



## The Value of SMS

During Periods of Corporate Stress and as a  
Tool to Promote Safety

# Bankruptcy and Reorganization

# AA Safety Management System

## American Airlines Safety Policy



For all of us at American Airlines, our first and top priority is the safety and security of our co-workers and customers. We strive to be a world leader in safety and recognize that running a safe operation is the key to our success. We are committed to a culture that has safety, security, and quality as fundamental priorities.

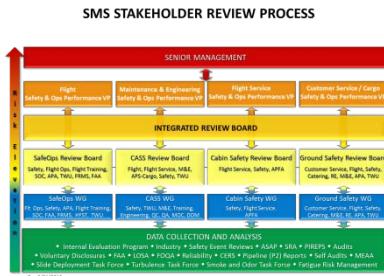
To achieve these priorities, we rely on our Safety Management System

the laws of the countries in which we operate.

Thank you for your continued efforts in promoting a positive safety culture and working together to prevent injuries and accidents.

Tom Horton  
Chairman, President, and CEO  
AMR Corporation and American Airlines

# SAFETY POLICY



## SAFETY PROMOTION

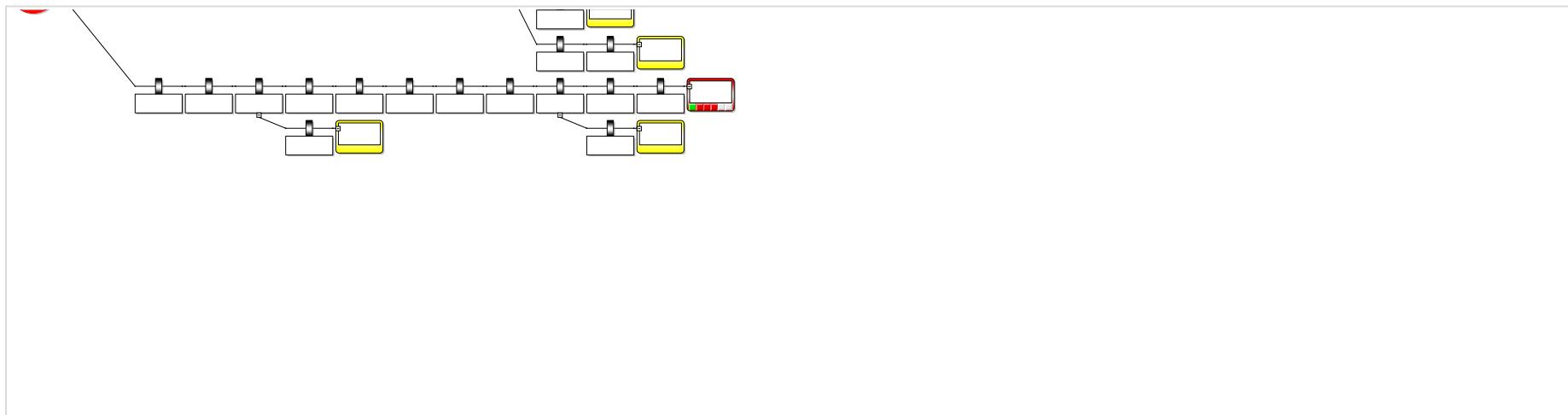
# The Value of SMS During Reorganization

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- Having a strong Safety Management System is vital to assuring safety during periods of organizational stress, such as a bankruptcy/reorganization.
- AA Safety used the bankruptcy announcement as an opportunity to further engage the stakeholders and operational leaders in the Safety Management System.
- A Safety Risk Assessment was accomplished with all key stakeholders for the purpose of predicting the occupational and operational risks associated with a degradation in human performance caused by stress, distractions or fatigue.
- The Safety Risk Assessment, using the bowtie methodology, allowed the team to analyze potential hazards, ensure adequate controls were in place and resourced appropriately, and to strengthen the existing Safety Assurance programs for monitoring and validation of risk mitigation strategies.

