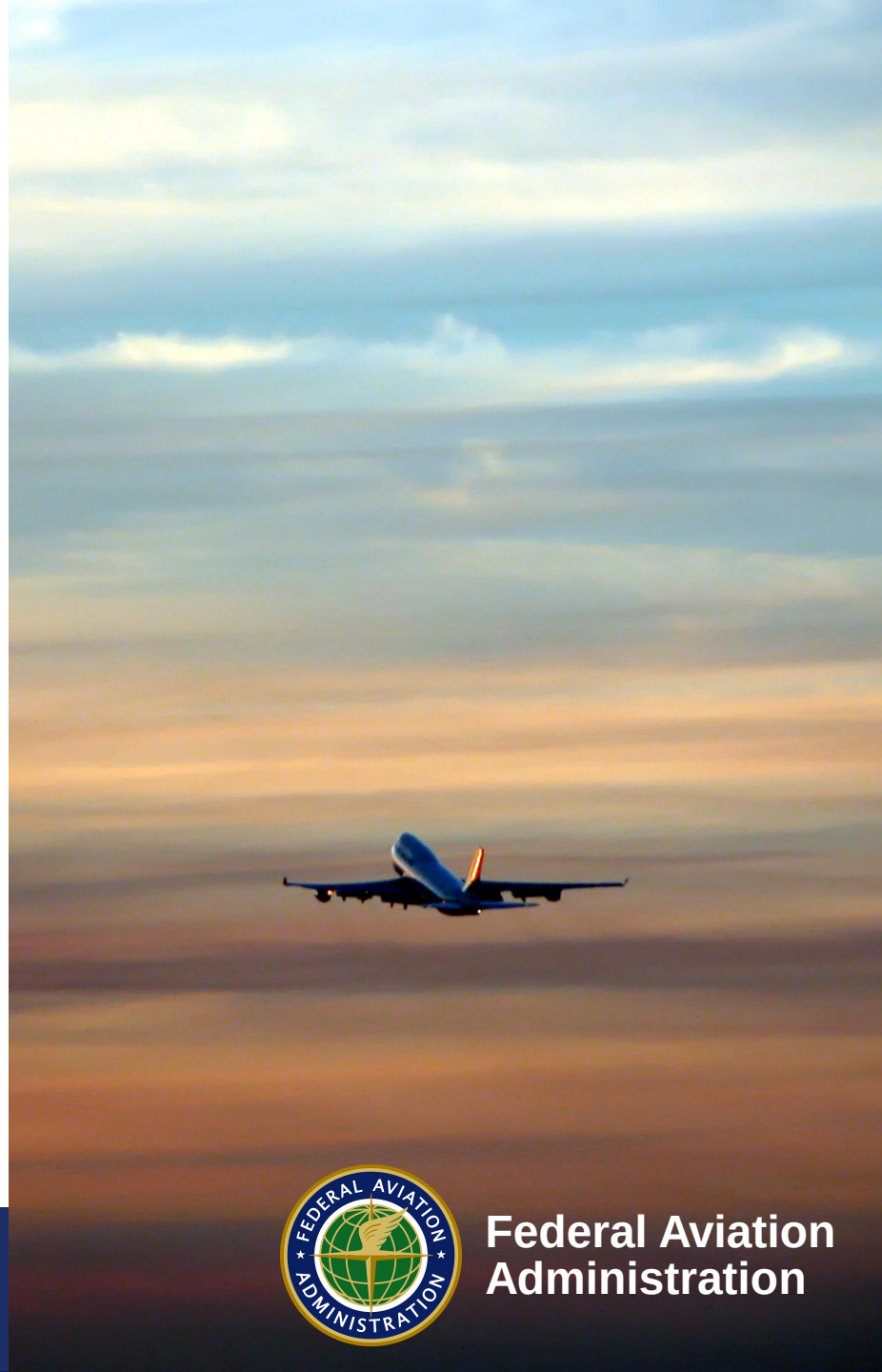
Runway Safety

CAA Perspective



Federal Aviation Administration

October 8, 2018

Why Are We Here?

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- Share information about the FAA Runway Safety Program and best practices
- Discuss critical runway safety mitigations and effective runway safety surveillance
- Encourage knowledge and resource sharing among safety professionals in Panama

Federal Aviation Administration

Enhancing Runway Safety – An Integrated Approach

Enhancing Runway Safety – An Integrated Approach

Multidisciplinary approach:

Enhancing Runway Safety – An Integrated Approach

Multidisciplinary approach:

- Regulators

Enhancing Runway Safety – An Integrated Approach

Multidisciplinary approach:

- Regulators
- Aircraft Operators

Enhancing Runway Safety – An Integrated Approach

Multidisciplinary approach:

- Regulators
- Aircraft Operators
- Air Navigation Service Providers

Enhancing Runway Safety – An Integrated Approach

Multidisciplinary approach:

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- Aerodrome Operators

Enhancing Runway Safety – An Integrated Approach

Multidisciplinary approach:

- Regulators
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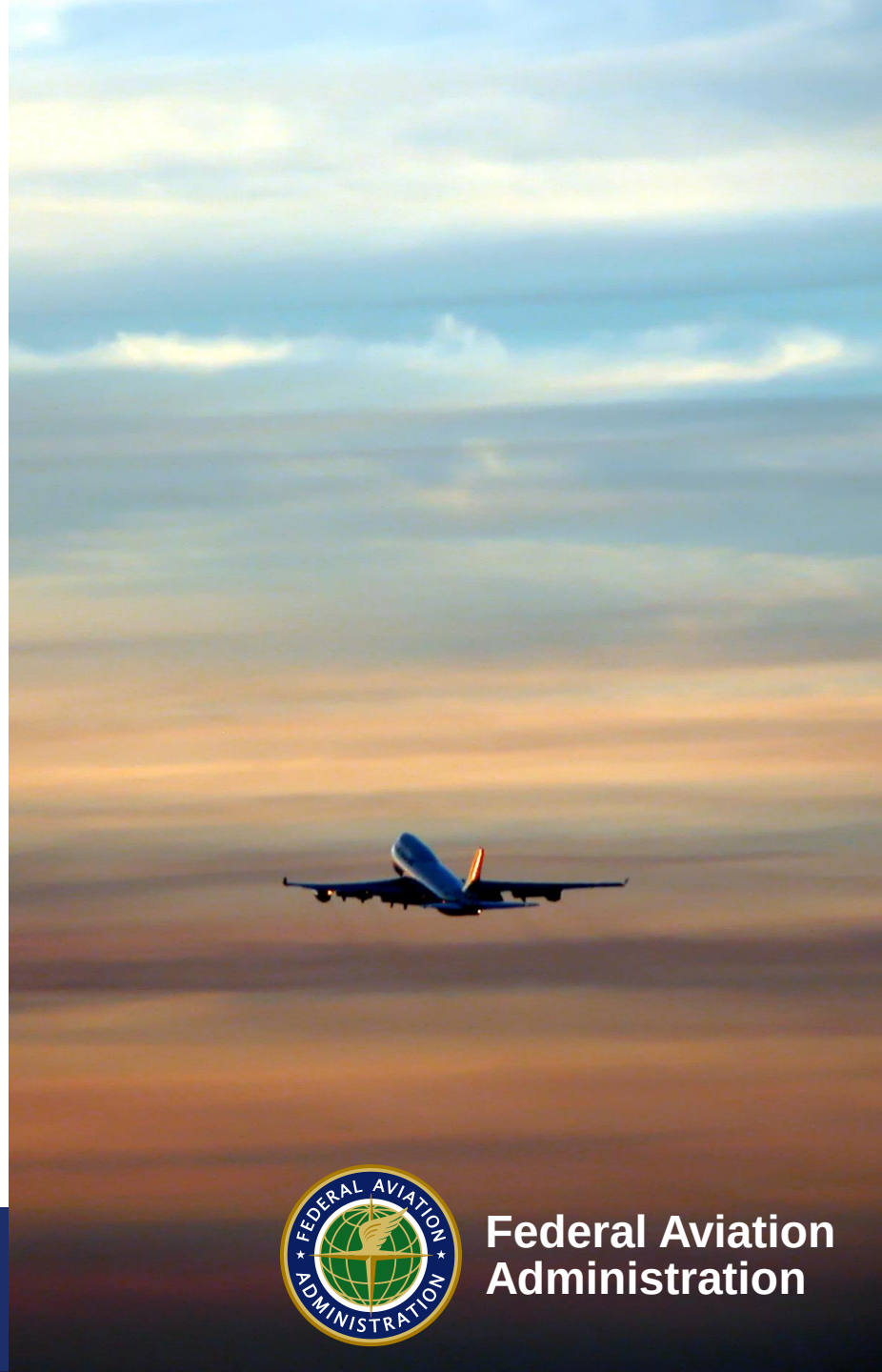
- Aerodrome Operators
- Aircraft Manufacturers

Safety Management System Fundamentals

An Overview

Federal Aviation Administration

October 8, 2018




2TON
KEEP CLEAR

What is SMS?

What is SMS?

- SMS implementation represents a transition from the legacy focus on compliance with requirements to performance-based safety improvement

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  - An SMS should be appropriate to a service provider's size and operational complexity


WN 33R


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Why SMS?

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    - For each hazardous condition, many unreported unsafe acts or circumstances might exist

SMS Components

SMS Components

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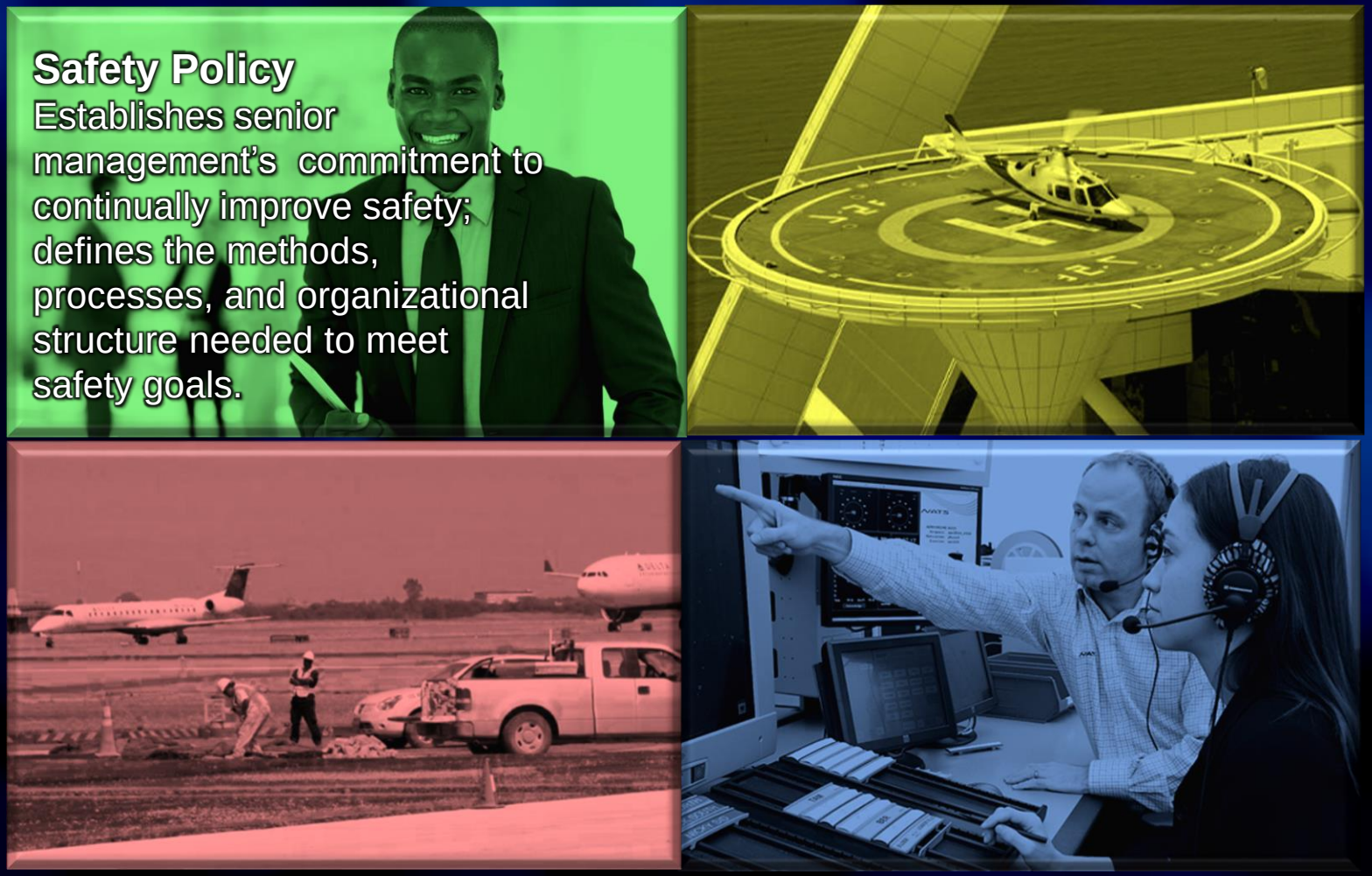

