

Introduction to Safety Management System (SMS)

A High-Level Overview

Presented By: Flight Standards Service

Revision July 29, 2009



Federal Aviation
Administration

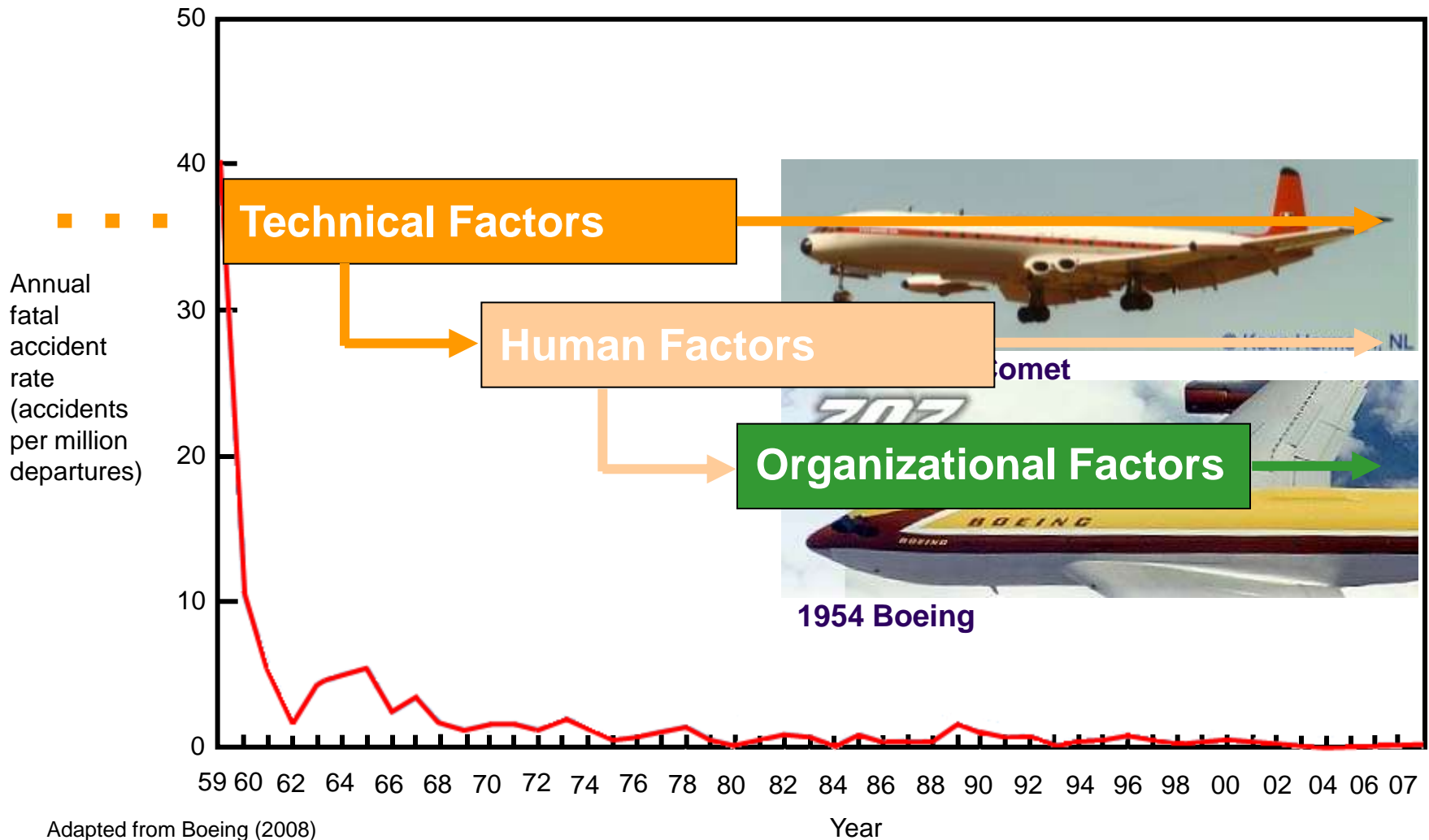


Federal Aviation
Administration

SL-1

U.S. and Canadian Operators Accident Rate by Year

Fatal Accidents-Commercial Jet Fleet – 1959 Through 2007



Adapted from Boeing (2008)



Traditional approach – Preventing accidents

- Focus on outcomes (causes)
- Unsafe acts by operational personnel
- Attach blame/punish for failures to “perform safely”
- Address identified safety concern exclusively

Identifies:

WHAT?

WHO?

WHEN?

But not always

discloses:

WHY?

HOW?



Human Error and Operations

- Human error: a contributing factor in most aviation occurrences.
- The best people make the worst mistakes.
- Errors naturally occur when humans are part of the system.