# The Value of SMS During Reorganization

## BowTie Analysis



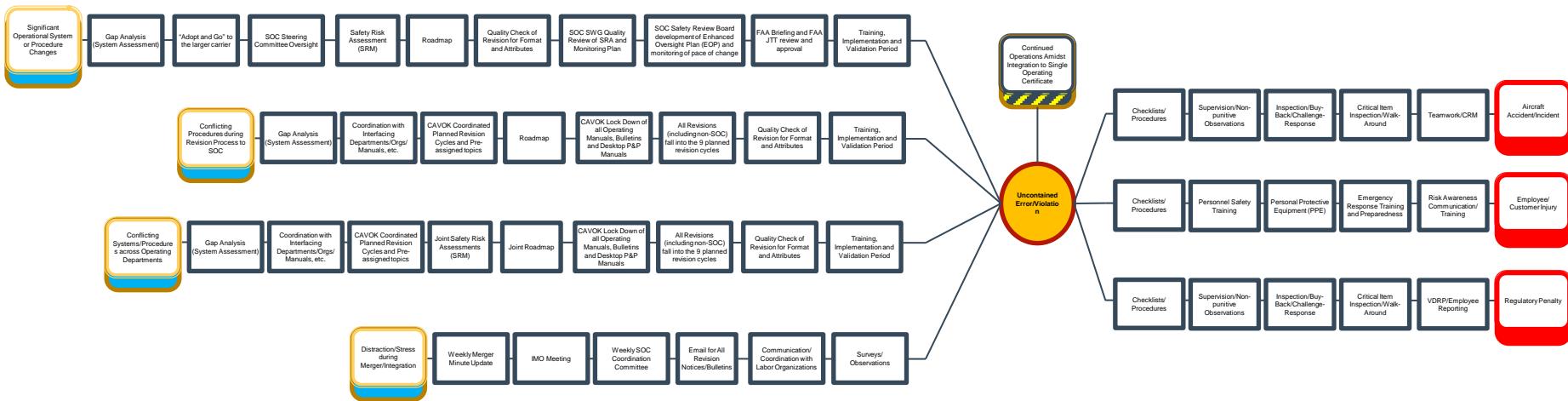
### Participants:

- Key leaders from all operating departments
- Labor safety representatives
- FAA (CMO and DC)
- Human performance subject matter experts (FAA, Industry, Academia)

# Airline Merger

# American Airlines Safety Risk Assessment – Merger/Integration

System Description – Continued safe, reliable, compliant and quality operations (Mx, Flight, Cabin Services, Ramp Operations) during integration to single operating certificate.



Escalation Factors: rate of change, temptation to develop hybrid processes/procedures, poor communication between organizations or to

Hazard: Any situation that is normal to an operation but has a potential to cause harm if threats are not adequately controlled.

Top Event: The "release" of the hazard.

Threat: Any possible cause that will potentially release a hazard and result in an undesirable top event.

Preventive Control: A protective measure to prevent threat(s) from releasing a hazard.

Recovery Control: A preparedness measure to recover or reduce risks if the top event occurs or measure to limit the severity of the outcome.

Consequence: Condition/event(s) that result from the release of hazard/top event.

# The Value of SMS During Mergers

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- Airline integrations require immense amounts of operational system and procedure changes. Often, systems and procedures are in a constant state of change through issuance of a single operating certificate and beyond.
- Having a strong Safety Management System is vital to adequately managing the risks associated with the airline merger integration process.

The SMS focus during a merger:

- Immediately establishing and communicating the Safety Policy from the new airline Accountable Executive
- Defining and establishing a process for managing merger related changes
- Ensuring the Safety Assurance programs remain strengthened and able to monitor the operations and validate the critical risk controls
- Defining the safety performance metrics and key performance indicators that will be used to provide assurance of the risk management activities through integration

# The Value of SMS During Mergers

The SRM process is embedded in our SMS policies and procedures (AA and US Airways). A joint **Risk Assessment Matrix** and **Safety Risk Assessment (SRA) tool** have been developed to aid in accomplishing and documenting integration-related safety risk management.