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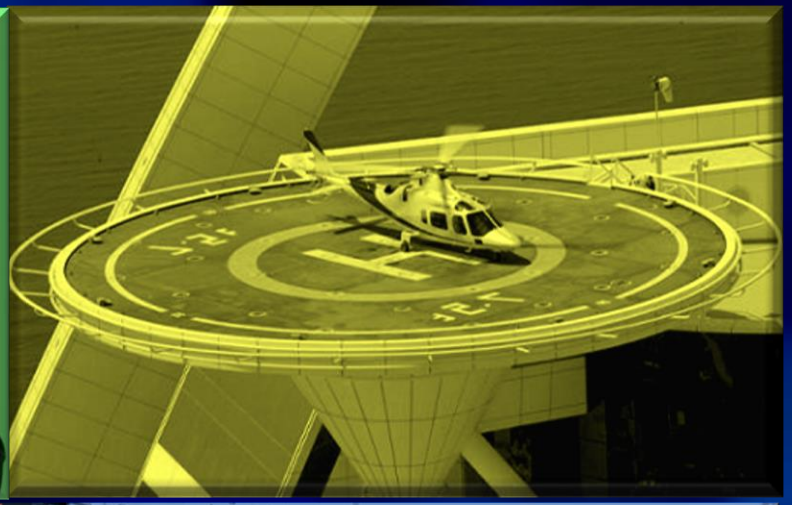
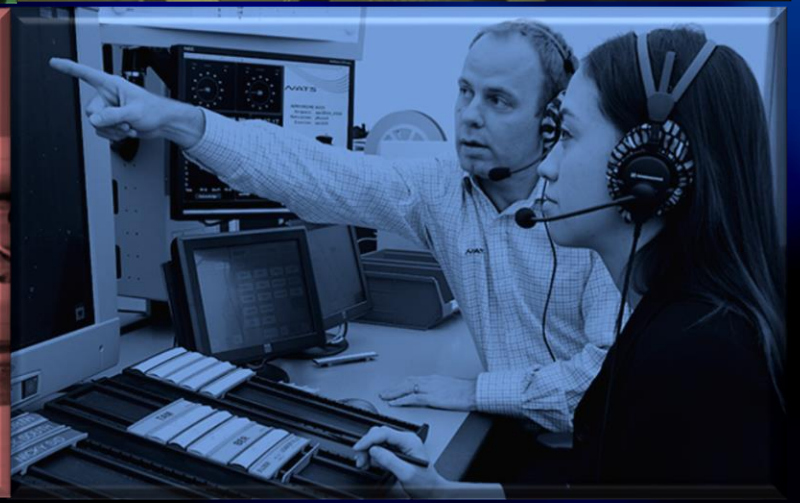
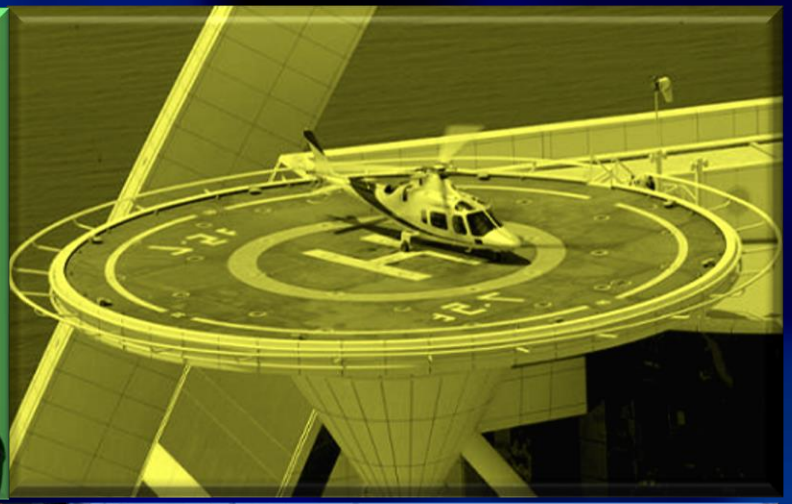
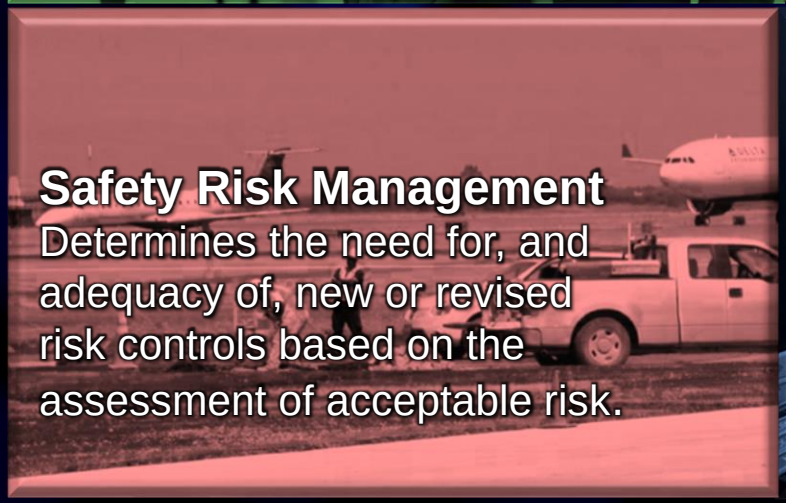




SMS Components

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





Safety Risk Management
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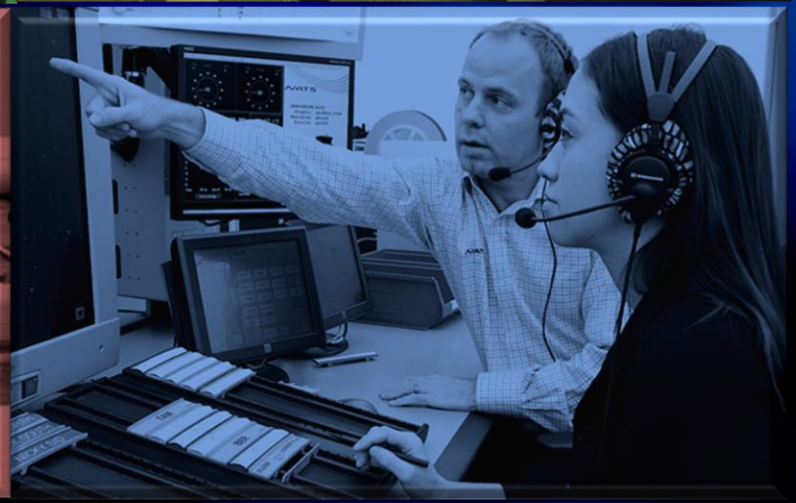

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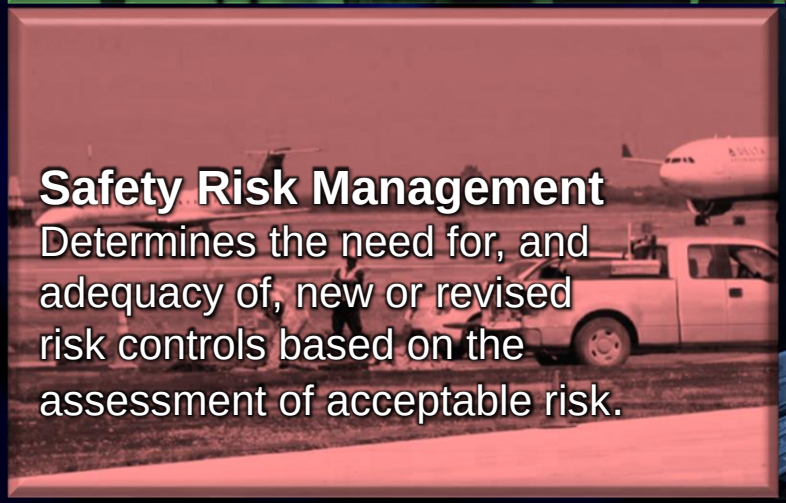

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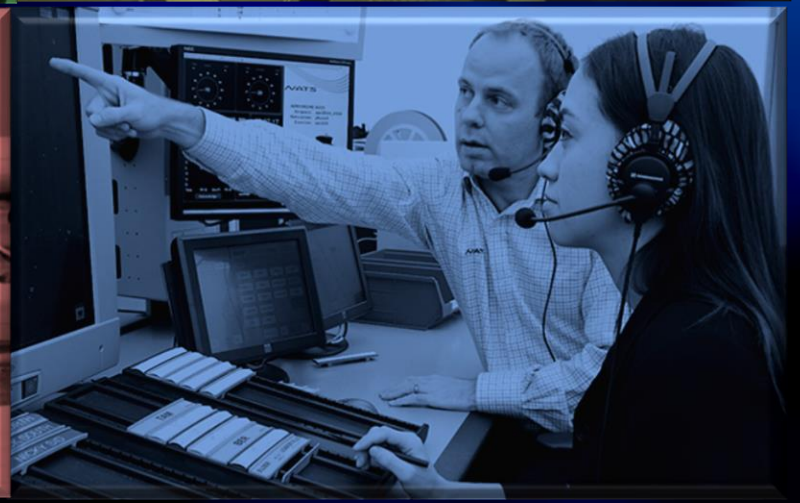

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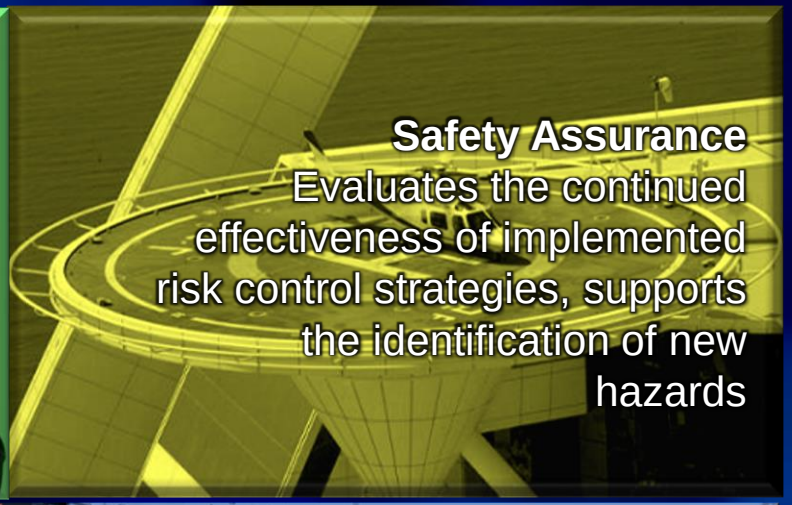
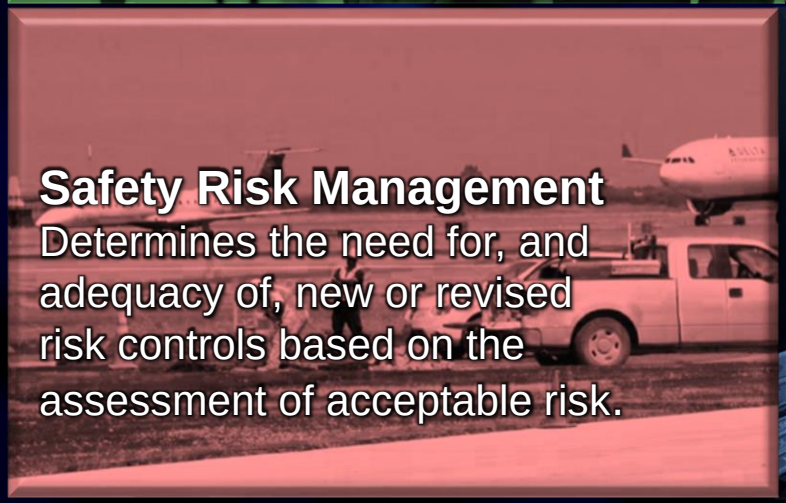


Safety Assurance
Evaluates the continued effectiveness of implemented risk control strategies, supports the identification of new hazards



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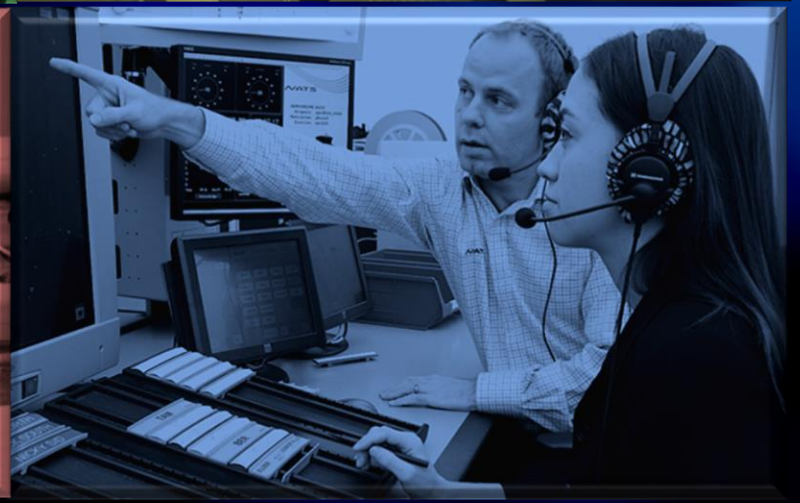

