FAA Office of Aviation Safety - Safety Management System

Federal Aviation Administration

Presented to: Safety Management System Focus Group

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Purpose of Briefing

- **Describe the drivers for change including the Joint Program Development Office (JPDO) and ICAO changes requiring SMS**

- **Describe in detail the AVS approach to SMS**

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Drivers: Why change?

Why Change?

- **Significant increase in system demand**[*]
  - The number and types of airplanes
  - The amount of flights and passengers
- **Aviation system is changing rapidly**
  - New technologies
  - New business models
  - Expanded environmental impact concerns
- **Everyone must adapt to these changes**
  - In the midst of change we must maintain public confidence in the safety of the air transportation system

FAA Aerospace Forecast Fiscal Years 2006–2017; JPDO NexGen Integrated Plan
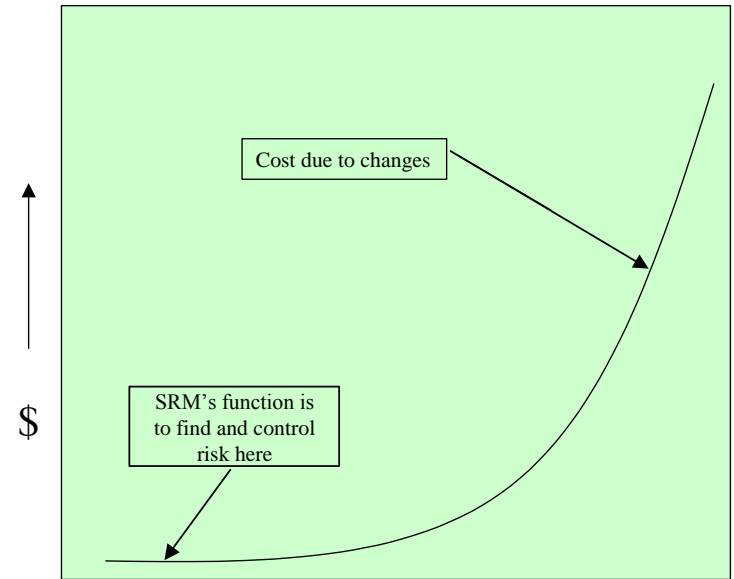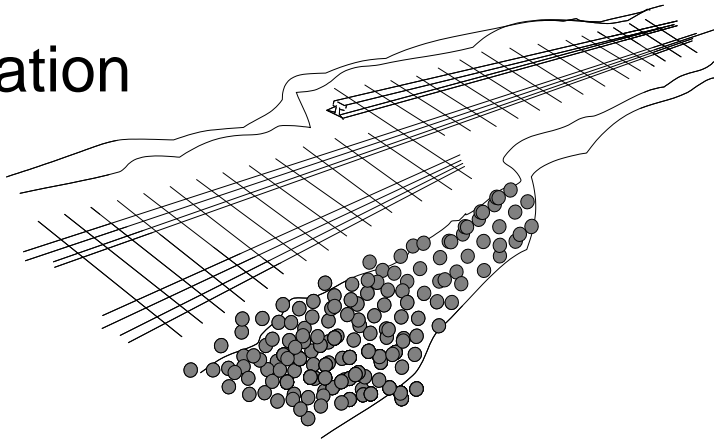
Why Change? (con't)

- **International – ICAO**
  - Widespread international usage in air traffic, airports, and operators
  - Future use includes proposed changes to ICAO accords
- **National – Joint Program Development Office (JPDO)**
  - Congressional mandate to develop a national framework for managing the safety of air transportation system
  - DOD, DOT, DHS, FAA, NASA, DOC
- **FAA – Flight Plan**
  - *FY 2010:* implement SMS in Air Traffic Organization (ATO), Office of Aviation Safety (AVS), and Office of Airports (ARP)
  - *FY 2012:* implement SMS policy in all appropriate FAA organizations
- **Aviation Safety – SMS Doctrine (VS 8000.1)**
  - AVSSMS Program

Benefits of SMS

Integration

Early
Intervention

Cost due to changes

SRM's function is
to find and control
risk here

$

Time

Reduced Total Cost

ICAO

- **State letter, Dec 2007 – Proposal for the amendment of … to harmonize and extend provisions relating to safety management**
  - Annex 1 – Personnel Licensing
  - Annex 6 – Operation of Aircraft
  - Annex 8 – Airworthiness of Aircraft
  - Annex 11 – Air Traffic Services
  - Annex 13 – Accident and Incident Investigation
  - Annex 14 – Aerodromes