American Airlines U.S AIRWAYS		Risk Assessment Matrix			
		Severity			
Accident or Incident	<ul style="list-style-type: none"> <li>- Accident with serious injuries or fatalities, or significant damage to aircraft or property</li> </ul>		<ul style="list-style-type: none"> <li>- Serious incident with injuries and/or substantial damage to aircraft or property a large reduction in safety margins</li> </ul>		<ul style="list-style-type: none"> <li>- Incident with minor injury and/or minor aircraft or property damage</li> </ul>
Employee or Customer Injury	<ul style="list-style-type: none"> <li>- Fatality or serious injury with total disability/loss of capacity</li> </ul>		<ul style="list-style-type: none"> <li>- Immediate admission to hospital as an inpatient and/or partial disability/loss of capacity</li> </ul>		<ul style="list-style-type: none"> <li>- Injury requiring ongoing treatment, with no permanent disability/loss of capacity</li> </ul>
Operational Events	<ul style="list-style-type: none"> <li>- State of emergency for an operational condition, impacting the immediate safe operation of an aircraft (i.e. declared emergency, immediate air interrupt, high speed abort)</li> </ul>		<ul style="list-style-type: none"> <li>- Condition resulting in abnormal procedures, impacting the continued safe operation of an aircraft. (i.e. special handling, without declared emergency, enroute diversion, low speed abort)</li> </ul>		<ul style="list-style-type: none"> <li>- Condition resulting in abnormal procedures with potential to impact safe operation of an aircraft. (i.e. battery charger failure, single source of electrical power, slat disagree)</li> </ul>
Systems or Processes	<ul style="list-style-type: none"> <li>- Loss or breakdown of entire system, subsystem or process</li> <li>- Systemwide shutdown or loss of the air carrier certificate</li> <li>- Extreme Customer dissatisfaction or Greater than 2000 customers disrupted for &gt;48 hours</li> <li>- Potential for uncontrolled public relations event</li> </ul>		<ul style="list-style-type: none"> <li>- Partial breakdown of a system, subsystem, or process</li> <li>- Partial system shutdown</li> <li>- Customer dissatisfaction or More than 2000 customers disrupted for &gt;3 hours and less than 48 hours</li> <li>- Potential for large public relations impact requiring heightened management</li> </ul>		<ul style="list-style-type: none"> <li>- System deficiencies leading to poor dependability or disruption</li> <li>- Partial system breakdown of air carrier operations</li> <li>- Customer annoyance or Less than 2000 customers disrupted for &gt;3 hours and less than 48 hours</li> <li>- No public relations impact</li> <li>- Deficiencies present - opportunities for improvement</li> </ul>
Likelihood		I	II	III	IV
Likely to occur (Will occur in most circumstances, not surprised if it happens) Occurs $\geq$ 1 in 100	A	High	High	Serious	Moderate
Possible to occur (might occur in some circumstances) Occurs 1 in 100 to 1,000	B	High	Serious	Moderate	Minor
Unlikely to occur (Could occur in some circumstances, surprised if it happens) Occurs 1 in 1,000 to 10,000	C	Serious	Moderate	Minor	Low
Pare to occur (May occur but only in exceptional circumstances, may happen but it would be highly unexpected) Occurs 1 in 10,000 to 1,000,000	D	Moderate	Minor	Low	Low