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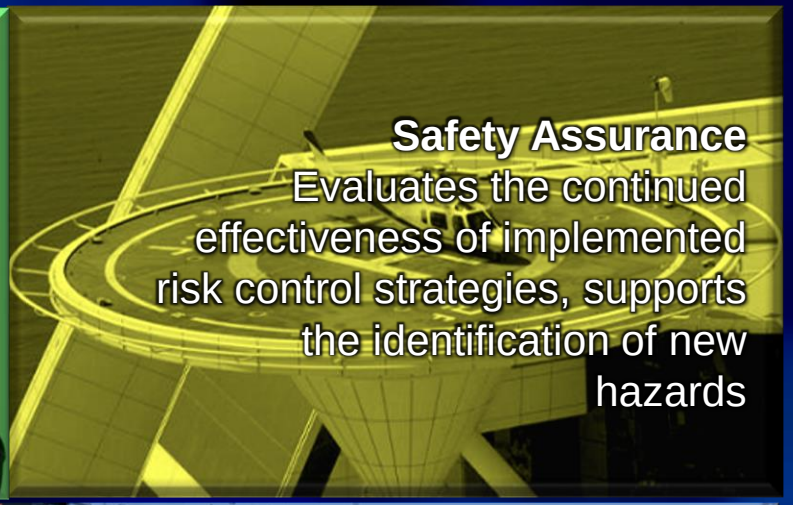

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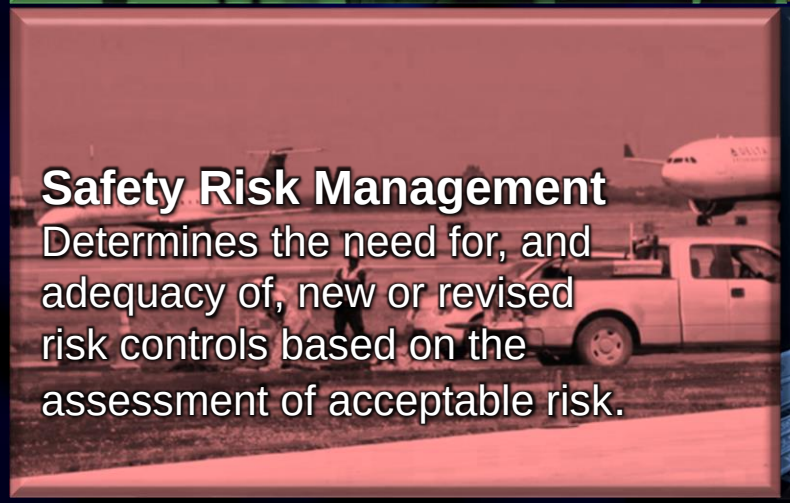

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Safety Promotion

SMS Components

SRM: Key Concepts

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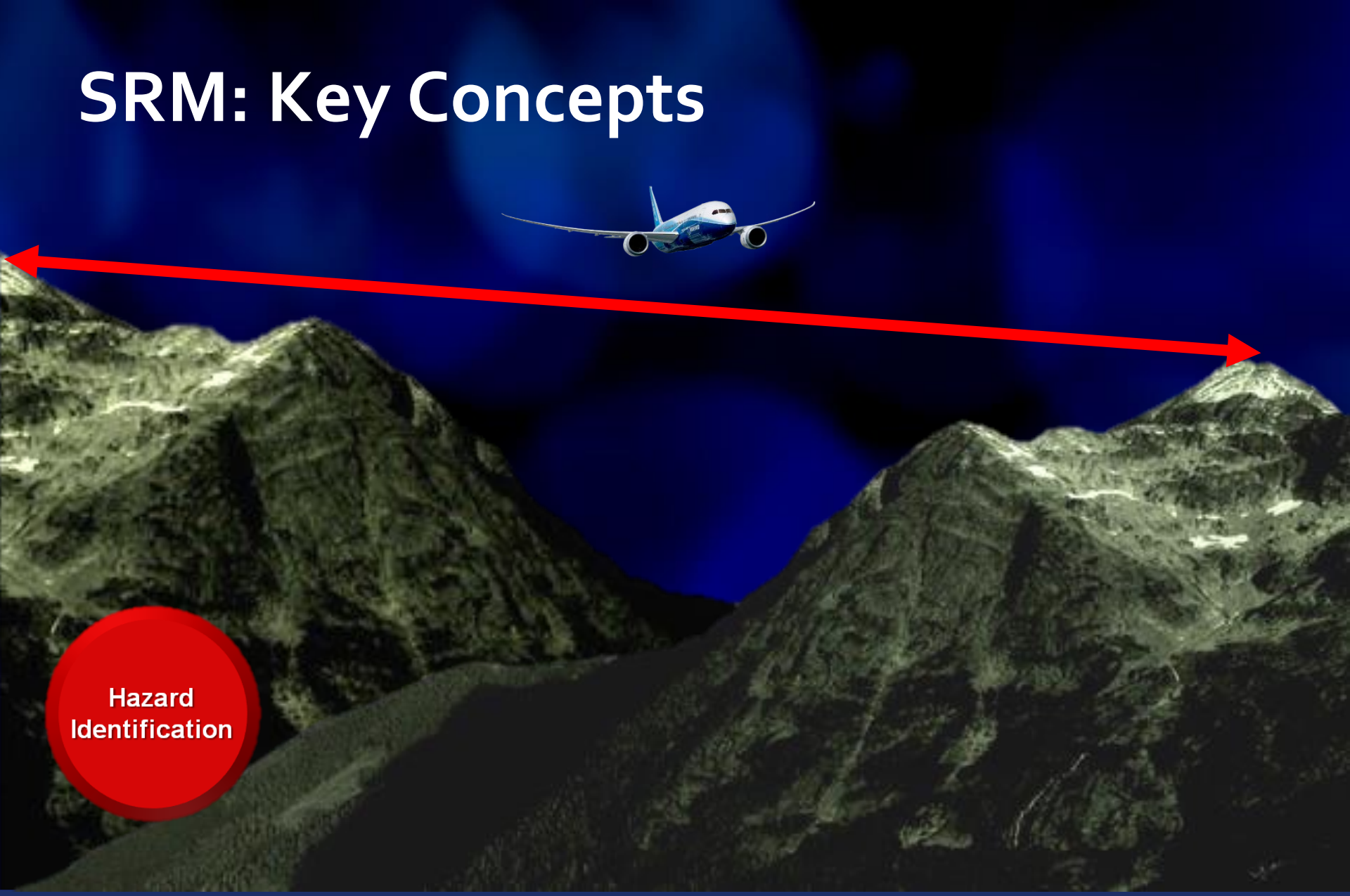

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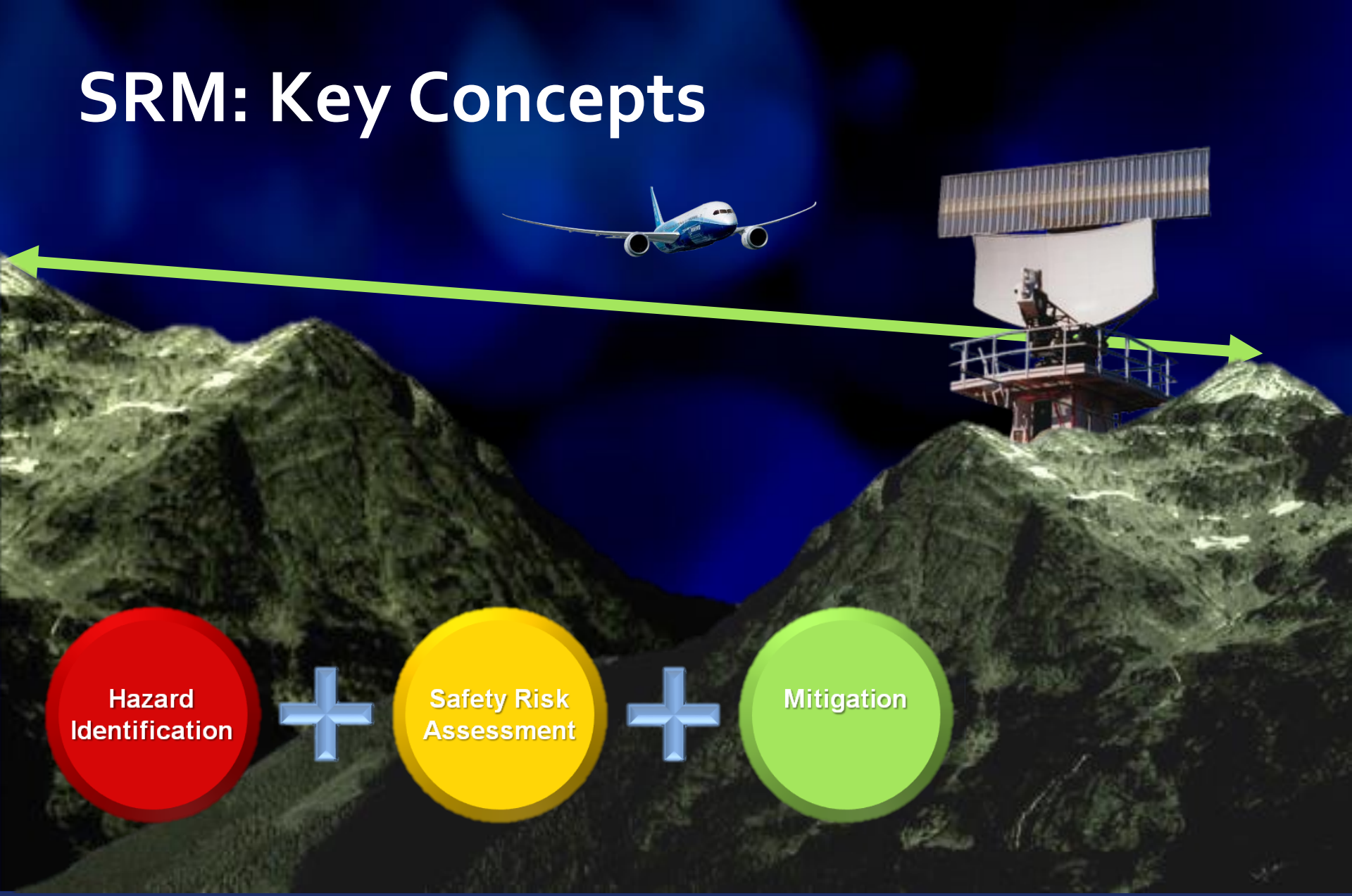

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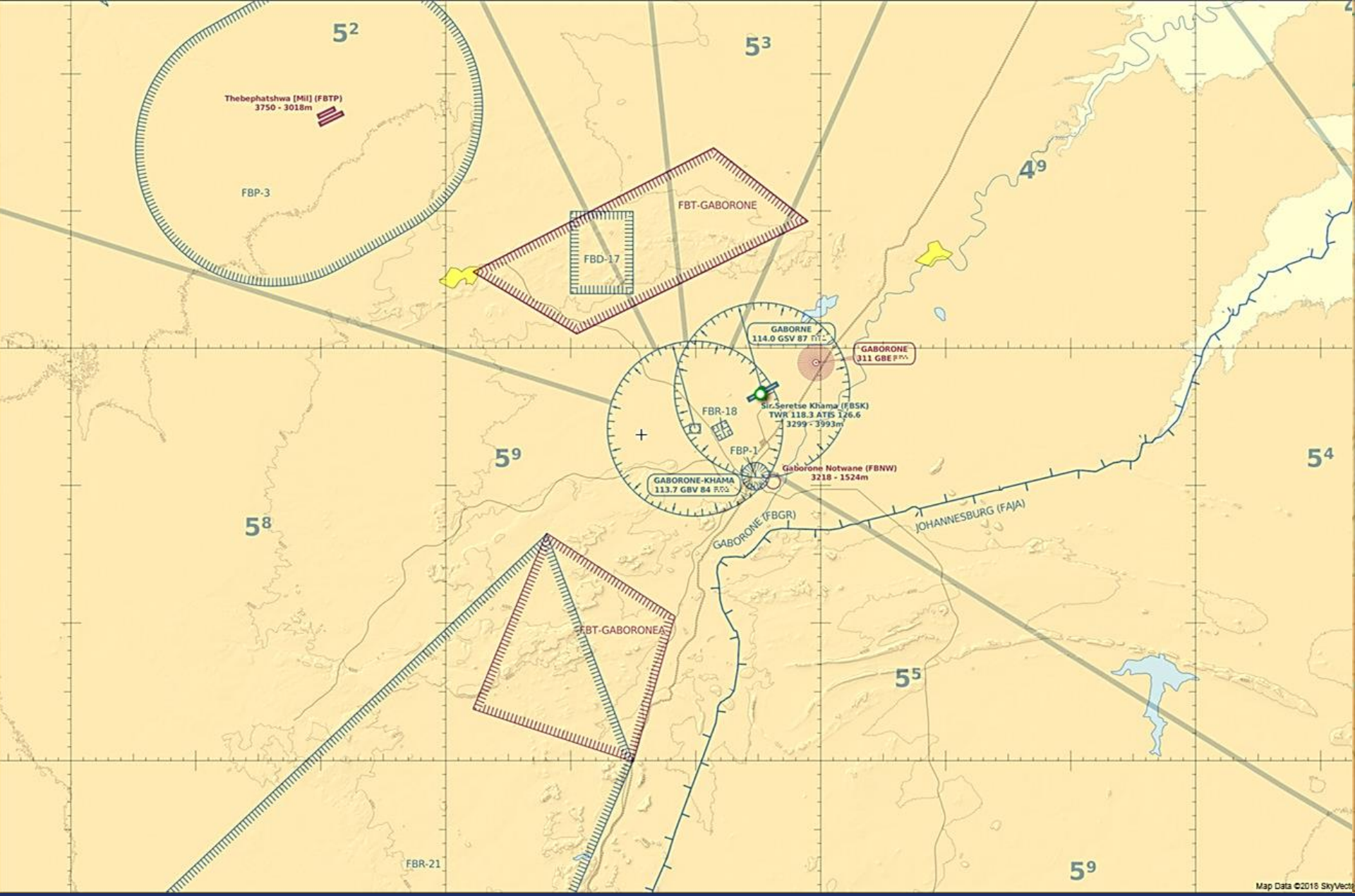
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Thebephatshwa [Mil] (FBTP)
3750 - 3018m
FBP-3
FBT-GABORONE
FBD-17
GABORNE
114.0 GSV 87
GABORONE
311 GBE
Sir Seretse Khama (FBSK)
TWR 118.3 ATIS 126.6
3299 - 3993m
FBR-18
FBP-1
Gaborone Notwane (FBNW)
3218 - 1524m
GABORONE-KHAMA
113.7 GBV 84
GABORONE (FBGR)
JOHANNESBURG (FAJA)
FBT-GABORONEA
FBR-21
Map Data ©2016 SkyVect