JPDO Vision / Goals

A transformed air transportation system that provides services tailored to individual customer needs, allows all communities to participate in the global economy, and seamlessly integrates civil and military operations

Expand Capacity

Ensure Safety

Ensure our National Defense

Protect the Environment

Secure the Nation

**Retain U.S. Leadership in Global Aviation**

JPDO Transformation Strategies

1. Develop Airport Infrastructure to Meet Future Demand
2. Establish an Effective Security System without limiting mobility or civil liberties
3. Establish and Agile Air Traffic System
4. Establish a User-specific Situational Awareness
5. **Establish a Comprehensive Proactive Safety Management Approach**
6. Develop environmental protection that Allows Sustained Aviation Growth
7. Develop a System-wide Capability to Reduce Weather Impacts
8. Harmonize Equipage and Operations Globally

An Industry Answer?

ICAO, FAA, JPDO, overseas Regulators, Air Carriers, ALPA, IATA, IBAC
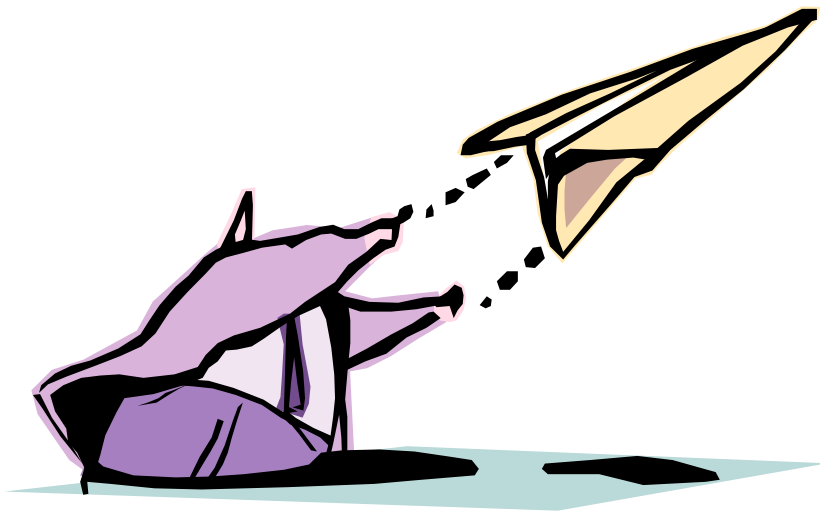
SMS

Launching a *common* idea and a *new* approach:

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AVS Approach to SMS implementation

Office of Aviation Safety

- **One of four FAA lines of business**
- **Led by Associate Administrator for Aviation Safety**
- **About 6850 employees**
- **Includes**
  - Air Traffic Oversight Service - AOV
  - Aircraft Certification Service - AIR
  - Flight Standards Service - AFS
  - Office of Accident Investigation - AAI
  - Office of Aerospace Medicine - AAM
  - Office of Aviation Safety Analytical Services - ASA
  - Office of Quality, Integration, and Executive Services – AQS
  - Office of Rulemaking – ARM

AVS Journey to Excellence

Compelling Case for Change	Quality & Integration	Culture & Values	System Safety	Excellence
• Changing Industry Business Models & Growth (Commercial & General Aviation) • Greater Complexity • Challenging Budget Climate • Competition & Leadership • Inconsistent Policy & Non-Standardization	• Customer Focused • Quality Management System (ISO-9000) • Integrated processes	• Core Values • Leadership • AVS Workshops & Training • Measure-ment • Account-ability	• Integrated Safety System • Data driven • Risk Management Principles • Proactive	• Enhanced safety • Better, more consistent service • Innovative and world class • Higher value to those we work with, regulate, and serve