American Airlines U.S AIRWAYS		Safety Risk Assessment Worksheet																			
ID Number/Title:	<a href="#">Click here to enter text.</a>																				
Performed by:	<a href="#">Click here to enter text.</a>																				
US Airways/American Airlines:	<a href="#">Click here to enter text.</a>																				
Department:	<a href="#">Click here to enter text.</a>																				
Start Date:	<a href="#">Click here to enter a date.</a>																				
Identify the reason for the risk assessment and complete the assessment per the table below:																					
<input type="checkbox"/> Planned Change to Operational System or Operational Procedures <input type="checkbox"/> New Hazard or Ineffective Risk Controls identified through Safety Assurance																					
<b>PART 1 – SYSTEM ANALYSIS (SYSTEM DESCRIPTION)</b> <p><i>System Analysis – A thorough description and analysis of the system is critical to the accurate identification of hazards and the development of risk controls related to the system. Consider the following information as you complete Part 1: the function and purpose of the system/procedure, the operating environment, an outline of the related processes and procedures, and the personnel, training, equipment and facilities necessary for operation.</i></p> <ol style="list-style-type: none"> <li>Describe the current state of the operational system or operational procedure. <a href="#">Click here to enter text.</a></li> <li>Describe any proposed changes to the operational system or operational procedure. <a href="#">Click here to enter text.</a></li> <li>Identify any internal or external departments this assessment may impact:           <table border="0"> <tr> <td><input type="checkbox"/> Flight Ops</td> <td><input type="checkbox"/> Flight Training</td> <td><input type="checkbox"/> Flight Service</td> </tr> <tr> <td><input type="checkbox"/> Safety</td> <td><input type="checkbox"/> Airport Services</td> <td><input type="checkbox"/> Cargo</td> </tr> <tr> <td><input type="checkbox"/> Maintenance</td> <td><input type="checkbox"/> IT</td> <td><input type="checkbox"/> Security</td> </tr> <tr> <td><input type="checkbox"/> Engineering</td> <td><input type="checkbox"/> IOC/CC</td> <td><input type="checkbox"/> Onboard Products</td> </tr> <tr> <td><input type="checkbox"/> Legal</td> <td><input type="checkbox"/> Employee Safety</td> <td><input type="checkbox"/> Environmental</td> </tr> <tr> <td colspan="3"><input type="checkbox"/> Other (please specify) <a href="#">Click here to enter text.</a></td> </tr> </table> </li> </ol>				<input type="checkbox"/> Flight Ops	<input type="checkbox"/> Flight Training	<input type="checkbox"/> Flight Service	<input type="checkbox"/> Safety	<input type="checkbox"/> Airport Services	<input type="checkbox"/> Cargo	<input type="checkbox"/> Maintenance	<input type="checkbox"/> IT	<input type="checkbox"/> Security	<input type="checkbox"/> Engineering	<input type="checkbox"/> IOC/CC	<input type="checkbox"/> Onboard Products	<input type="checkbox"/> Legal	<input type="checkbox"/> Employee Safety	<input type="checkbox"/> Environmental	<input type="checkbox"/> Other (please specify) <a href="#">Click here to enter text.</a>		
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<input type="checkbox"/> Legal	<input type="checkbox"/> Employee Safety	<input type="checkbox"/> Environmental																			
<input type="checkbox"/> Other (please specify) <a href="#">Click here to enter text.</a>																					
d. Based on your knowledge, does this assessment relate to a CFR, SAI, IOSA or Ops Spec? Yes <input type="checkbox"/> No <input type="checkbox"/> Unsure <input type="checkbox"/> If yes, please specify: <a href="#">Click here to enter text.</a>																					
e. Based on your knowledge, does this assessment relate to a previous commitment for comprehensive fix? Yes <input type="checkbox"/> No <input type="checkbox"/> Unsure <input type="checkbox"/> If yes, please specify: <a href="#">Click here to enter text.</a>																					
Safety Risk Assessment Worksheet		Revision B 8/8/2013																			