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  - Compliance with the approved SMS is required for all changes

SRM: Roles and Responsibilities

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  - If approval is withheld, the regulator must advise the service provider of the rationale and identify the information necessary to issue an approval

Roles and Responsibilities

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- **Service providers** are responsible for developing and implementing Safety Management Systems according to applicable requirements

Federal Aviation Administration

Challenges for Regulators

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  - Addressing resource constraints

FAA Example: SMS Policy

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ICAO SARPS

- Annex 11 (ATS)

Annex 19 (Safety Management)

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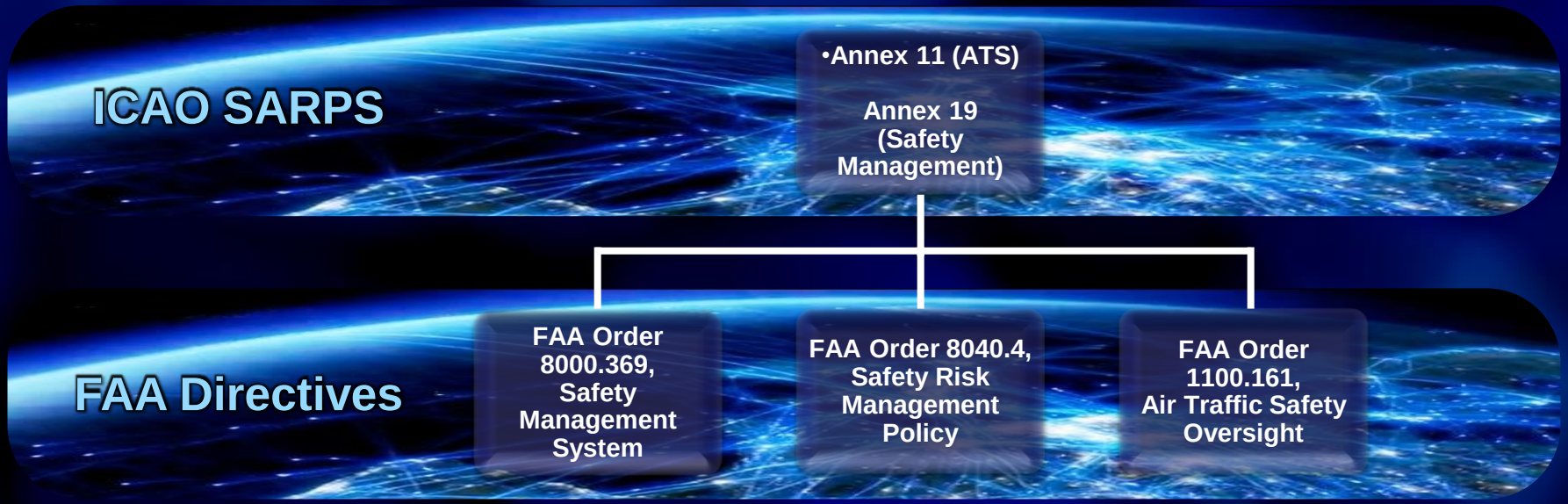
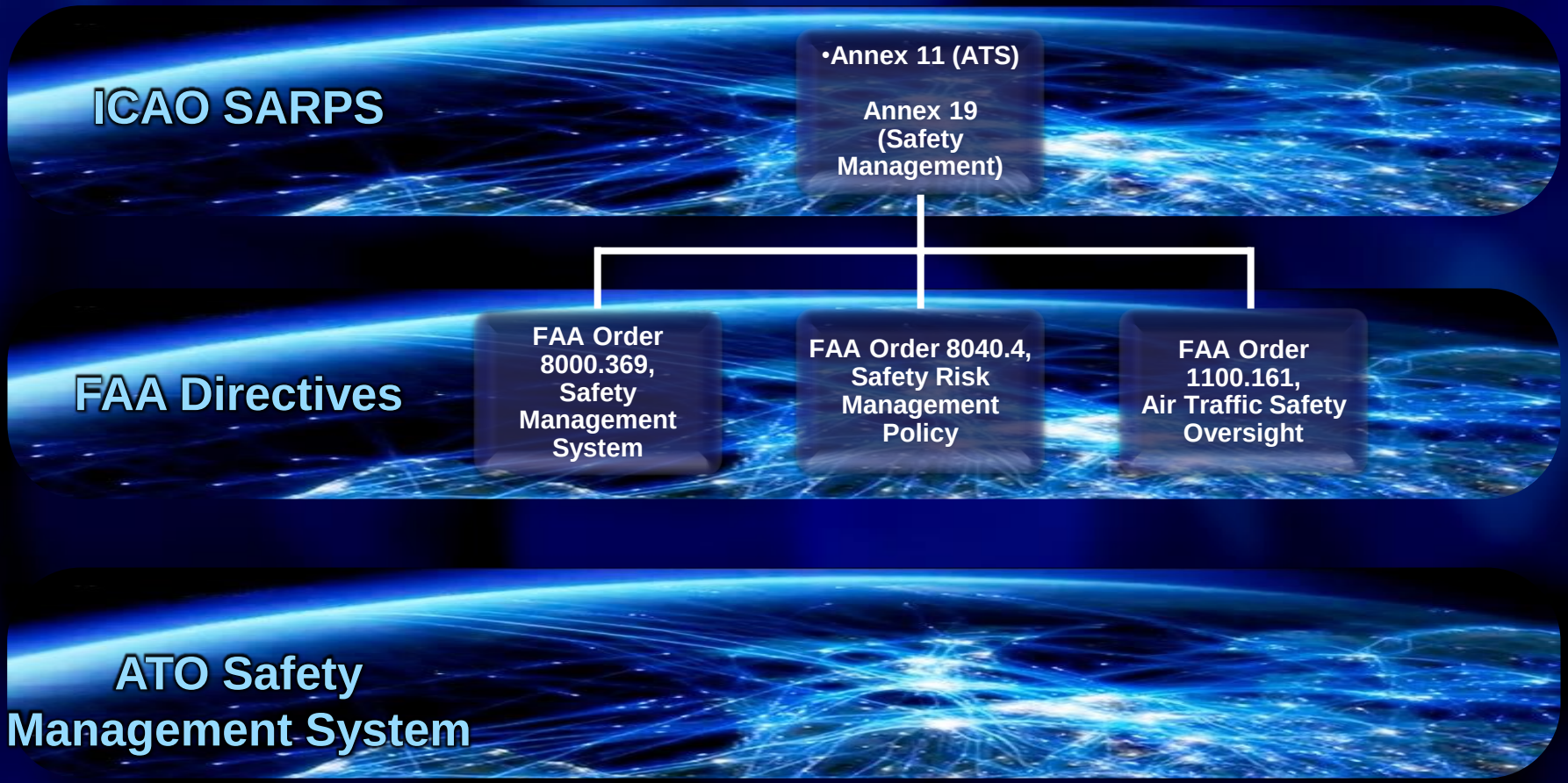


FAA Example: SMS Policy



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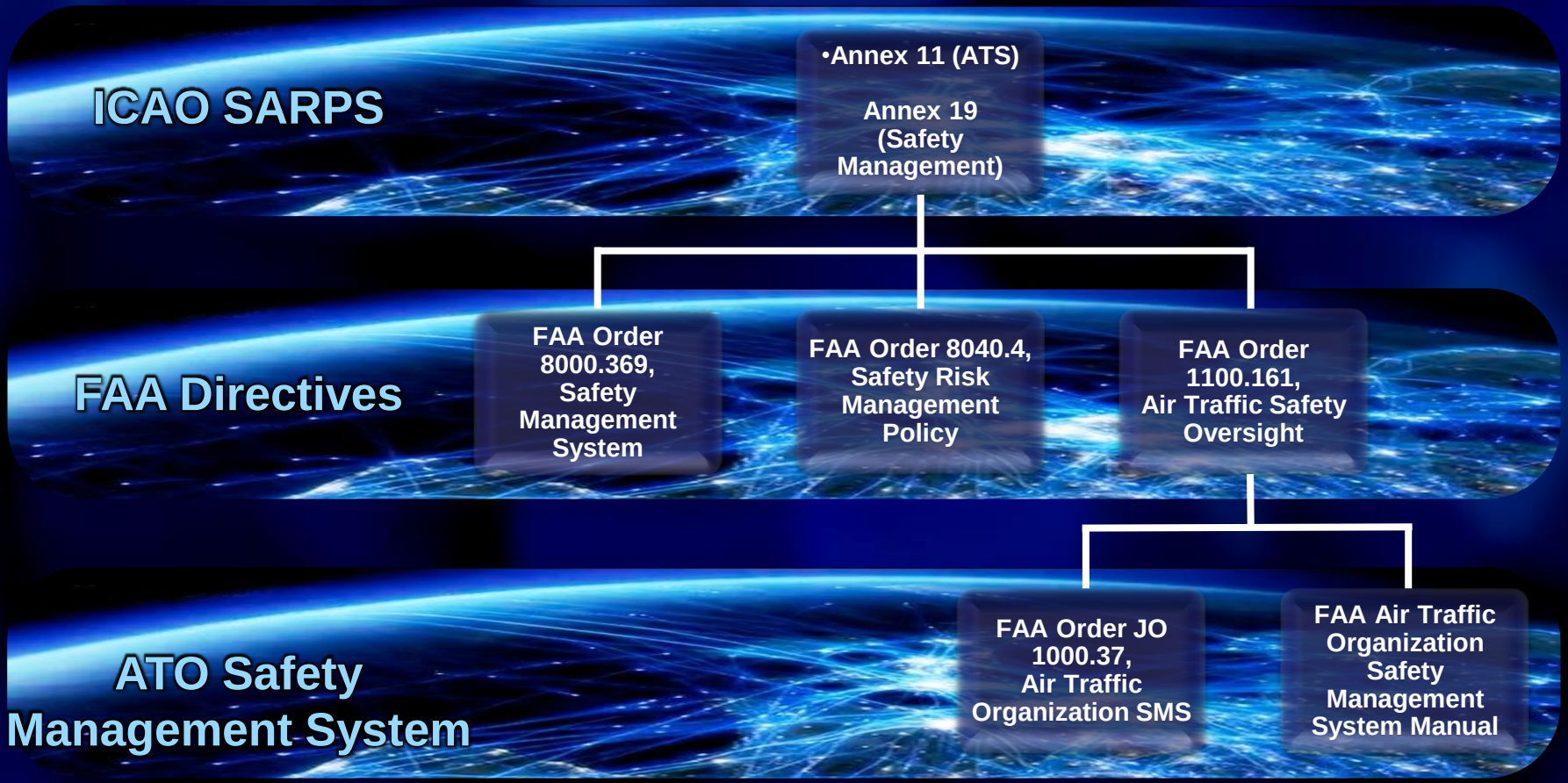
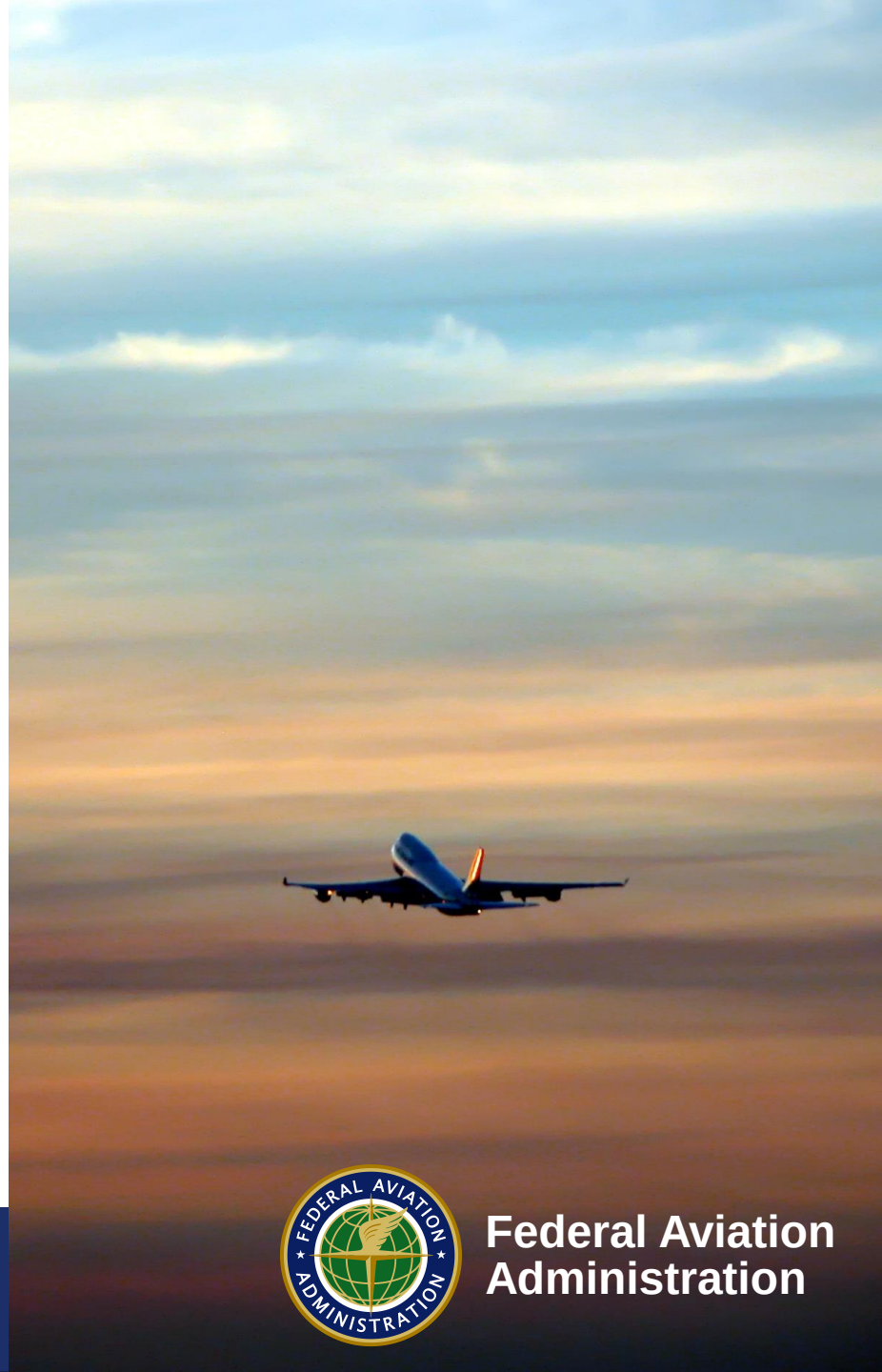


