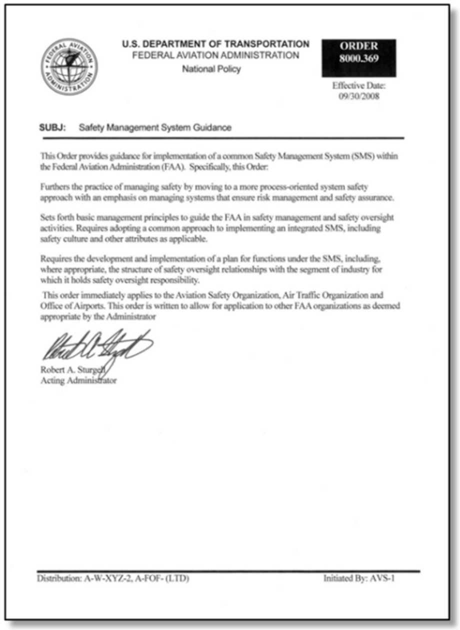
Determines the need for, and adequacy of, new or revised risk controls based on the assessment of acceptable risk

Safety Promotion

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

FAA SMS Order

- FAA Order 8000.369A, *Safety Management System* Purpose:
  - Ensure commonality and alignment of SMS implementation across the FAA
- Content:
  - Explains the SMS principles and requirements
  - Establishes the FAA SMS Executive Council FAA SMS Committee
  - Standardizes terminology for SMS
  - Requires FAA organizations to:
    - Establish guidance for their own SMS activities and their industry segment on implementing SMS
    - Develop and maintain SMS implementation and/or continuous improvement plans



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
National Policy

ORDER
8000.369

Effective Date:
09/30/2008

SUBJ: Safety Management System Guidance

This Order provides guidance for implementation of a common Safety Management System (SMS) within the Federal Aviation Administration (FAA). Specifically, this Order:

Furthers the practice of managing safety by moving to a more process-oriented system safety approach with an emphasis on managing systems that ensure risk management and safety assurance.

Sets forth basic management principles to guide the FAA in safety management and safety oversight activities. Requires adopting a common approach to implementing an integrated SMS, including safety culture and other attributes as applicable.

Requires the development and implementation of a plan for functions under the SMS, including, where appropriate, the structure of safety oversight relationships with the segment of industry for which it holds safety oversight responsibility.

This order immediately applies to the Aviation Safety Organization, Air Traffic Organization and Office of Airports. This order is written to allow for application to other FAA organizations as deemed appropriate by the Administrator

Robert A. Sturgell
Acting Administrator

Distribution: A-W-XYZ-2, A-FOF- (LTD)

Initiated By: AVS-1

AOA Strategic Initiatives

Risk-Based Decision Making

Build on SMS principles to address emerging safety risk by using consistent, data-informed approaches to make smarter, system-level, risk-based decisions

NAS

Lay the foundation for the NAS of the future by accelerating prioritized NextGen benefits, integrating new user entrants, and delivering more efficient, streamlined services

Foundation for Aviation System of the Future

Global Leadership

Improve safety, air traffic efficiency, and environmental sustainability across the globe through an integrated, data-informed approach that shapes global standards and enhances collaboration and harmonization

Workforce of the Future

Prepare FAA's human capital for the future, by identifying, recruiting, and training a workforce with the leadership, technical, and functional skills to ensure the U.S. has the world's safest and most productive aviation sector

Risk-Based Decision Making Sub-Initiatives and Activities

1 Improve standardization, data access, and modeling integration

- Taxonomies
- Modeling
- Greater data access
- Hazard tracking
- Safety data and risk analysis competencies and skills