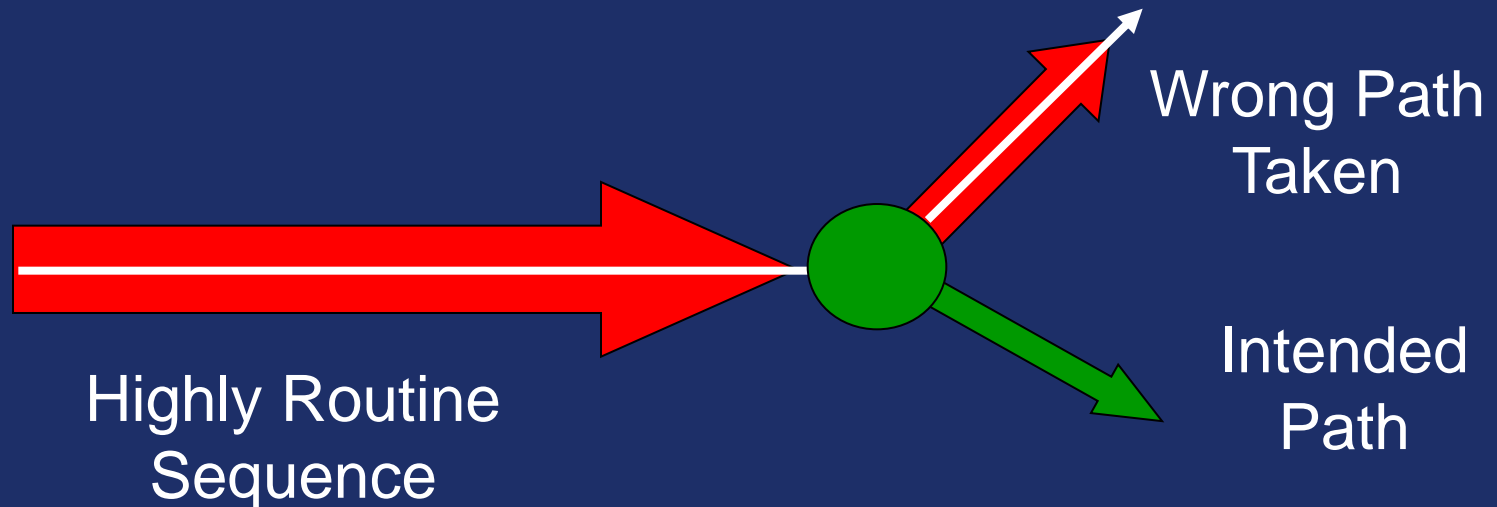
Human Error Fundamentals

- Human Error is Both Universal and Inevitable
- We are “hardwired” to make errors
- Errors, in themselves, are not bad

Increase Awareness

Manage

Human Error + Unforgiving Workplace = Disaster



James Reason & Alan Hobbs (2003)



Federal Aviation
Administration

SL-5

Person Model

- Name
- Blame
- Shame
- Retrain
- Write Another Procedure

Fire the Perpetrator
Pilot/Technician

We Ask Who?



System Model

- Remedial Attention focused on the task and the work place
- Organization
- Supervision

Managing the Manageable

We Ask Why?

James Reason & Alan Hobbs (2003)



Federal Aviation
Administration

SL-6

Safety Management Systems

“SMS”

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

ICAO Doc. 9859



Federal Aviation
Administration

SL-7

What SMS is not and what it is...

What it isn't:

A substitute for compliance

A substitute for oversight

A replacement for system safety

A requirement for a new department

What it is:

Compliance is integral to safety management

An effective interface for safety management

SMS completes the systems approach

A set of decision making processes for senior and line management



Does SMS=ATOS=SAS=QMS?

SMS

- Management system
- Only service provider can manage

ATOS

- Oversight system
- Used to meet regulator responsibilities

SAS

- Safety Assurance System
- FAA Future State System Safety Oversight across 14CFR parts (121, 135, 145)

Does SMS = QMS?

- SMS uses QMS tools to assure risk controls are effective
- QMS Objective
 - Customer satisfaction
- SMS Objective
 - Aviation safety