Policy

FAA Runway Safety Program

Federal Aviation Administration

October 8, 2018

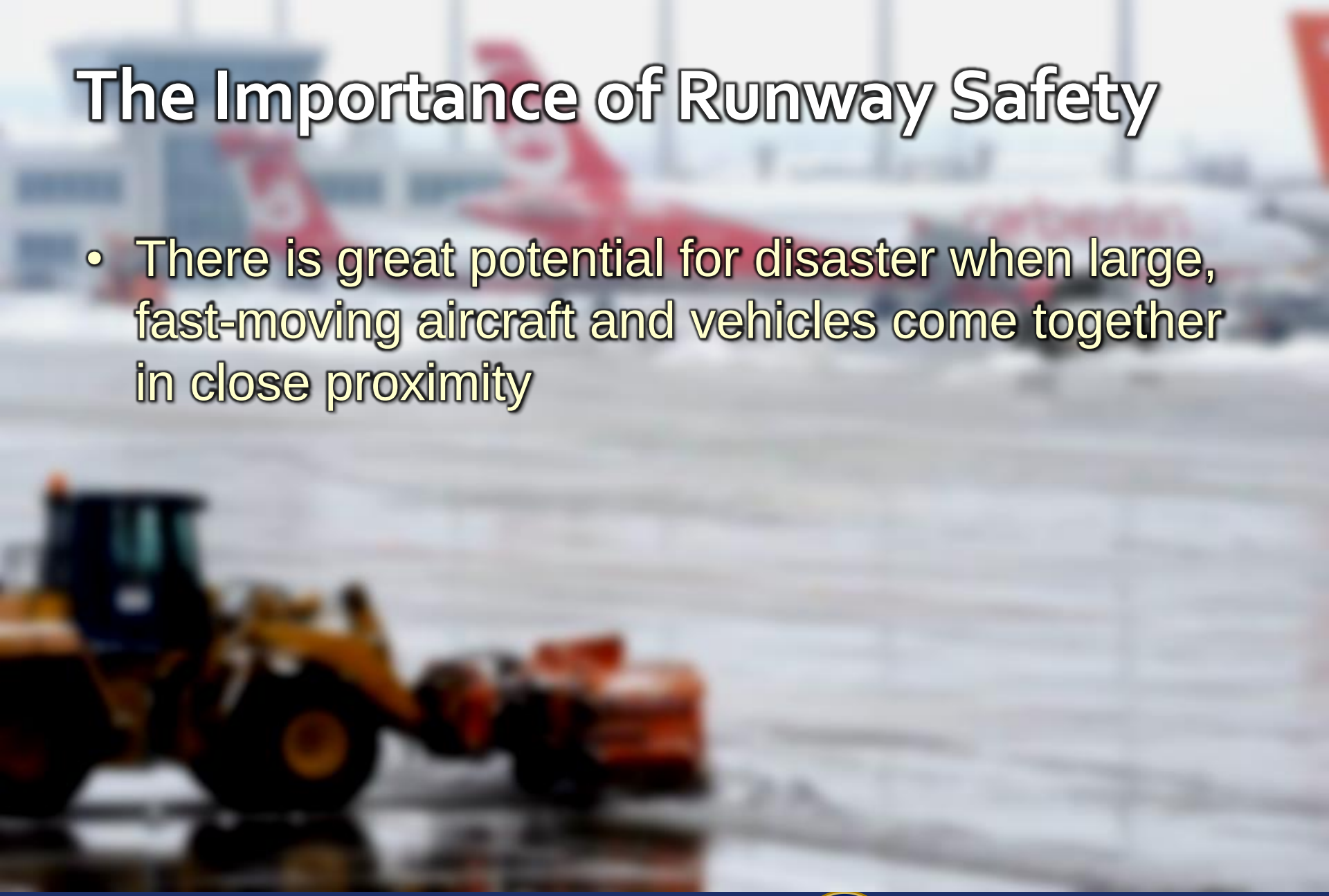



airberlin

The Importance of Runway Safety

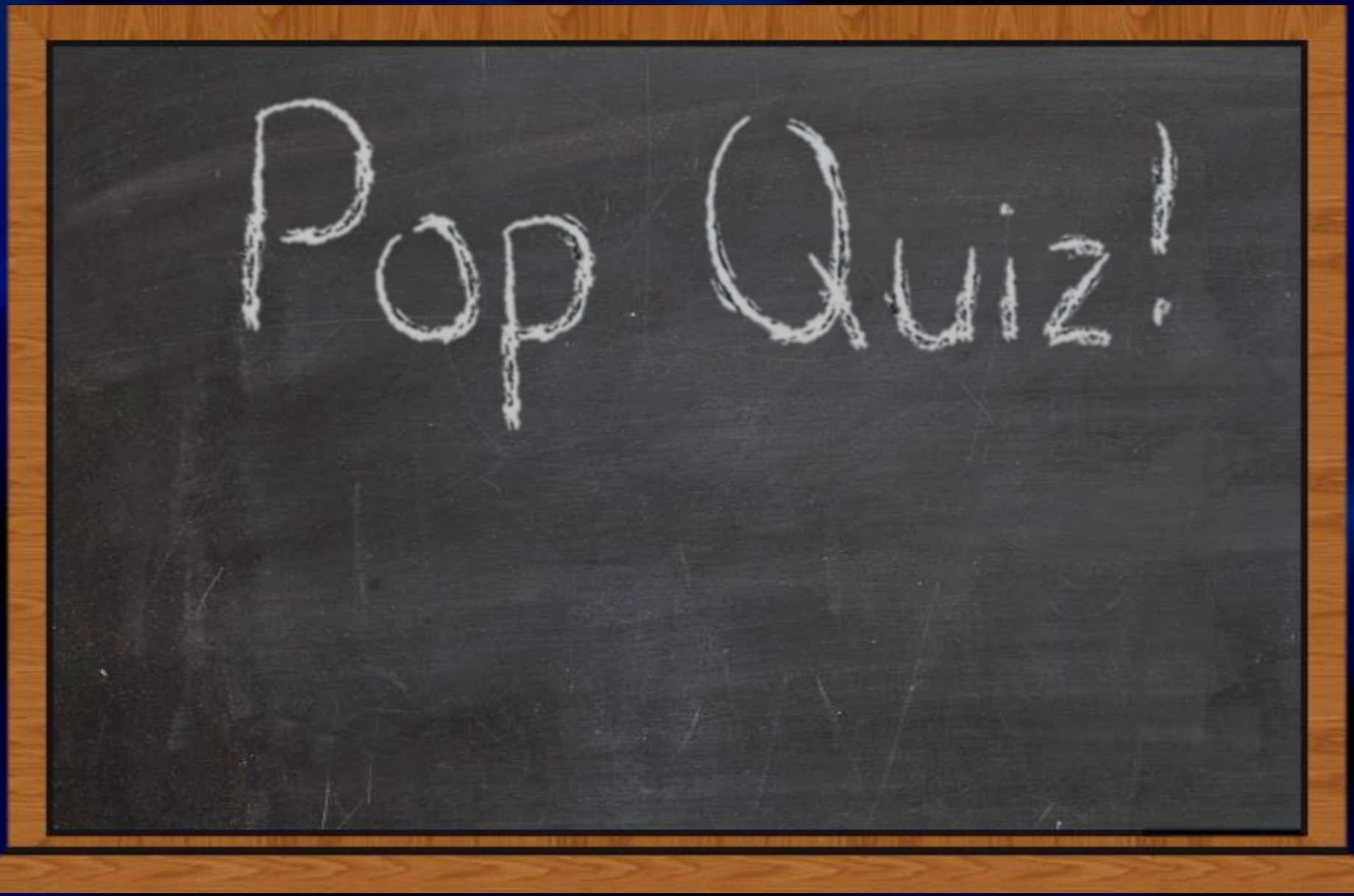
The Importance of Runway Safety

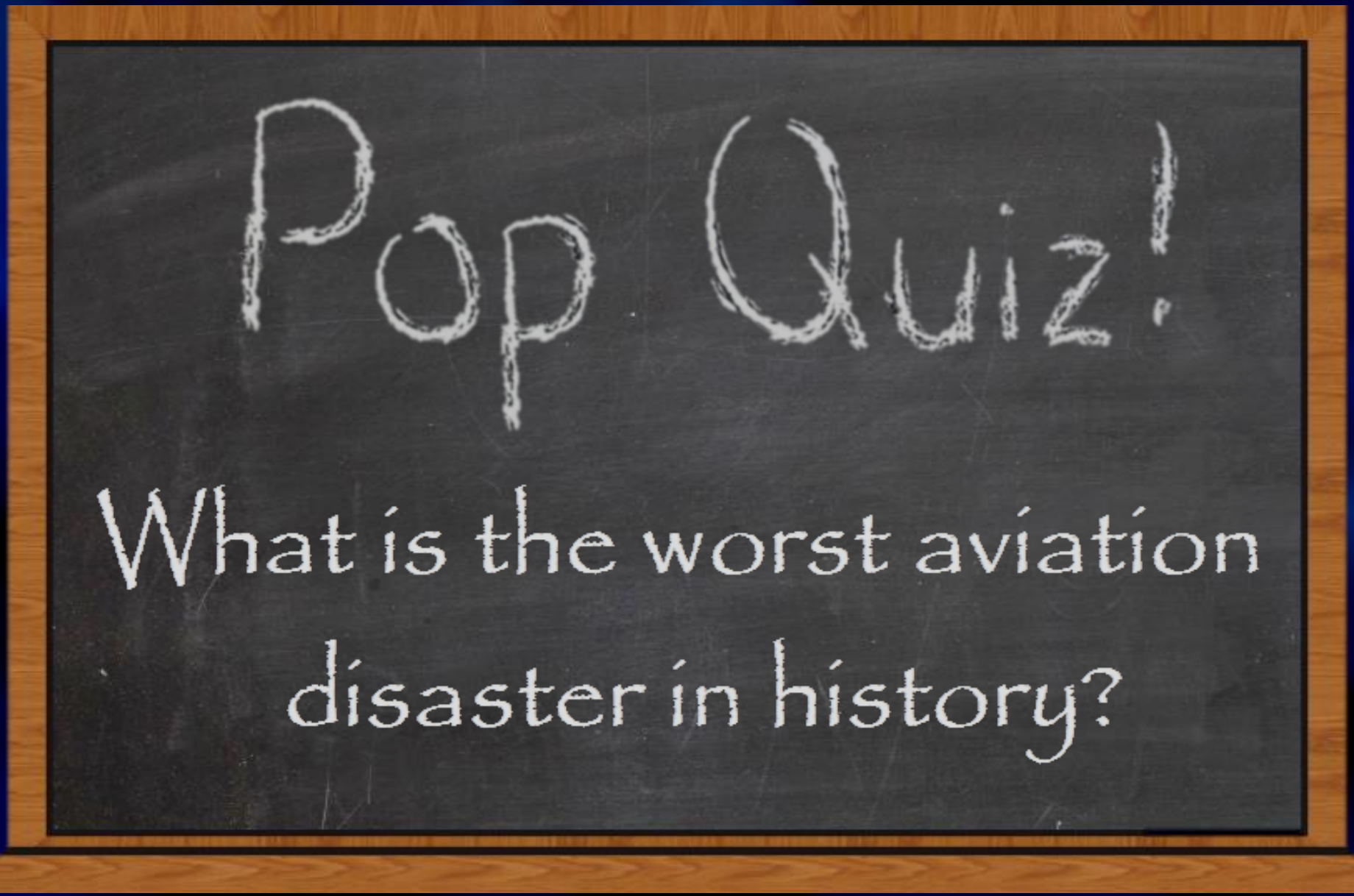
- There is great potential for disaster when large, fast-moving aircraft and vehicles come together in close proximity



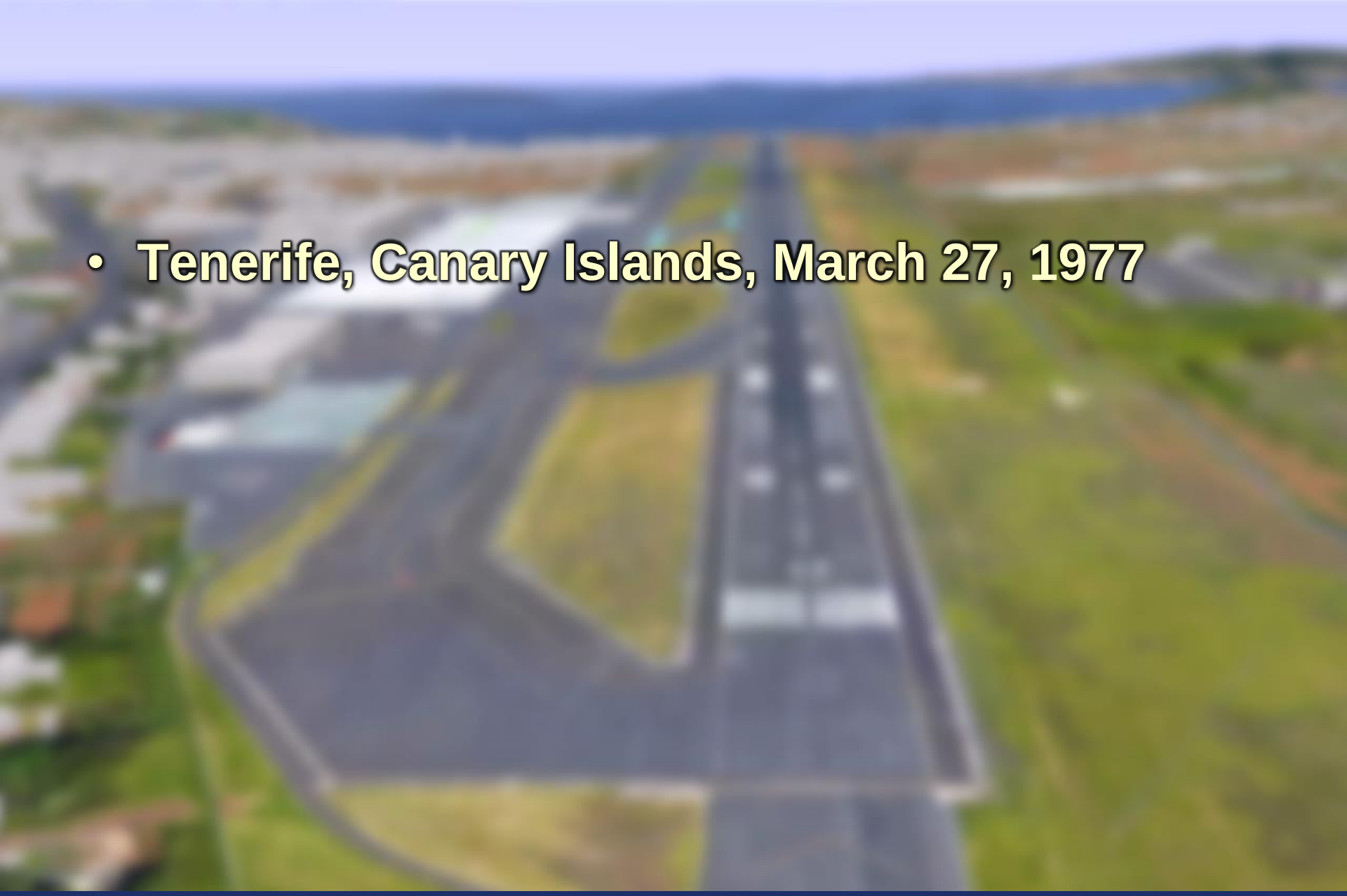
The Importance of Runway Safety

- There is great potential for disaster when large, fast-moving aircraft and vehicles come together in close proximity
- Complexities of operating on an aerodrome further identify the need for complete situational awareness


Pop Quiz!


Pop Quiz!
What is the worst aviation disaster in history?


12
12



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https://www.youtube.com/watch?v=kjLrZ2SDDaU

FAA at a Glance

FAA at a Glance

- **FAA Mission: Provide the safest, most efficient aerospace system in the world**

FAA at a Glance

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FAA at a Glance

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- FAA Air Traffic Services are part of the aviation authority

Federal Aviation Administration

Runway Safety Program Key Principles

Federal Aviation Administration

Runway Safety Program Key Principles

- **Based on the pillars of Safety Management system (SMS)**

Runway Safety Program Key Principles

- Based on the pillars of Safety Management system (SMS)
- Creates awareness and cooperation among all stakeholders

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- Based on the pillars of Safety Management system (SMS)