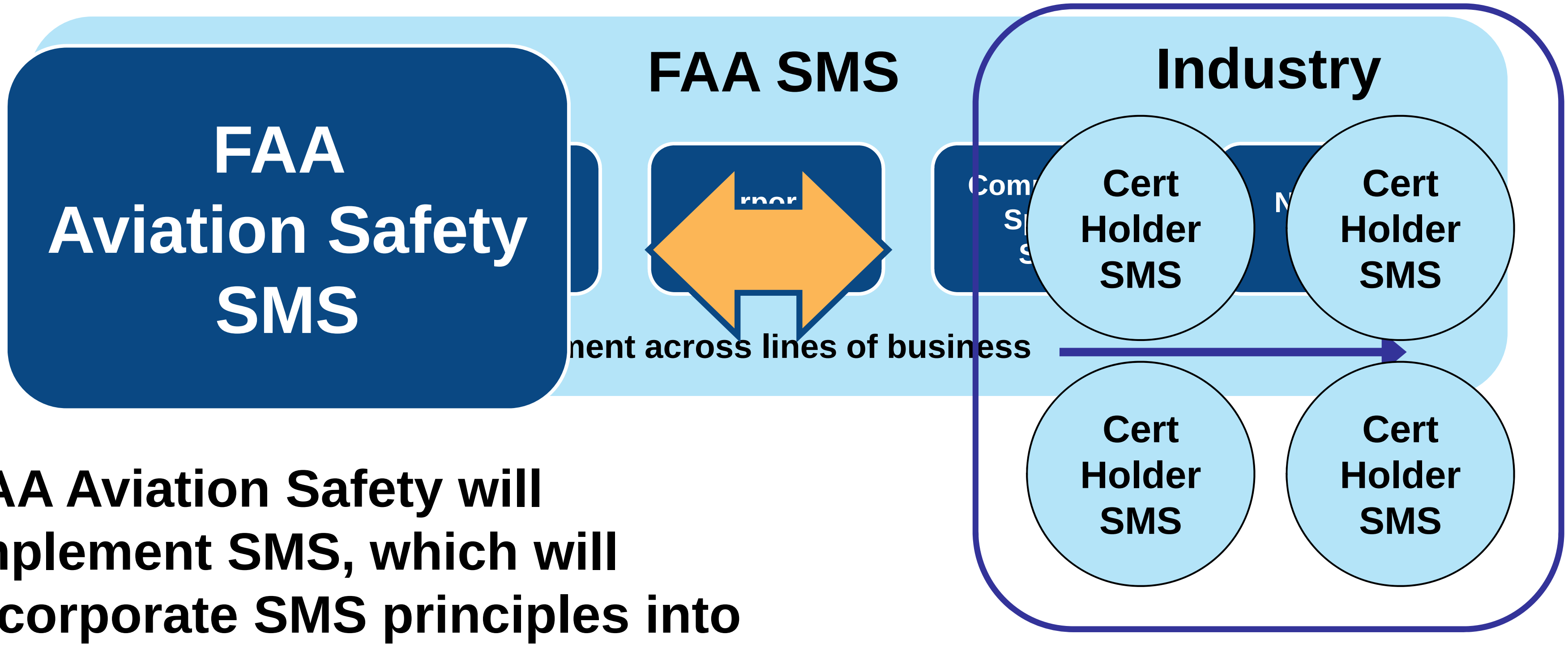
2 Enhance decision making process

- Identify safety hazards of planned changes
- Identify and mitigate safety risk of existing cross organizational issues
- Changes to FAA SMS decision-making and governance structure

3 Evolve the Safety Oversight Model

- Leverage industry's use of safety management principles; exchange safety management lessons learned and best practices

Safety Management Vision


FAA SMS
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FAA Aviation Safety will implement SMS, which will incorporate SMS principles into FAA Aviation Safety operations and the processes, procedures, tools, etc. used to oversee industry.

The FAA Aviation Safety SMS and industry organization SMSs will be aligned to share data/information, results of safety risk analyses, etc. to more effectively and efficiently provide assurance of the safety of the operations.

Certificate holders will implement their own SMS to manage the risk in their operations.

FAA SMS Industry Outreach

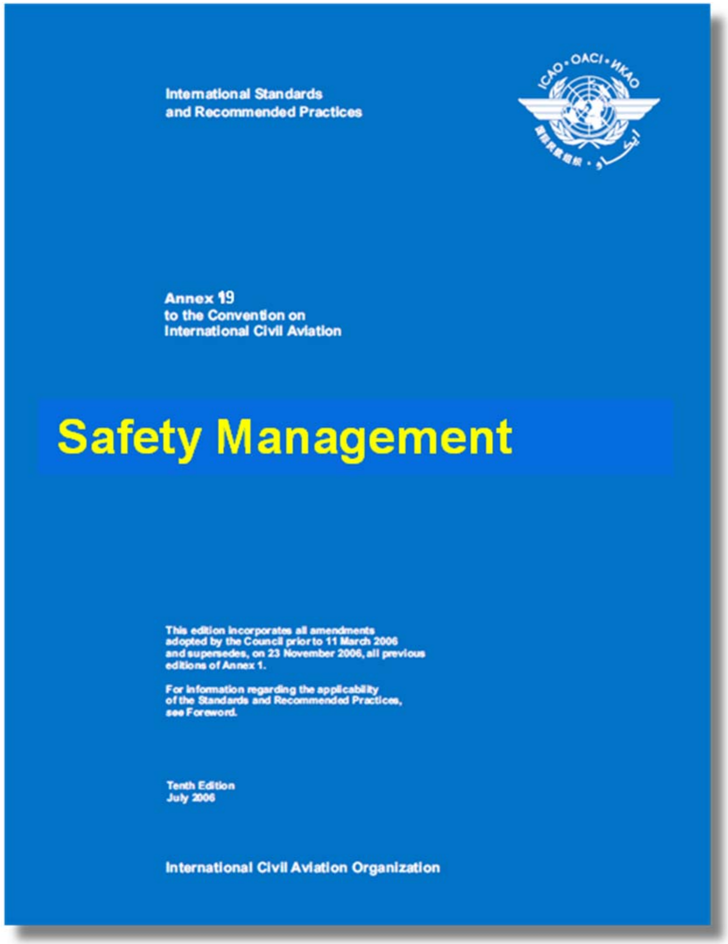
- SMS Regulations - Part 5 Rule
  - SMS Requirements for large air carriers implemented in January 2015
- FAA Flight Standards Service SMS Pilot Projects
  - Since 2007, includes airlines, maintenance providers and training organizations
  - SMS Focus Group (SMSFG) provides a two-way communication mechanism between the SMS Program Office and participants in voluntary implementation
- FAA Airports has initiated two pilot studies in cooperation with airports holding an operating certificate
  - Since 2007, multiple airports with varying levels of operations have participated in these studies
  - Range from the development of a SMS Manual and Implementation Plan to Proof-of-Concept studies
- FAA Aircraft Certification Service has also implemented pilot projects for manufacturers and Aviation
- Rulemaking activities undertaken for design and manufacturing organizations, and airports