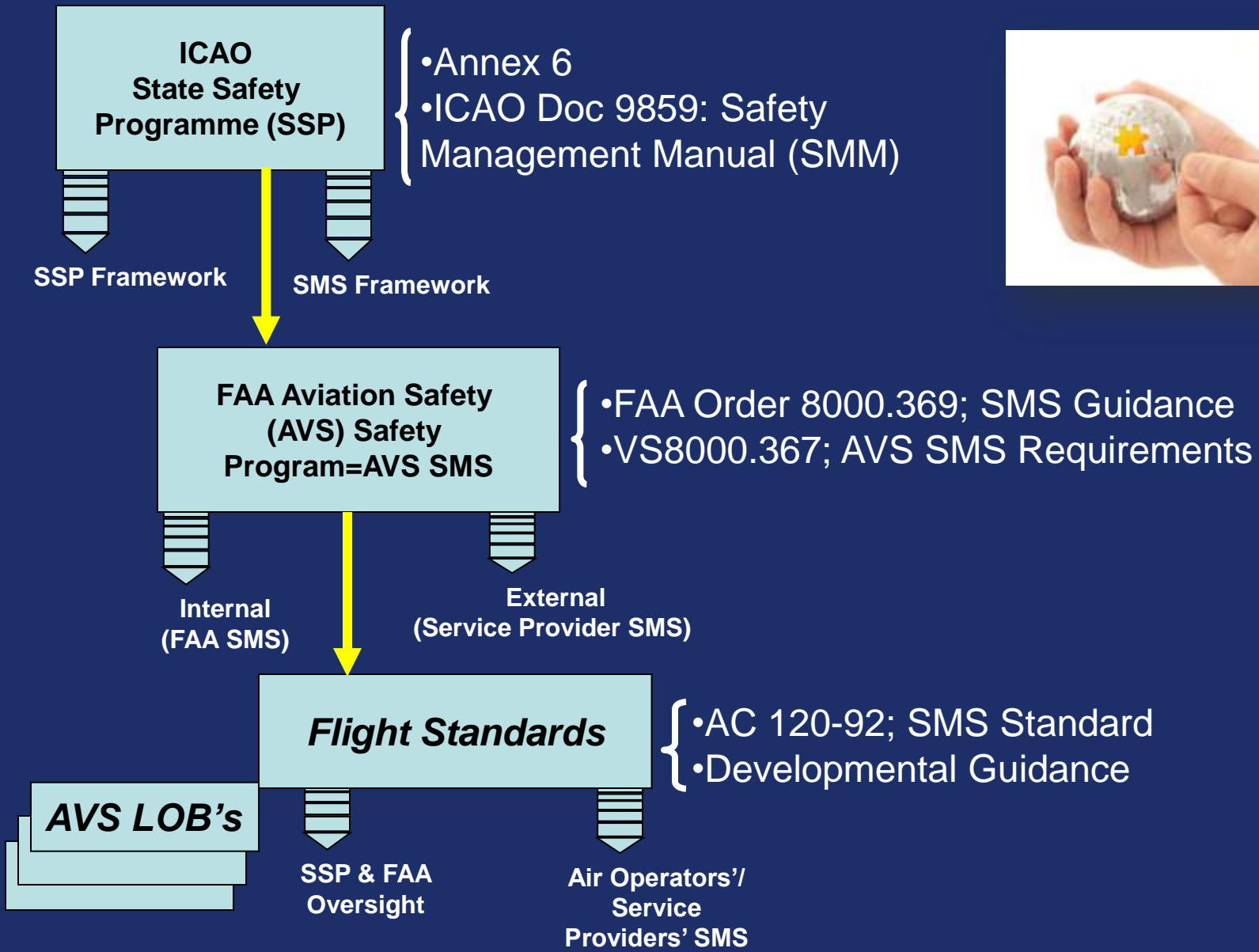
[Example Introductory SMS Video](#)



ICAO Annex 6

- “From 1 January, 2009, **States shall require**, as part of their safety programme, **that an operator implement** a safety management system acceptable to the State of the Operator...”
- The U.S. has filed a difference with ICAO
- Currently, there are no FAA authorized procedures to accept or approve Service Providers’ SMS’s





ICAO and FAA SMS Framework



Elements:

Elements:

1.1 Safety Policy

Elements:

4.1 Competencies and Training

Process 4.1.1 Personnel requirements

Process 4.1.2 Training

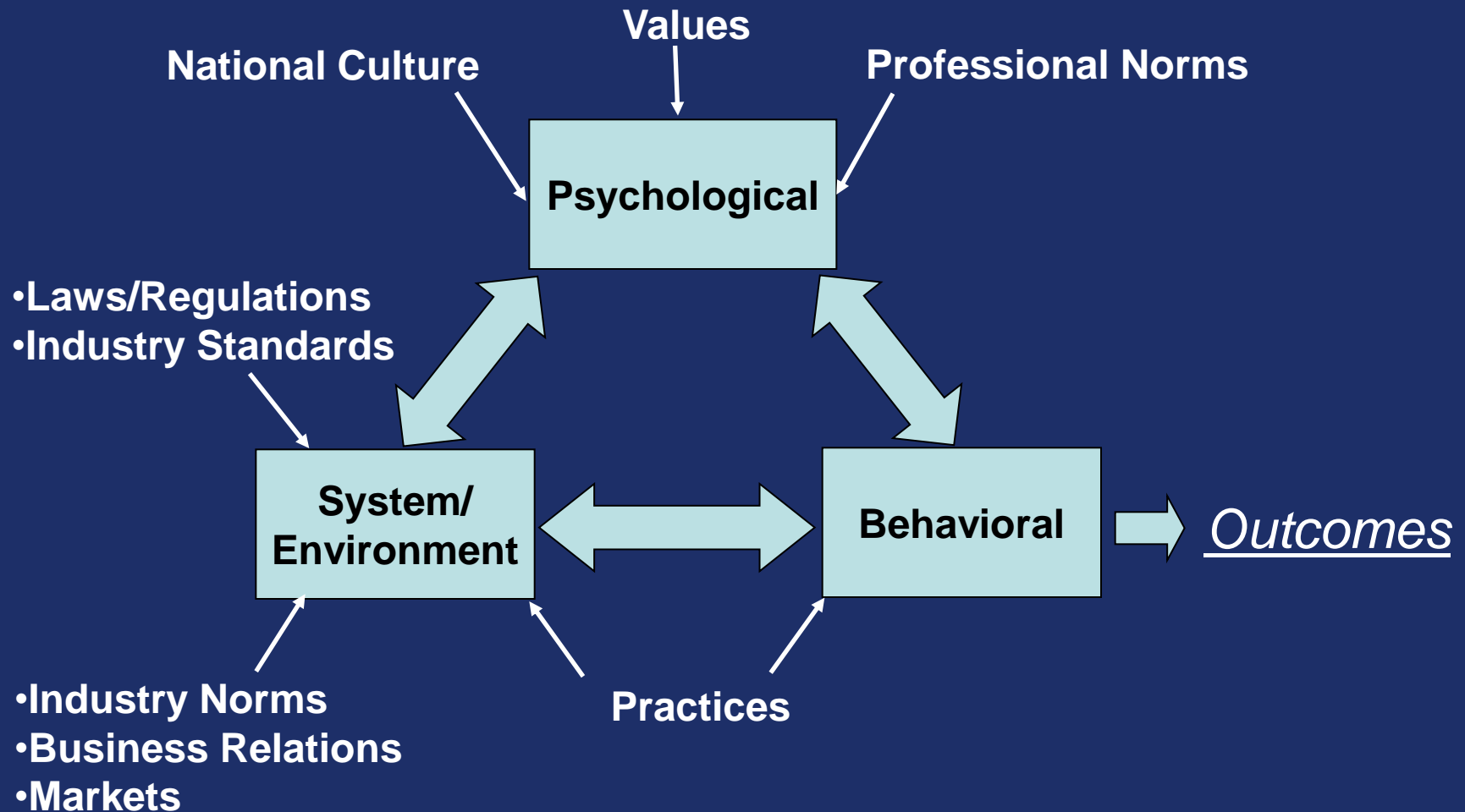
4.2 Communication and Awareness

3.2 Management of Change

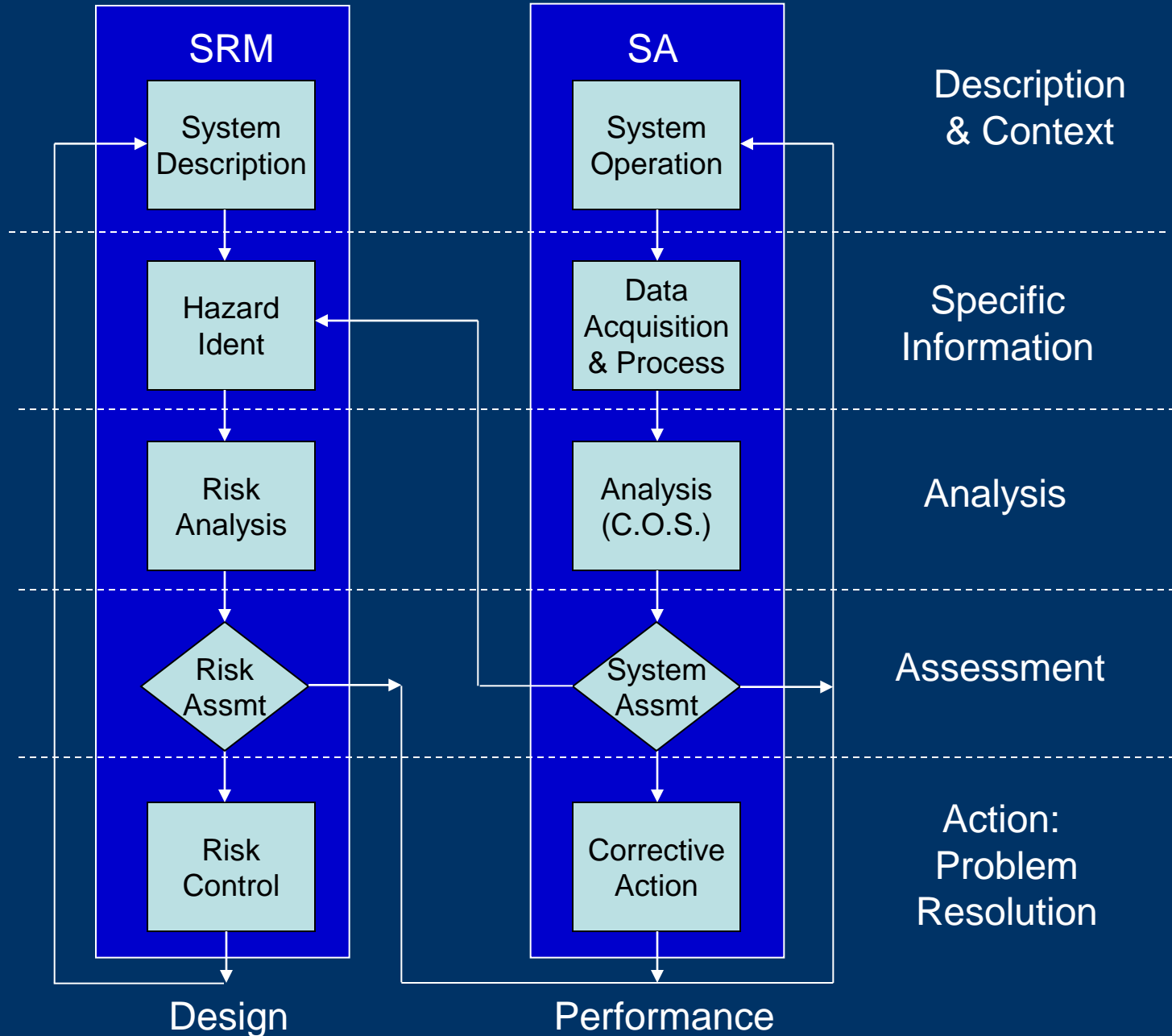
3.3 Continual Improvement



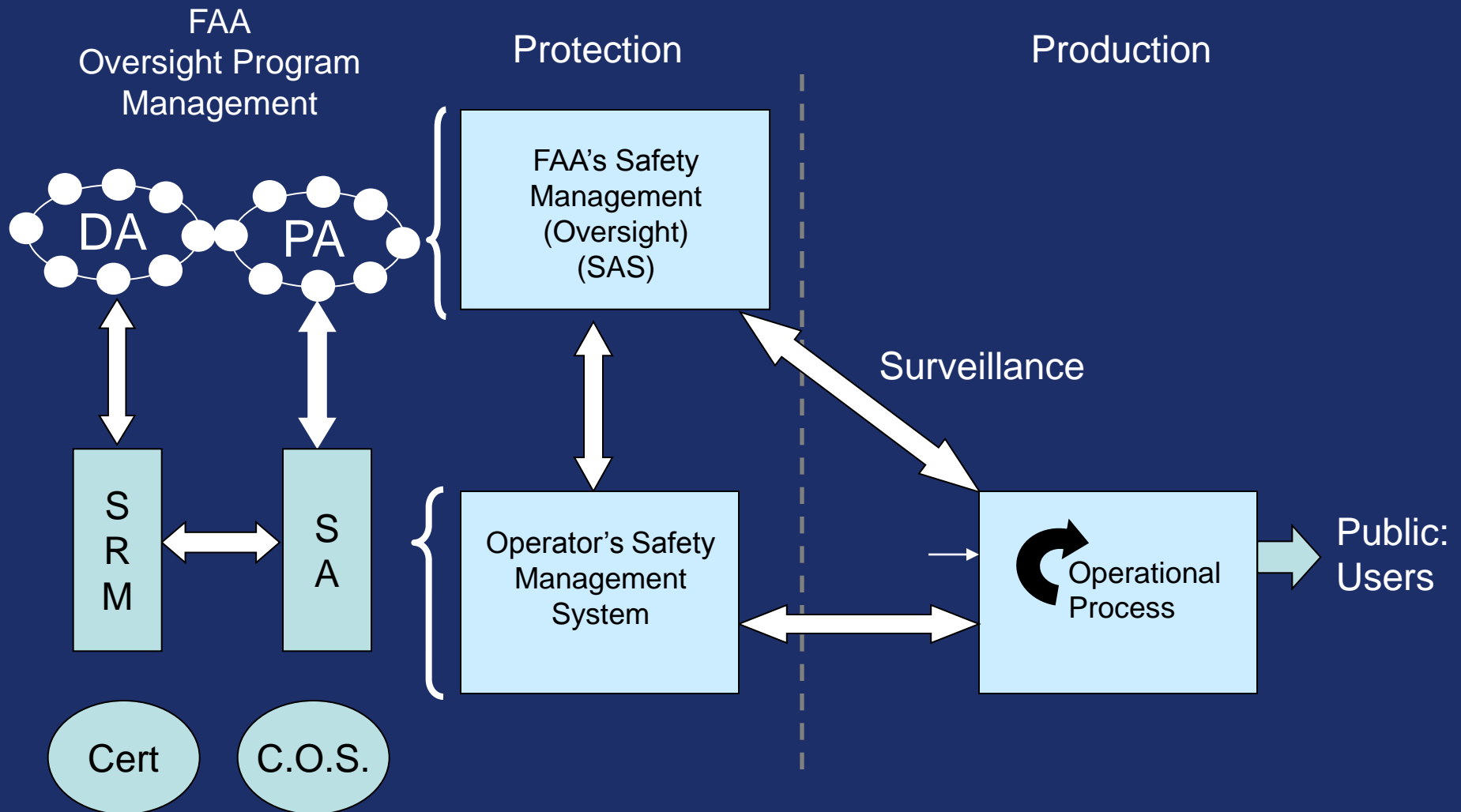
Organizational Culture



Safety Risk Management (SRM) and Safety Assurance (SA) Workflow



Oversight and SMS





Federal Aviation
Administration