- Creates awareness and cooperation among all stakeholders
- Educates aerodrome users on runway safety risks
- Espouses *Safety Culture*

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

National Policy

ORDER 8000.369B

Effective Date: 03/18/16

SUBJ: Safety Management System

1. This order establishes the Safety Management System (SMS) policy for the Federal Aviation Administration (FAA) and requirements for FAA organizations incorporating SMS and/or International Civil Aviation Organization (ICAO) State Safety Program (SSP) frameworks to form the overall FAA SMS. Specifically, this order:

   a. Furthers safety management by evolving to a more process-oriented system safety approach with an emphasis on Safety Risk Management (SRM) and Safety Assurance.

   b. Sets forth basic management principles to guide the FAA in safety management and safety oversight activities.

   c. Requires adopting a common approach to implementing and maturing an integrated SMS, including fostering a positive safety culture and other attributes as applicable.

   d. Defines the roles and responsibilities of the FAA organizations, FAA SMS Executive Council, and FAA SMS Committee regarding safety management.

2. This order applies to the following Lines of Business (LOB) and Staff Offices: Air Traffic Organization (ATO), Aviation Safety Organization (AVS), Office of Airports (ARP), Office of Commercial Space Transportation (AST), the Office of the Next Generation Air Transportation System (ANG), and the Hazardous Materials Safety Program in the Office of Security and Hazardous Materials Safety (ASH). This order is written to allow for application to other FAA organizations as deemed appropriate by the Administrator.