SMS Rule Status

- Final rule published on January 8, 2015 requiring operators authorized to conduct operations under part 121 to develop and implement an SMS
- Requires certificate holders under part 119 authorized to conduct operations in accordance with the requirements of part 121 to have an SMS by March 9, 2018
  - Certificate holders must submit an implementation plan by September 9, 2015
  - The implementation plan must be approved no later than March 9, 2016

Annex 19 - Safety Management

- First new ICAO Annex in over thirty years
- Will define the safety management and oversight responsibilities of member States
- Vehicle that will allow for the integration of the safety management functions of a State



International Standards
and Recommended Practices

Annex 19
to the Convention on
International Civil Aviation

Safety Management

This edition incorporates all amendments
adopted by the Council prior to 11 March 2006
and supersedes, on 23 November 2006, all previous
editions of Annex 1.

For information regarding the applicability
of the Standards and Recommended Practices,
see Foreword.

Tenth Edition
July 2006

International Civil Aviation Organization

Two Phase Development

- Phase 1:
    - Consolidation of existing safety management provisions in various Annexes into the new Annex
    - Transfer or duplication of existing safety management related content
    - Modifications to improve the language for clarity
    - Modifications to ensure standardization and harmonization
- Phase 2:
    - Development of further safety management provisions arising from priorities identified by SMP as well as inputs from the ANC and member States

Phase 1 Complete

- Annex 19, Safety Management is complete
    - Adopted by the ICAO Council in February 2013
    - Effective in July 2013 (published)
    - Applicable to Member States in November 2013

SMP Work Program for Phase 2

- Further SMS and SSP development, including better linkage between the SSP and Safety Oversight
- The SMP also recommended addressing:
  - Data protection
  - Accident investigation links
  - Guidance material
  - Implementation issues
- SMP delivered its recommendations for the next iteration of Annex 19 to the ANC in November 2014
- Currently, SMP is developing guidance material.

Safety Management International Collaboration Group (SM ICG)

- Purpose: to promote a common understanding of safety management principles and requirements, facilitating their application across the international aviation community
  - Collaborate on common SMS/SSP topics of interest
  - Share lessons learned
  - Encourage the progression of a harmonized SMS
  - Share products with the aviation community
  - Collaboration with international organizations such as ICAO and civil aviation authorities that have implemented or are implementing SMS and SSP

SM ICG Member Organizations

- FAA AVS
- EASA
- TCCA Canada
- ANAC Brazil
- CAA of New Zealand
- CASA Australia
- JCAB Japan

- Part of EASA Team
  - AESA Spain
  - CAA of Netherlands
  - ENAC of Italy
  - DGAC of France
  - FOCA Switzerland
  - Trafi of Finland
  - UK CAA
- Observers
  - ICAO
  - CAA of UAE
  - CAA of Hong Kong

SM ICG Project Teams

- Projects identified and Project Teams established by the SM ICG Steering Committee.
- Project areas of interest include standardization, promotion and guidance.
- SM ICG products will include the development and support of:
  - A common understanding of SMS requirements, safety oversight processes, and safety measures;
  - Guidance material for regulatory authorities and industry which may include guidance and tools, safety behavior assessment tools, training material, and promotion/communication material;
  - Standard taxonomy, which may include standard hazard definition and taxonomy, common SMS and SSP terminology, and data sharing; and
  - Knowledge sharing between authorities.

SM ICG Final Products

- Pamphlet - "10 Things You Should Know About Safety Management Systems"
- Paper - "A Common Approach to Safety Performance"
- Paper - "Development of a Common Taxonomy for Hazards"
- Guide - The Senior Manager’s role in Safety Management Systems
- Guide - The Frontline Manager’s role in Safety Management System
- Guide - SMS Evaluation Tool
- Paper - Safety Management Terminology
- Paper - SM ICG Findings on SMS Equivalence
- Guide - Risk Based Decision Making
- Guide - A Systems Approach to Measuring Safety Performance
- Guide - Measuring Safety Performance – Guidelines for Service Providers
- Guide – Examples of Hazards in the Aviation System
- Guide – SMS Inspector Competency Guidance
- Joint papers submitted to various venues

- Available via SKYbrary - http://bit.ly/SMICG

Next Steps

- Continue to further develop and integrate RBDM, FAA SMS and US SSP
- Continue SMS rulemaking activities
- Continue voluntary SMS implementation activities
- Continue international collaboration via SM ICG and ICAO SMP
- Further information regarding safety management activities: http://www.faa.gov/about/initiatives/sms/
- Continue industry outreach activities

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