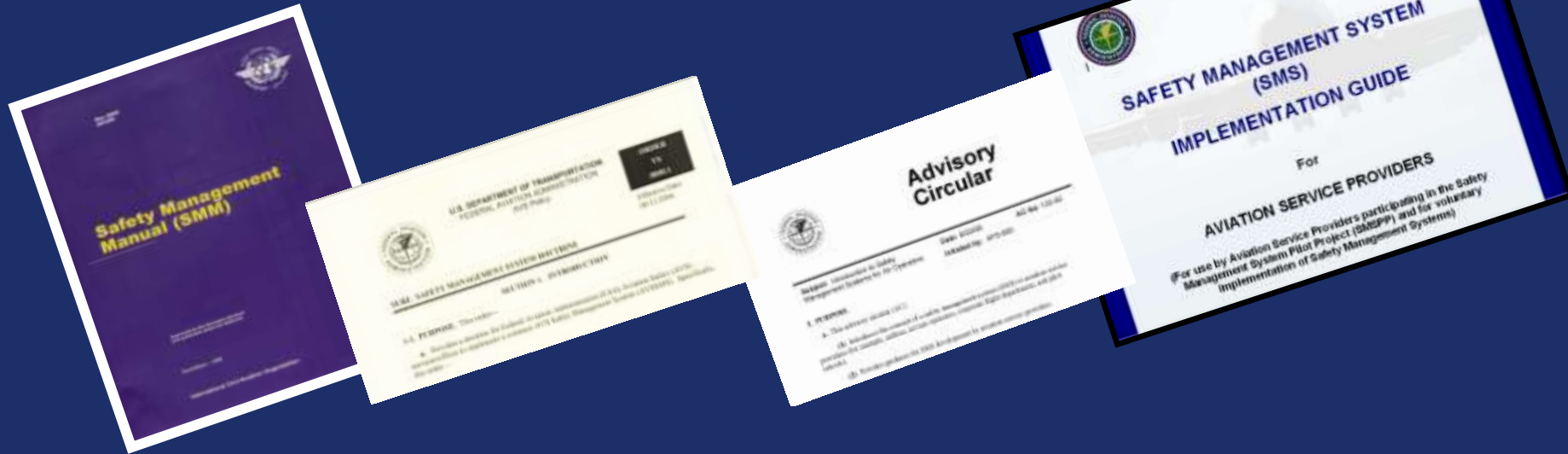
SMS Reference and Guidance Material



Federal Aviation
Administration

SL-16

SMS Guidance and Tools



- ICAO Doc 9859: Safety Management Manual (SMM)
- FAA Order 8000.369: FAA SMS Guidance
- Order VS 8000.367: AVS Requirements Document
- SMS Standard: AC 120-92 Appendix 1
- Voluntary Implementation Guidance (Multiple Docs)





SAFETY MANAGEMENT SYSTEM (SMS) IMPLEMENTATION GUIDE

For

AVIATION SERVICE PROVIDERS

(For use by Aviation Service Providers participating in the Safety Management System Pilot Project (SMSPP) and for voluntary implementation of Safety Management Systems)



SAFETY MANAGEMENT SYSTEM (SMS) ASSURANCE GUIDE

Service Provider



SAFETY MANAGEMENT SYSTEM (SMS) FRAMEWORK

For:

AVIATION SERVICE PROVIDERS

(For use by aviation service providers participating in the Safety Management System Pilot Project (SMSPP) and for voluntary implementation of Safety Management Systems)