Move to SMS

"The next logical step to enhance safety is what I see as the evolution from "inspecting safety in." We have matured to the point where we need to take a systems approach with Safety Management Systems. Safety Management Systems, or SMS, enable organizations to identify and manage risk. Managing risk is fundamental, and Safety Management Systems enable us to manage risk far better than before. Operating under an SMS assures a disciplined and standardized approach to managing risk."
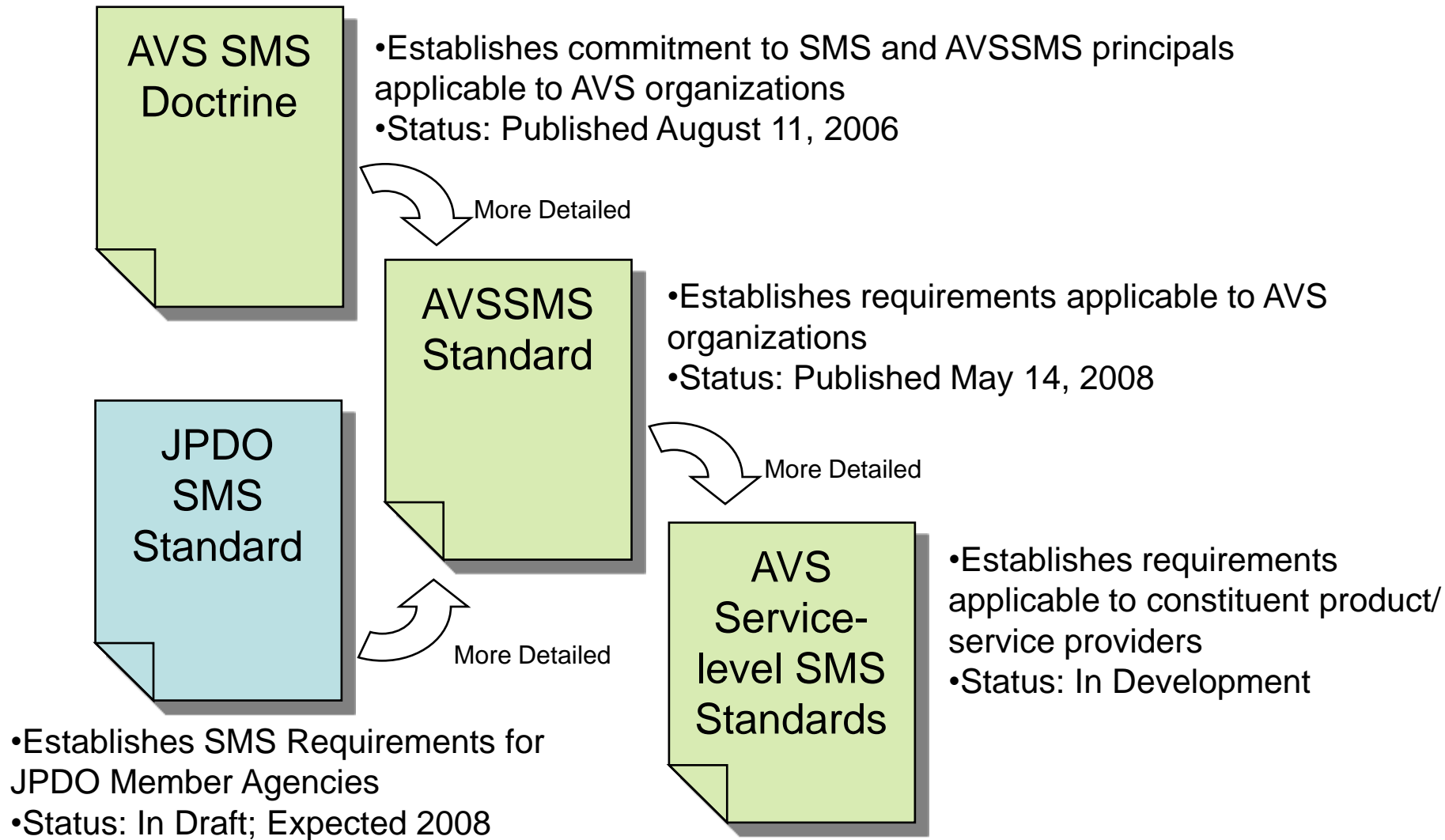
-- Nick Sabatini, AVS-1

(October 11, 2006)

AVS SMS

- **AVS approach –**
  - Publish Doctrine to establish vision and strategy
  - Establish requirements
    - AVS SMS Order contains both FAA and industry requirements
  - Build program around the strategy
- **Integrated Safety Council (ISC)**
  - AVS SMS Working Group (AVSSMSWG)
    - Use momentum of existing programs
    - Design to requirements
    - Plan around the design
    - Fund the implementation plan
    - Execution
- **Work with industry to test prototypes**
- **Rulemaking**
  - Publish 1 rule covering SMS, existing parts will point to this rule as a requirement
  - Aviation Rulemaking Committee (ARC)
- **Verify the system works**