# The Value of SMS During Mergers

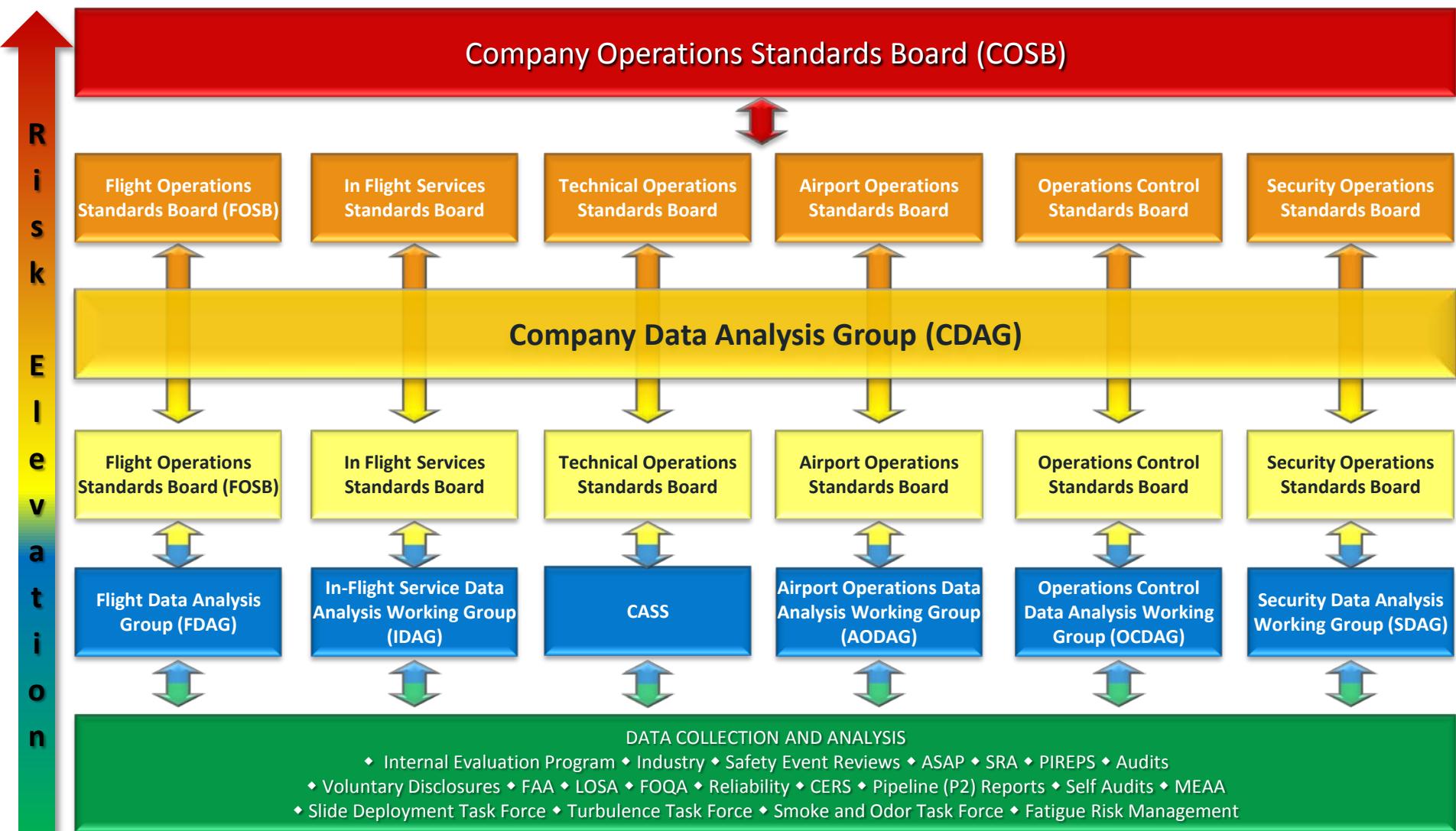


## Tools:

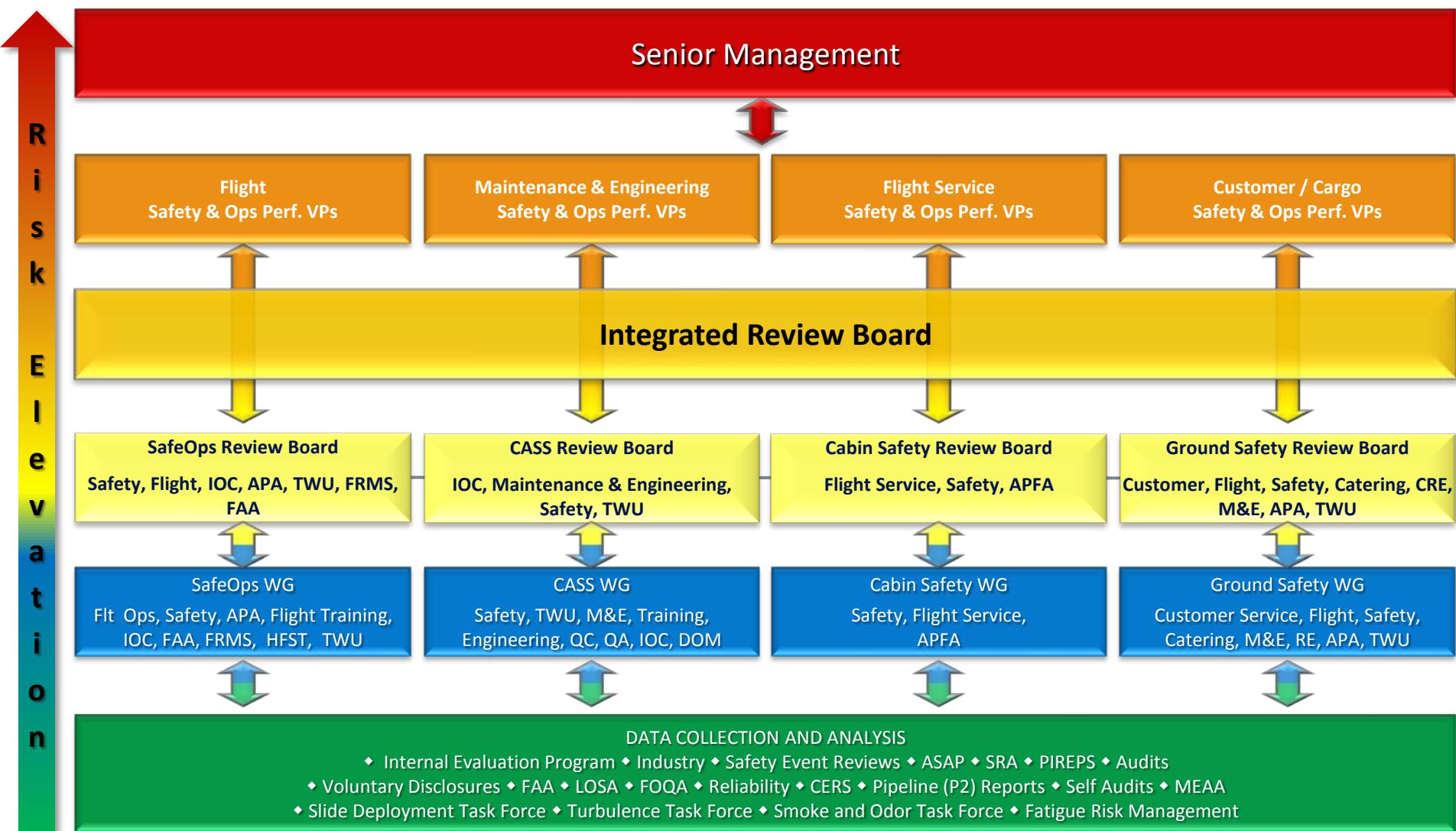
- Reliance on the Safety Management System
- Safety Risk Assessment developed in conjunction with AFS 900 and harmonized across both systems
  - Identifies hazards
  - Safety Risk Assessment
  - Implements risk controls when needed
  - Identifies a follow-up process to validate controls
  - Identifies any unintended consequences
- Safety Assurance processes provide the oversight and pacing tools in the form of Key Performance Indicators (KPIs)