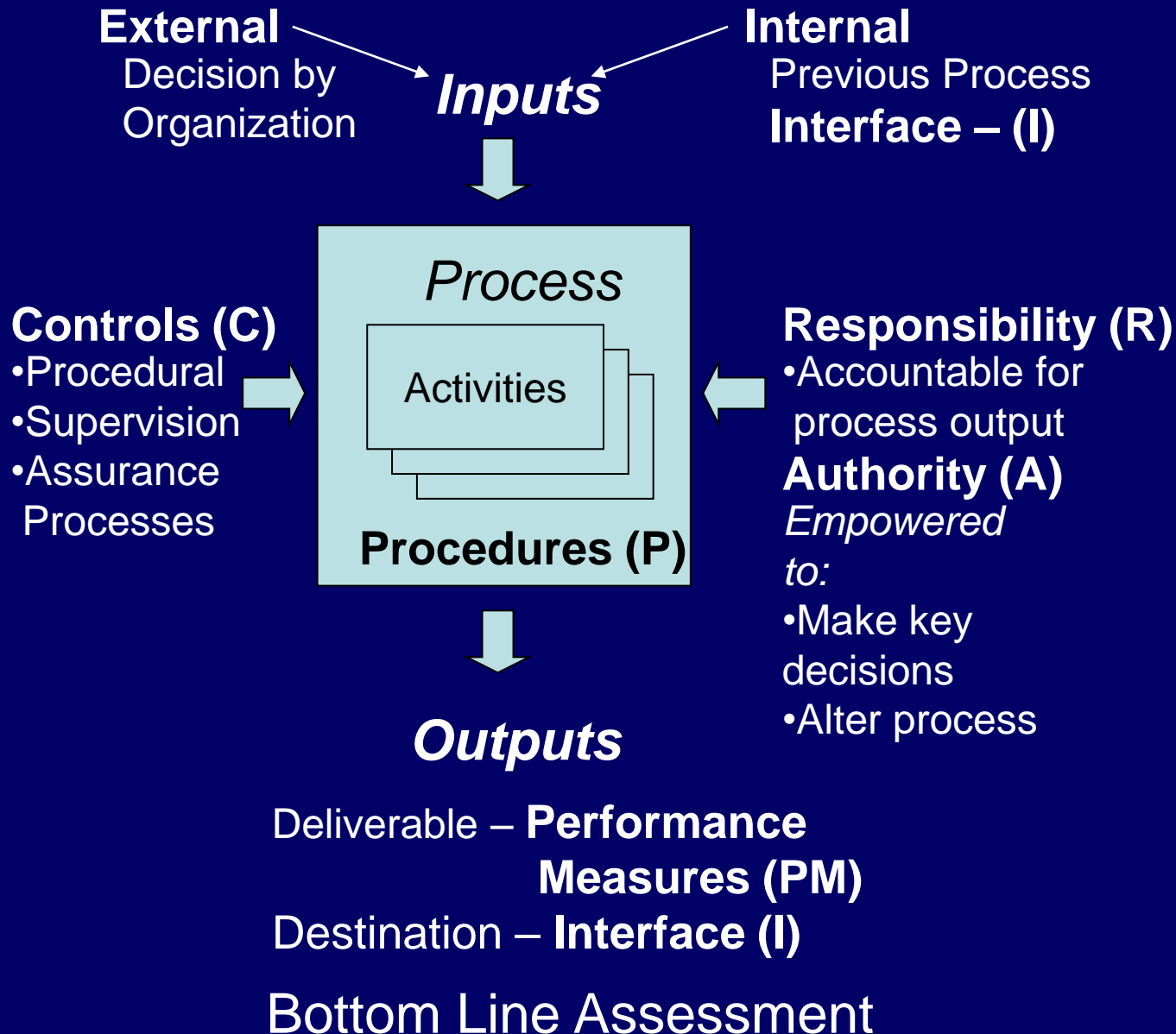


Process (System) Attributes

- Responsibility
- Authority
- Procedures
- Controls
- Process Measures
- Interfaces



Performance Objectives



Preliminary & Detailed Gap Analysis Tools

Preliminary Air Carrier Gap Analysis Tool									
Note: This tool is designed to be used with SMS Assurance Guide, Rev 1, and should be viewed electronically									
Participant:					Location:				
Assurance Guide Question	Overall Assmt Rating	Ft Ops. Assmt Rating	Dispatch Assmt Rating	MTC Assmt Rating	Cabin Assmt Rating	Ground Assmt Rating	Cargo Assmt Rating	Training Assmt Rating	
Component 1.0 Safety Policy and Objectives									
<i>Policy: General Expectations</i>									
Performance Objective									
A service provider will develop and implement an integrated, comprehensive, SMS for its entire organization and will incorporate a procedure to identify and maintain compliance with current safety related, regulatory, and other requirements.									
Element 1.1 Safety Policy									
Performance Objective									
Top Management will define the service provider's safety policy and convey the expectations and objectives to its employees.									
Element 1.2 Management Commitment and Safety Accountabilities									
Performance Objective									
Top Management will define, document, and communicate the roles, responsibilities, and authorities regarding safety throughout its organization.									
Element 1.3 Key Safety Personnel									
Performance Objective									
The service provider will appoint a management representative to manage, monitor and coordinate the SMS processes throughout its organization.									
Element 1.4 Emergency Preparedness and Response									
Performance Objective									