SMS Requirements - Relationship

AVS SMS Doctrine

- Establishes commitment to SMS and AVSSMS principals applicable to AVS organizations
- Status: Published August 11, 2006

More Detailed

AVSSMS Standard

- Establishes requirements applicable to AVS organizations
- Status: Published May 14, 2008

More Detailed

JPDO SMS Standard

AVS Service-level SMS Standards

- Establishes requirements applicable to constituent product/ service providers
- Status: In Development

More Detailed

- Establishes SMS Requirements for JPDO Member Agencies
- Status: In Draft; Expected 2008

AVS SMS Doctrine

- **FAA Order VS 8000.1 was published on August 11, 2006**

- **Establishes AVS's commitment to SMS**
  - Requires the implementation of the AVSSMS within each Service/Office
  - Allows each Service/Office to tailor the implementation to their respective areas
  - Establishes Integrated Safety Council (ISC) to lead AVSSMS implementation and integration

AVS SMS Order (Standard)

- **Builds upon:**
  - Concepts in AVS SMS Doctrine
  - Draft Joint Planning & Development Office (JPDO) SMS Standard

- **Establishes:**
  - Requirements for SMS that AVS and AVS's Services/Offices must meet
  - Requirement for AVS Services that oversee entities in the system to establish SMS requirements for those constituent organizations
    - Sets minimum requirements; services/offices can develop more detailed requirements
    - Flexible: broadly applicable across the system
    - Scalable: work for large as well as small organizations

AVS Integrated Safety Council

- **Required by AVS SMS Doctrine**
- **Responsible to AVS Management Team for SMS decisions**
- **Senior executive representatives from all AVS Services/Offices**
- **Oversees AVS SMS Working Group**
- **Integrates SMS implementation efforts across AVS Services/Offices**

AVSSMS Working Group

- **Supports the ISC in the development and implementation of an integrated AVSSMS**

- **Manages the plan, technical products, and overall progress in the implementation of the AVSSMS**

- **Ensures implementation of the service/office safety management systems are coordinated and accomplished in a timely manner**

- **Encourages commonality in the implementation of the constituent product/service provider SMS requirements**

- **Obtains and shares lessons learned**

- **Led by the AVSSMS Program Manager with members from all AVS Services/Offices**

AVSSMS Working Group

- **Manages activities of its project teams:**
  - Strategic and Implementation Planning
  - Design
  - Standards
  - Human Resources, Communications, Training
  - Testing and Lessons Learned
  - Information Sharing
  - Rulemaking

Testing and Lesson Learned Project

- **Objectives**
  - Standardization in the testing of the AVS SMS processes
  - Incorporation of lessons learned to enhance AVS SMS
- **Team will include members from all AVS services and offices**

Testing and Lesson Learned Project

- **Responsibilities**
  - Test the integrated AVS SMS and collect lessons learned for feedback into the AVS-wide implementation of SMS
  - Incorporate SMS lessons learned from other US governmental and international civil aviation authorities
  - Ensure that AVS services and offices test the SMS processes developed for their respective organizations and collect lessons learned for feedback into the service/office implementation of SMS
  - *S*upport Flight Standards Service, Aircraft Certification Service, Office of Aerospace Medicine and Air Traffic Oversight Service in the collaborative testing of the AVS SMS with their constituent industry organizations
  - Outreach to organizations outside the FAA including other US governmental, international and industry entities

Next Steps/Activities

- **Continue Rulemaking strategy**
- **Continue design and architecture efforts**
- **Finalize strategic plan**
- **Service and Office AVS SMS requirements applicability**
- **Develop communication and training strategies**
- **Obtain and share lesson learned**
- **Initiate outreach to industry and civil aviation authorities**
- **Proposed creation of AVS SMS PO**

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REFERENCES

- **FAA Order VS 8000.1, AVS SMS Doctrine**

- **FAA Order VS 8000.367 AVS SMS Requirements Order**

- **AC 120-92,** *Introduction to Safety Management Systems for Air Operators*

- **ICAO Document 9859,** *Safety Management Manual (SMM)*

- **ALPA,** *Background and Fundamentals of the Safety Management System (SMS) for Airlines*

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