# US Airways

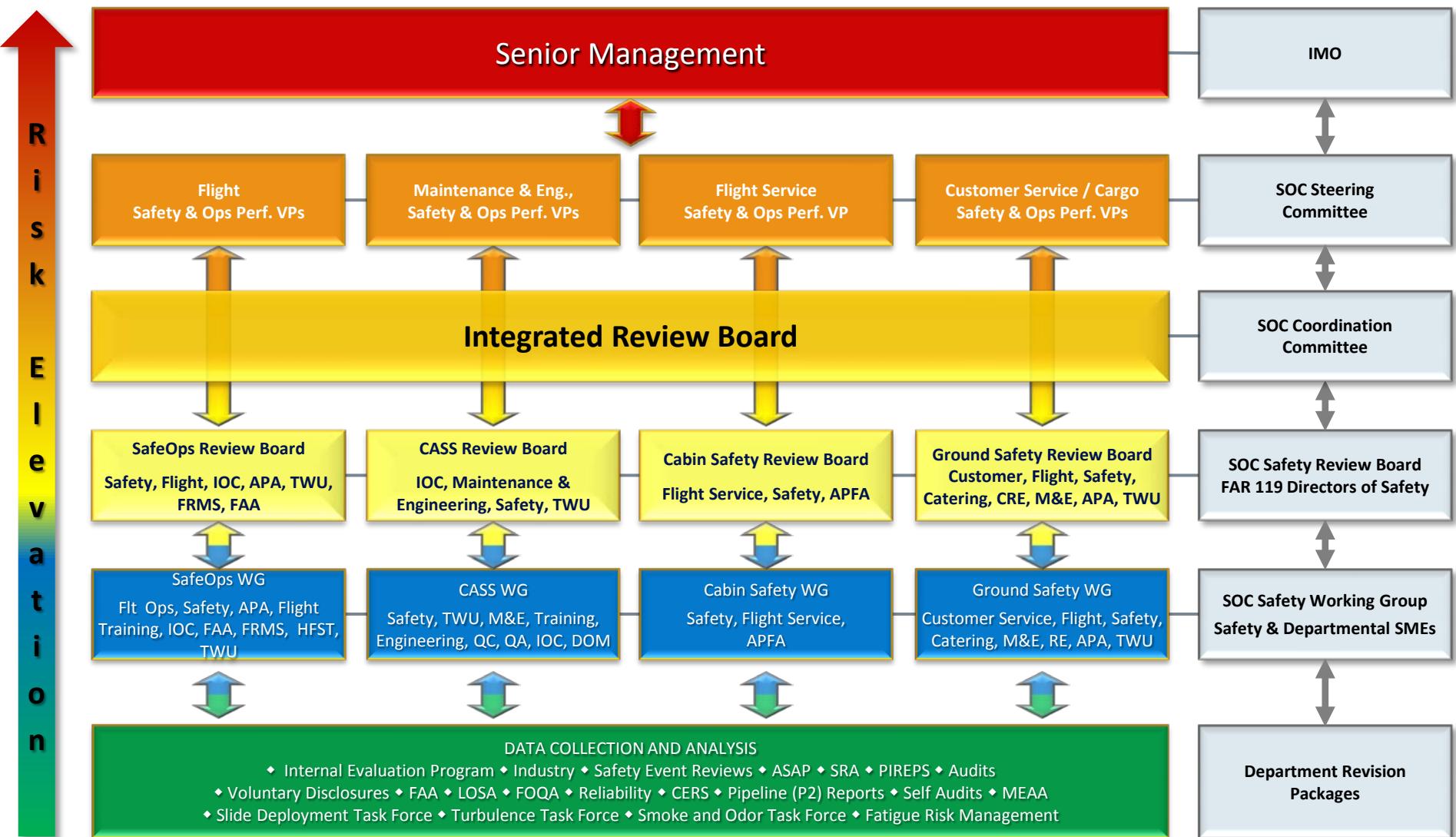
## SMS Action & Review Process



# American Airlines SMS Action and Review Process



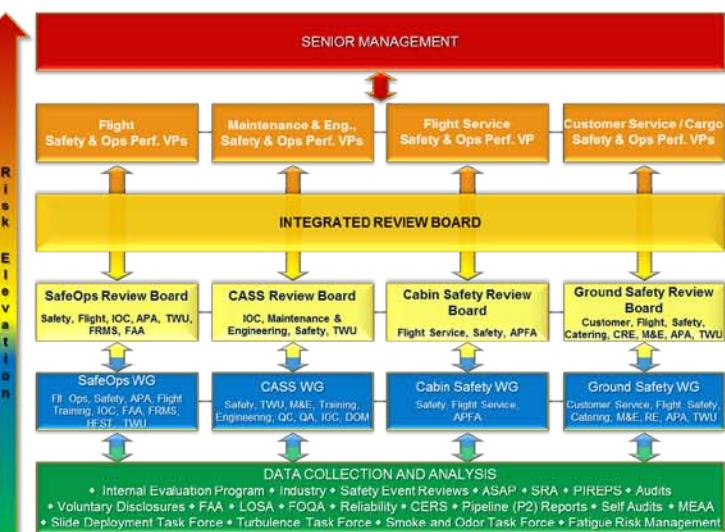
# American Airlines SMS Action and Review Process