Federal Aviation
Administration



SMS Implementation At-a-Glance



Federal Aviation
Administration

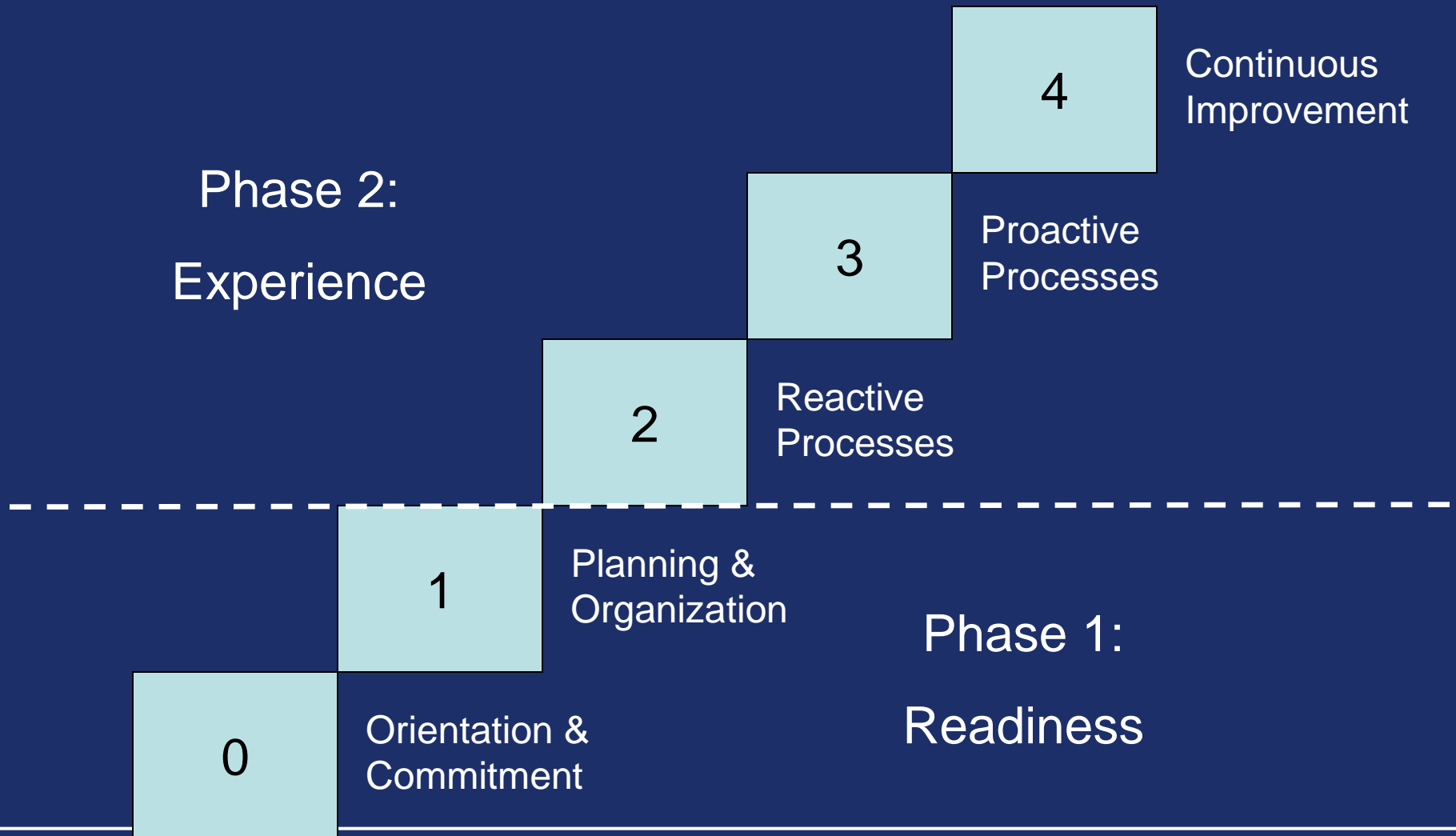
SL-22

SMS Voluntary Implementation: Pilot Projects

- Pilot Project activities commenced in 2007
- Voluntary SMS development
- AFS combined effort
- Objectives are to Develop:
 - Implementation strategies,
 - Oversight interfaces, and
 - Gain experience for FAA and Service Providers



SMS Implementation Process



SMS Transition Assistance Team (STAT)

- Provides Standardization and Assistance to operators and CMT's in voluntary SMS projects
- Under direction of AFS SMS Program Office (PO)
 - Team members currently from:
 - SMS PO
 - FAASTeam
 - HQ Policy Divisions
- All activities coordinated with appropriate certificate oversight offices



Safety Management System Focus Group (SMSFG)

Voluntary implementation user's group

- Provides a two-way communications mechanism between SMS PO and participants in voluntary implementation**
- Provides a forum for knowledge sharing among participants**



Summary



Federal Aviation
Administration



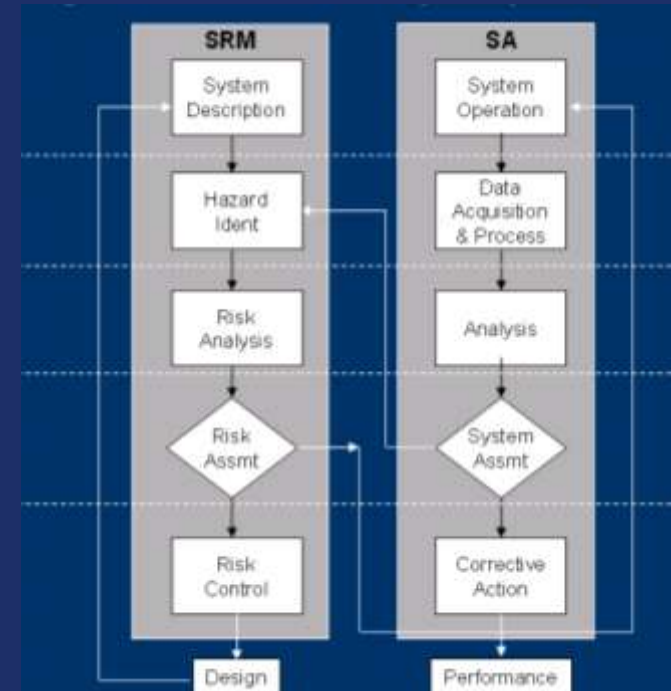
Federal Aviation
Administration

SL-27

Safety Management System

Provides a systematic way to:

1. Identify hazards and control risk
2. Provide assurance that risk controls are effective



“Carelessness and overconfidence are more dangerous than deliberately accepted risk”
Wilbur Wright, 1901

Contact:

SMS Program Office Manager

Don Arendt, Ph.D.

(703) 661-0516

don.arendt@faa.gov



Wilbur Wright gliding, 1901
Photographs: Library of Congress