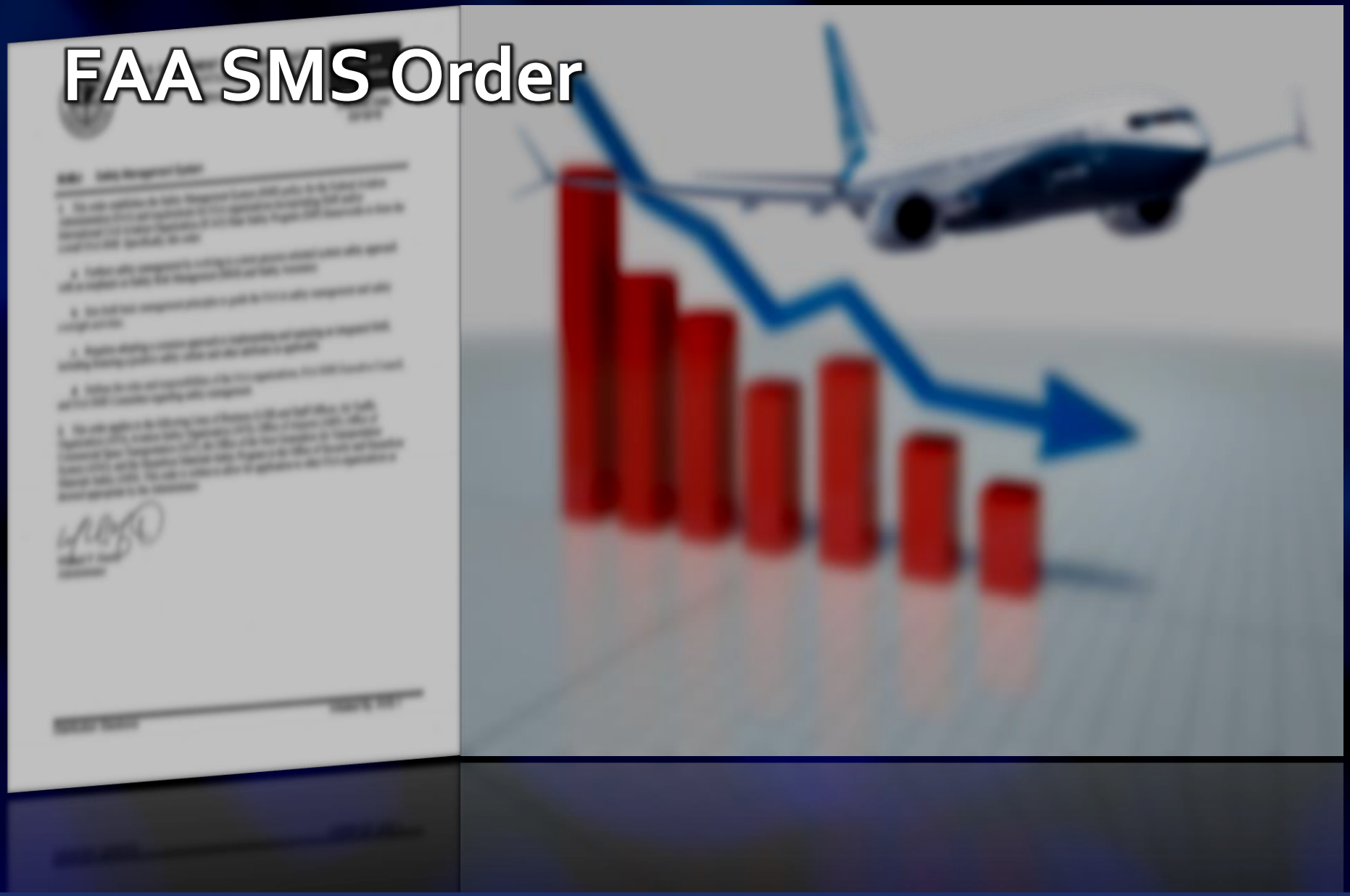
Michael P. Huerta
Administrator

Distribution: Electronic

Initiated By: AVS-1

Federal Aviation Administration

FAA SMS Order



Federal Aviation Administration

FAA SMS Order

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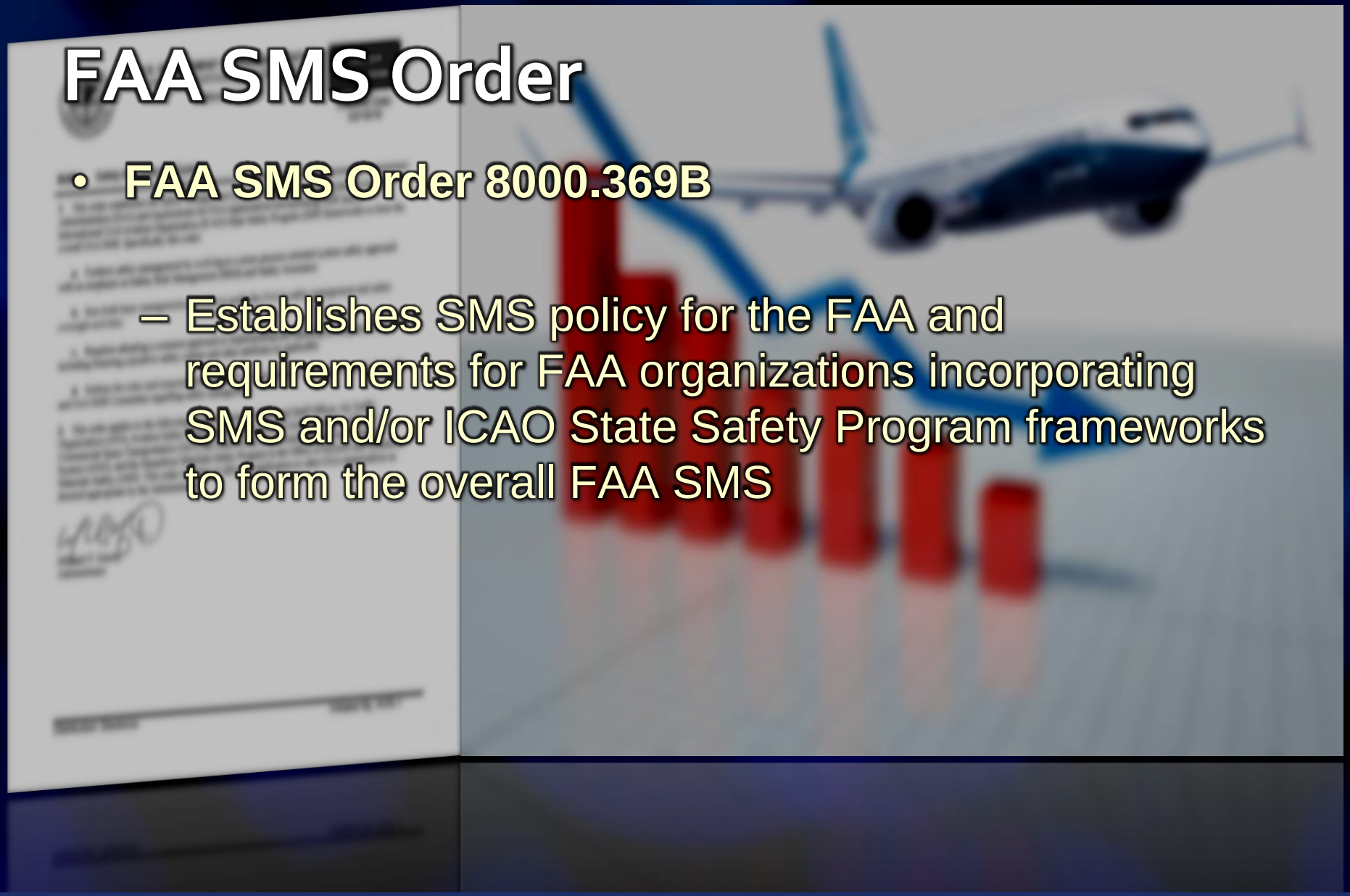

Federal Aviation Administration

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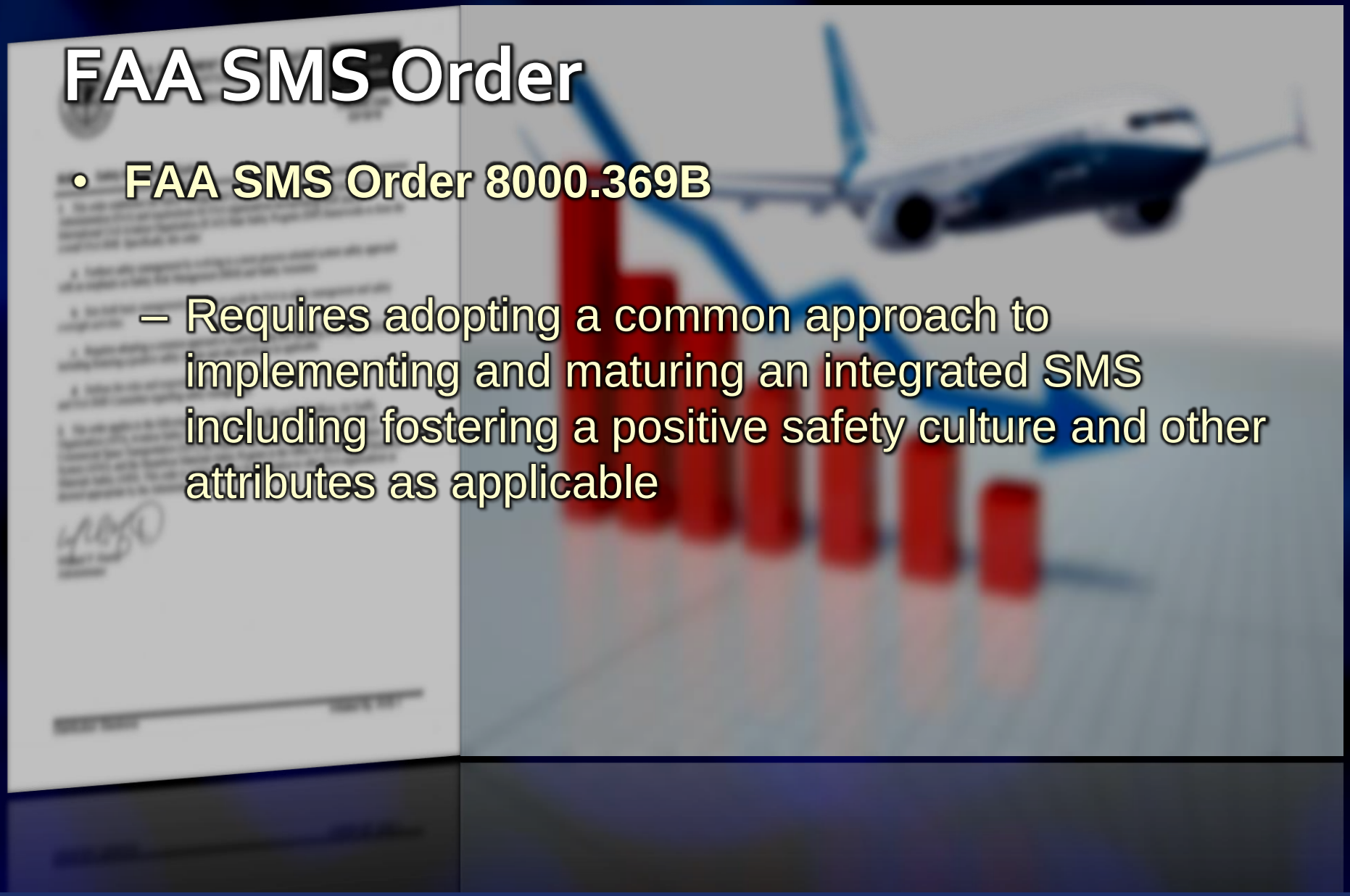

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

ORDER 7050.1B

Effective Date:
11/07/13

SUBJ: Runway Safety Program

1. This order prescribes the Federal Aviation Administration (FAA) Runway Safety Program. This directive establishes policy, assigns responsibility, and delegates authority for ensuring compliance with this order within each organization.

2. The Air Traffic Organization (ATO) expanded the scope of the Runway Safety Program to include the prevention of runway excursions.

3. The ATO Vice President for Safety and Technical Training may periodically evaluate national and regional runway safety programs. Evaluations will focus on compliance with this order and the effectiveness of the programs in meeting objectives, strategies, and initiatives outlined in FAA's Strategic Plan and the National Runway Safety Plan.

4. Our long-term goal is to improve runway safety by decreasing the number and severity of runway incursions, excursions, and other surface incidents.

Michael P. Huerta
Administrator

Distribution: Electronic

Initiated By: AJI-0
ATO Safety & Technical Training

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

ORDER 7050.1B

Effective Date:
11/07/13

SUBJ: Runway Safety Program

1. This order prescribes the Federal Aviation Administration (FAA) Runway Safety Program. This directive establishes policy, assigns responsibility, and delegates authority for ensuring compliance with this order within each organization.

2. The Air Traffic Organization (ATO) expanded the scope of the Runway Safety Program to include the prevention of runway excursions.

3. The ATO Vice President for Safety and Technical Training may periodically evaluate national and regional runway safety programs. Evaluations will focus on compliance with this order and the effectiveness of the programs in meeting objectives, strategies, and initiatives outlined in FAA's Strategic Plan and the National Runway Safety Plan.

4. Our long-term goal is to improve runway safety by decreasing the number and severity of runway incursions, excursions, and other surface incidents.

Michael P. Huerta
Administrator

Distribution: Electronic

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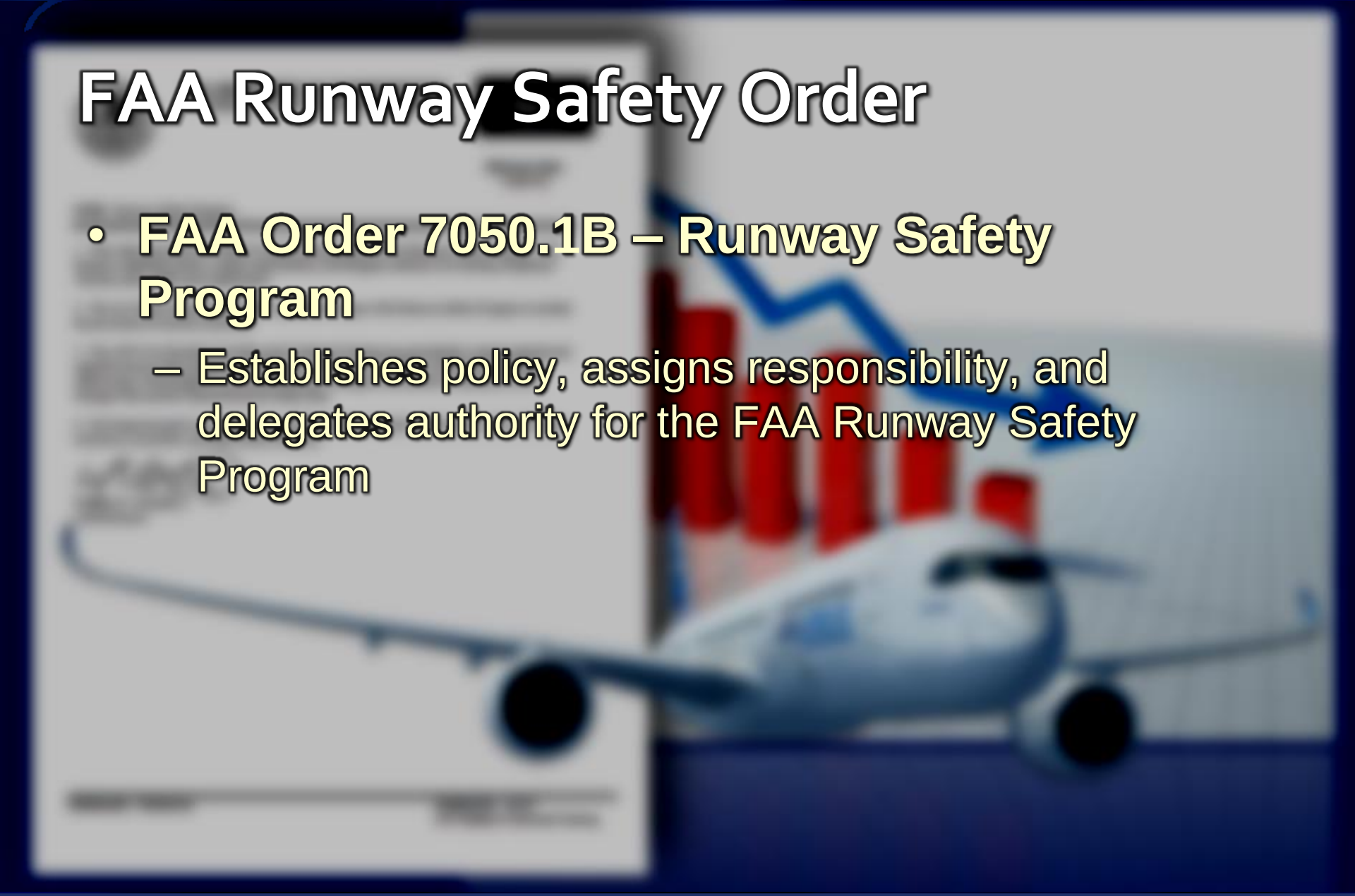
FAA Runway Safety Order