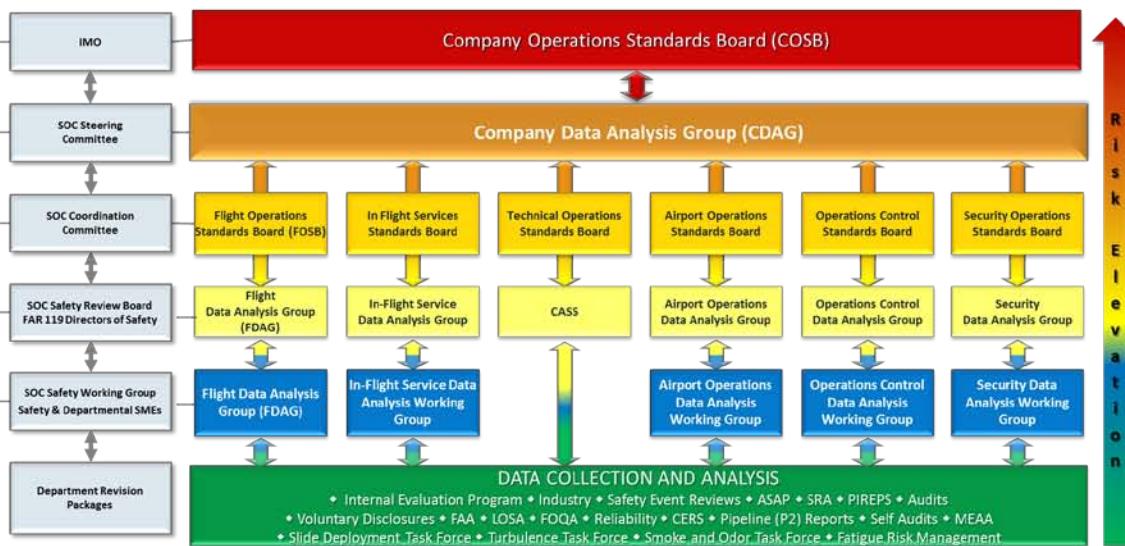
# The Value of SMS During Mergers

## Integrated SMS Action and Review Process

### American Airlines



### US Airways



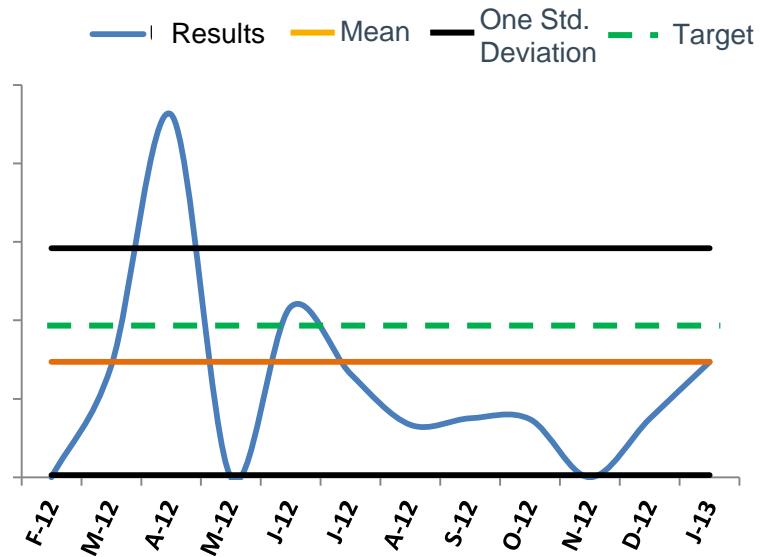
# Integrated KPIs

## Illustrative statistics

### American Airlines



### US Airways



Definition:

SMS provides a common framework to manage and promote safety across the industry

# Airlines For America (A4A)

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## A4A Airline Members:

- Alaska Airlines, Inc. (AS)
- American Airlines, Inc. (AA)
- Atlas Air, Inc. (5Y)
- Delta Air Lines, Inc. (DL)
- Federal Express Corporation (FX)
- Hawaiian Airlines (HA)
- JetBlue Airways Corp. (B6)
- Southwest Airlines Co. (WN)
- United Continental Holdings, Inc. (UA)
- UPS Airlines (5X)
- US Airways, Inc. (US)

# oneworld Alliance

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## SMS safety promotion

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- SMS has reinvigorated the discussion/management of aviation safety
- Methodology for assisting and mentoring both within and outside of these groups (regional carriers—United States--A4A,; worldwide—IATA) in SMS implementation (lessons learned, best practices, development of tools)
- Support of Industry data collection and analysis initiatives such as NASA ASRS, ASIAS or IATA STEADES, FDX GSIC initiatives
- Support of the Commercial Aviation Safety Team (CAST and ECAST) process and initiatives
- Bow-Tie Analysis Team, Just Culture, KPIs

# IATA Safety Group

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**AIR FRANCE**  
**AMERICAN AIRLINES**  
**BRITISH AIRWAYS**  
**CARGOLUX S.A.**  
**CATHAY PACIFIC**  
**CHINA SOUTHERN AIRLINES**  
**COPA AIRLINES**  
**EMIRATES**  
**JAPAN AIRLINES**  
**QANTAS AIRWAYS**  
**SOUTH AFRICAN AIRWAYS**  
**VIRGIN AUSTRALIA**