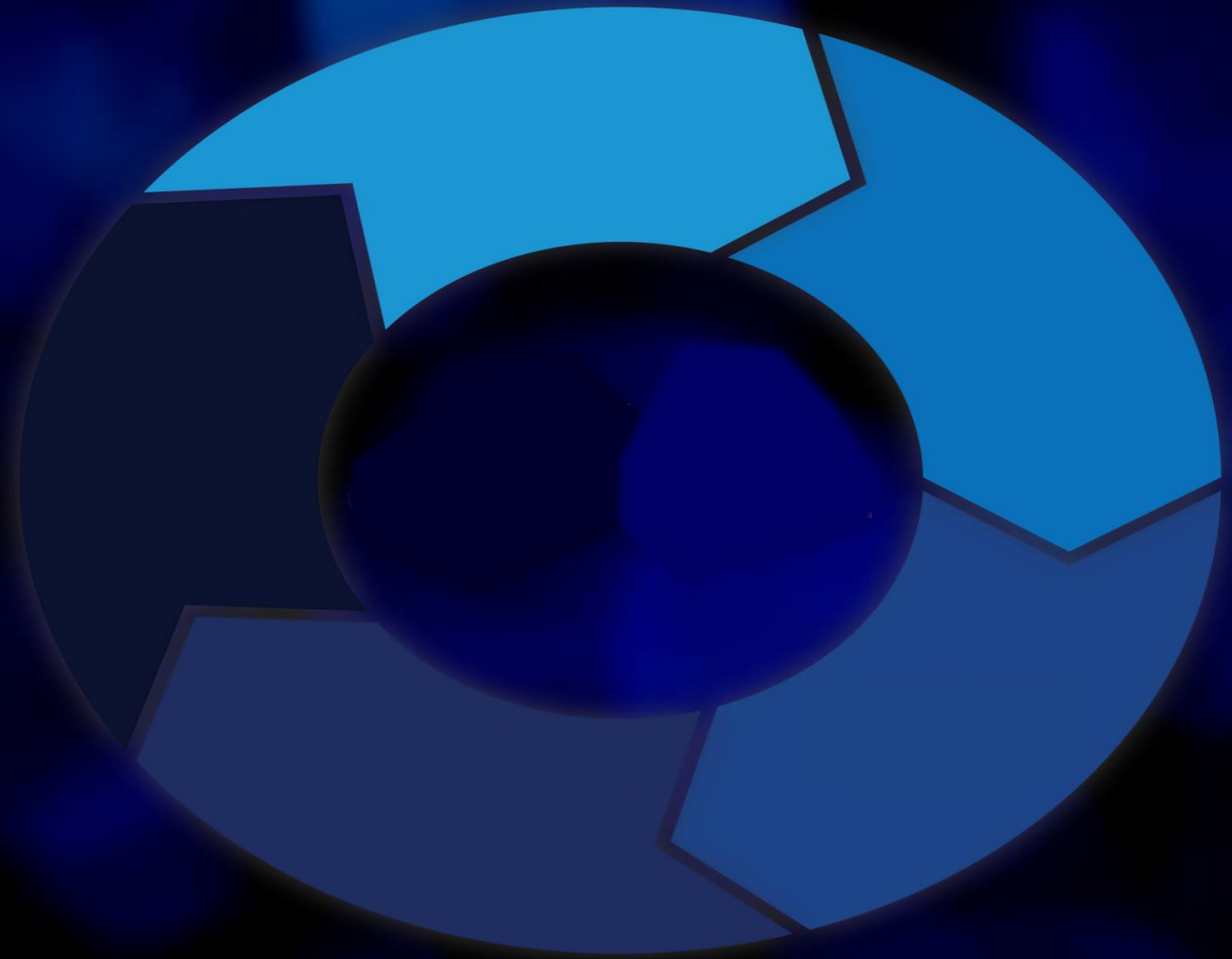
- **FAA Order 7050.1B – Runway Safety Program**
  - Establishes policy, assigns responsibility, and delegates authority for the FAA Runway Safety Program



FAA Runway Safety Order

- **FAA Order 7050.1B – Runway Safety Program**
  - Establishes policy, assigns responsibility, and delegates authority for the FAA Runway Safety Program
  - Intended to improve runway safety by decreasing the number and severity of runway incursions, runway excursions, and other surface incidents

Runway Safety SMS Process



Runway Safety SMS Process

Federal Aviation Administration

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Runway Safety Policy

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Runway Safety Council

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Runway Safety Council

✓ Executive Steering

Runway Safety Policy

Runway Safety Council

- ✓ Executive Steering
- ✓ Provides government and industry leadership to develop and focus implementation of an integrated, data-driven strategy to reduce the number and severity of runway incursions

Runway Safety Policy

Runway Safety Council

- ✓ Executive Steering
- ✓ Provides government and industry leadership to develop and focus implementation of an integrated, data-driven strategy to reduce the number and severity of runway incursions
- ✓ Data-driven, risk-based, integrated systems approach

Runway Safety Policy

Runway Safety Council

- ✓ Executive Steering
- ✓ Provides government and industry leadership to develop and focus implementation of an integrated, data-driven strategy to reduce the number and severity of runway incursions
- ✓ Data-driven, risk-based, integrated systems approach
- ✓ Governs the work of the Surface Safety Group

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- ✓ Provides government and industry leadership to develop and focus implementation of an integrated, data-driven strategy to reduce the number and severity of runway incursions
- ✓ Data-driven, risk-based, integrated systems approach
- ✓ Governs the work of the Surface Safety Group
- ✓ National Runway Safety Plan

Safety Assurance

Runway Incursion Assessment Team and Surface Risk Analysis Process

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- ✓ Determines runway incursion severity classification

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Runway Incursion Assessment Team and Surface Risk Analysis Process

- ✓ Determines runway incursion severity classification
- ✓ Comprised of one or more members from ATC, Flight Standards (Regulator), and Office of Airports

Safety Risk Management

Surface Safety Group

Federal Aviation Administration

Safety Risk Management

Surface Safety Group

- ✓ Identify and understand the contributing factors

Safety Risk Management

Surface Safety Group

- ✓ Identify and understand the contributing factors
- ✓ Analyze risk factors

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- ✓ Develop safety strategies and mitigations to maintain the safest levels of surface operations

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Surface Safety Group

- ✓ Identify and understand the contributing factors
- ✓ Analyze risk factors
- ✓ Develop safety strategies and mitigations to maintain the safest levels of surface operations
- ✓ Collect, find, fix, monitor work that is steered by the executive members of the Runway Safety Council (RSC)

Safety Risk Management

Surface Safety Initiative Team

Safety Risk Management

Surface Safety Initiative Team

- ✓ Serve as a forum for the identification, discussion, research, analysis, and recommendation of possible solutions to potential surface safety gaps

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- ✓ Develop a standardized, data-driven methodology for the identification, selection and prioritization of surface safety gaps

Safety Risk Management

Surface Safety Initiative Team

- ✓ Serve as a forum for the identification, discussion, research, analysis, and recommendation of possible solutions to potential surface safety gaps
- ✓ Develop a standardized, data-driven methodology for the identification, selection and prioritization of surface safety gaps
- ✓ Assess alternatives that may include, but are not limited to, policy, procedures, training, technology, and/or personnel changes to address gaps by priority

Safety Promotion

Communication and Outreach Team

Federal Aviation Administration

Safety Promotion

Communication and Outreach Team

- ✓ **Training**

Safety Promotion

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- ✓ **Training**
- ✓ **Promotional materials (signage, videos, email blasts, posters, etc.)**

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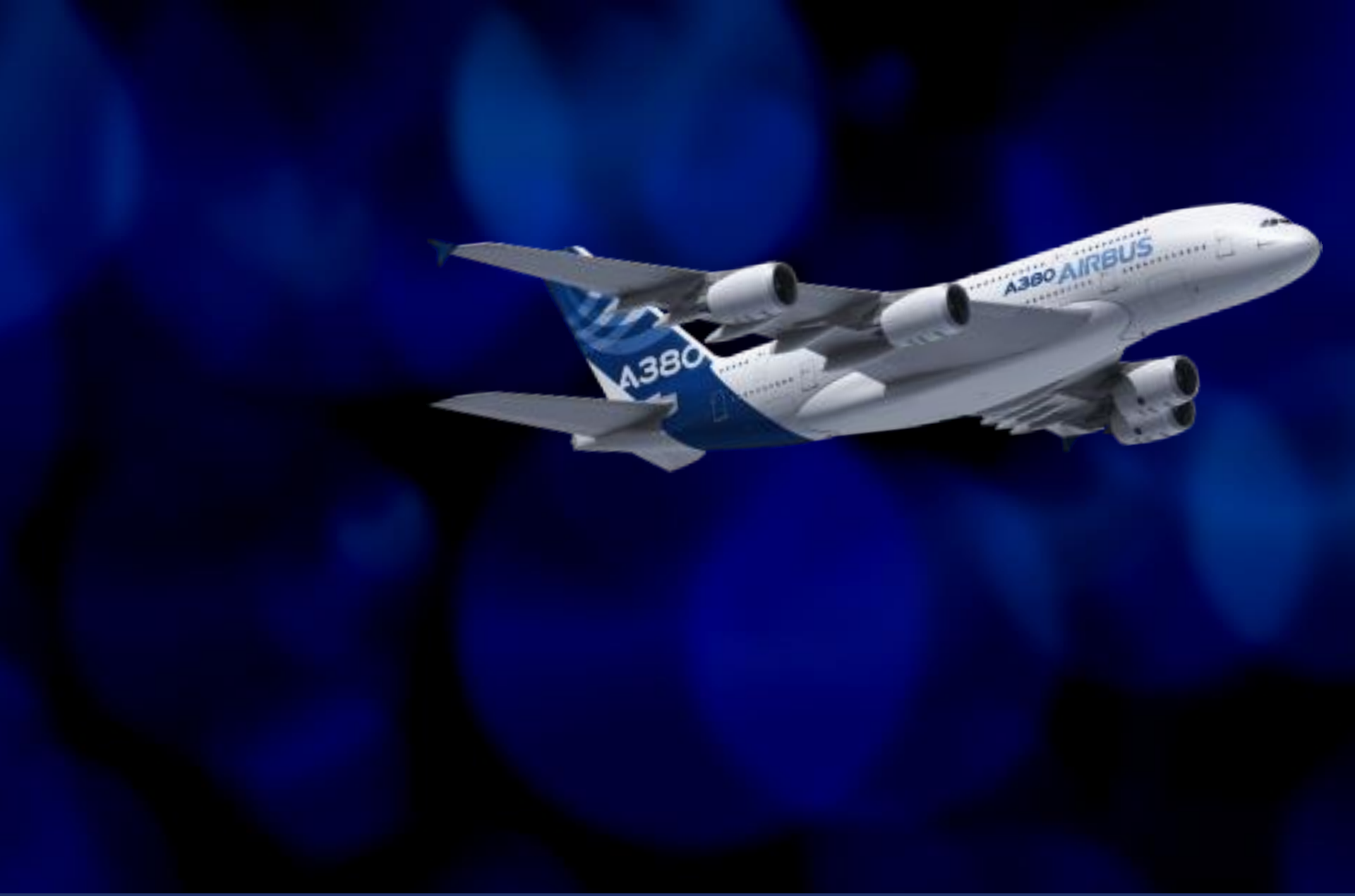
- ✓ **Stakeholder meetings**
- ✓ **Airport Construction Advisory Council**


A380
A380 AIRBUS

Three Levels of Governance

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- **National**

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- **National**
  - Policy direction and implementation
  - Data analysis
  - Stakeholder engagement
  - Safety Promotion

Three Levels of Governance

- **National**
  - Policy direction and implementation
  - Data analysis
  - Stakeholder engagement
  - Safety Promotion
- **Regional**
  - Data analysis
  - Stakeholder engagement
  - Safety Promotion

Three Levels of Governance

- **National**
  - Policy direction and implementation
  - Data analysis
  - Stakeholder engagement
  - Safety Promotion
- **Regional**
  - Data analysis
  - Stakeholder engagement
  - Safety Promotion
- **Local**
  - Data collection and analysis
  - Runway Safety Teams
  - Mitigation implementation

Benefits of Stakeholder Engagement

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- Helps to increase chances of success and improve safety
- Can facilitate sharing of perspectives, data and new ideas
- Helps to identify key issues

FAA Stakeholder Engagement

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- Every aspect of Runway Safety program

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- Runway Safety Council, Surface Safety Group, and Surface Safety Initiative Team

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- Runway Safety Council, Surface Safety Group, and Surface Safety Initiative Team
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- Runway Safety Council, Surface Safety Group, and Surface Safety Initiative Team
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- Safety Risk Management Panels

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- Runway Safety Council, Surface Safety Group, and Surface Safety Initiative Team
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- Runway Safety Teams

FAA Stakeholder Engagement

- Every aspect of Runway Safety program
- Runway Safety Council, Surface Safety Group, and Surface Safety Initiative Team
- Data collection and analysis
- Safety Risk Management Panels
- Runway Safety Teams
- Promotional activities