



International Civil Aviation Organization

# ICAO/IFALPA/FSF Regional Runway Safety Seminar/Workshop for the NAM/CAR Regions

*St. John's, Antigua and Barbuda*

*27 to 29 May 2013*



# Overview

- Framework
- Composition
- Objectives
- RSTs Activities
- Runway Safety Plan Content

# Runway Safety

ICAO has been called upon by the international civil aviation community to exercise leadership in the effort to reduce the number of runway-related accidents and incidents worldwide





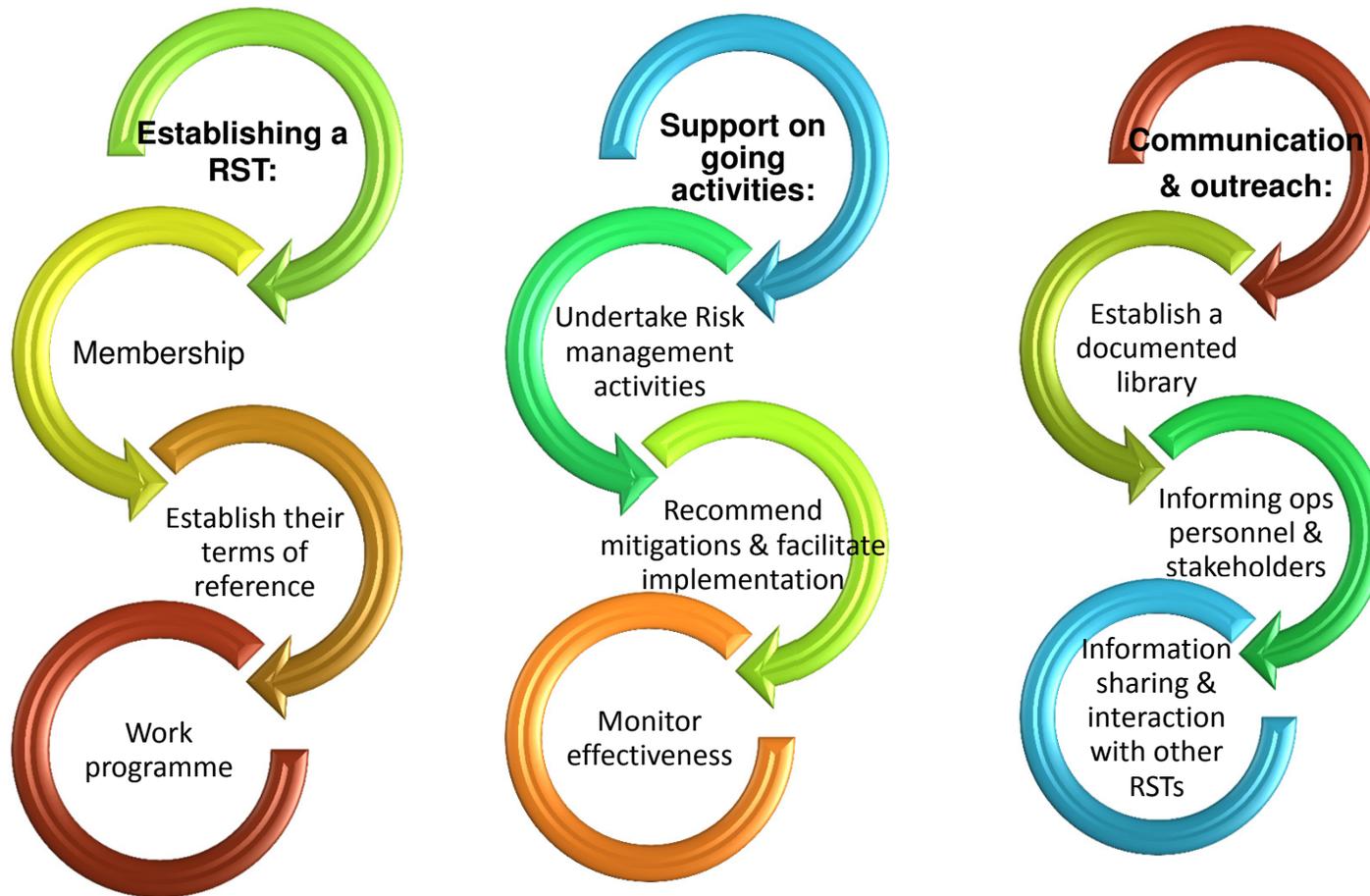
# GRSS 2011 Outcome



ICAO and its Runway Safety Programme Partners are now working together on a series of concrete measures to minimize the risks of runway incursions, runway excursions and other events linked to runway safety by:

**Establishing, promoting and enhancing multi-disciplinary Runway Safety Teams (RSTs) at individual airports**

# A framework for RSTs

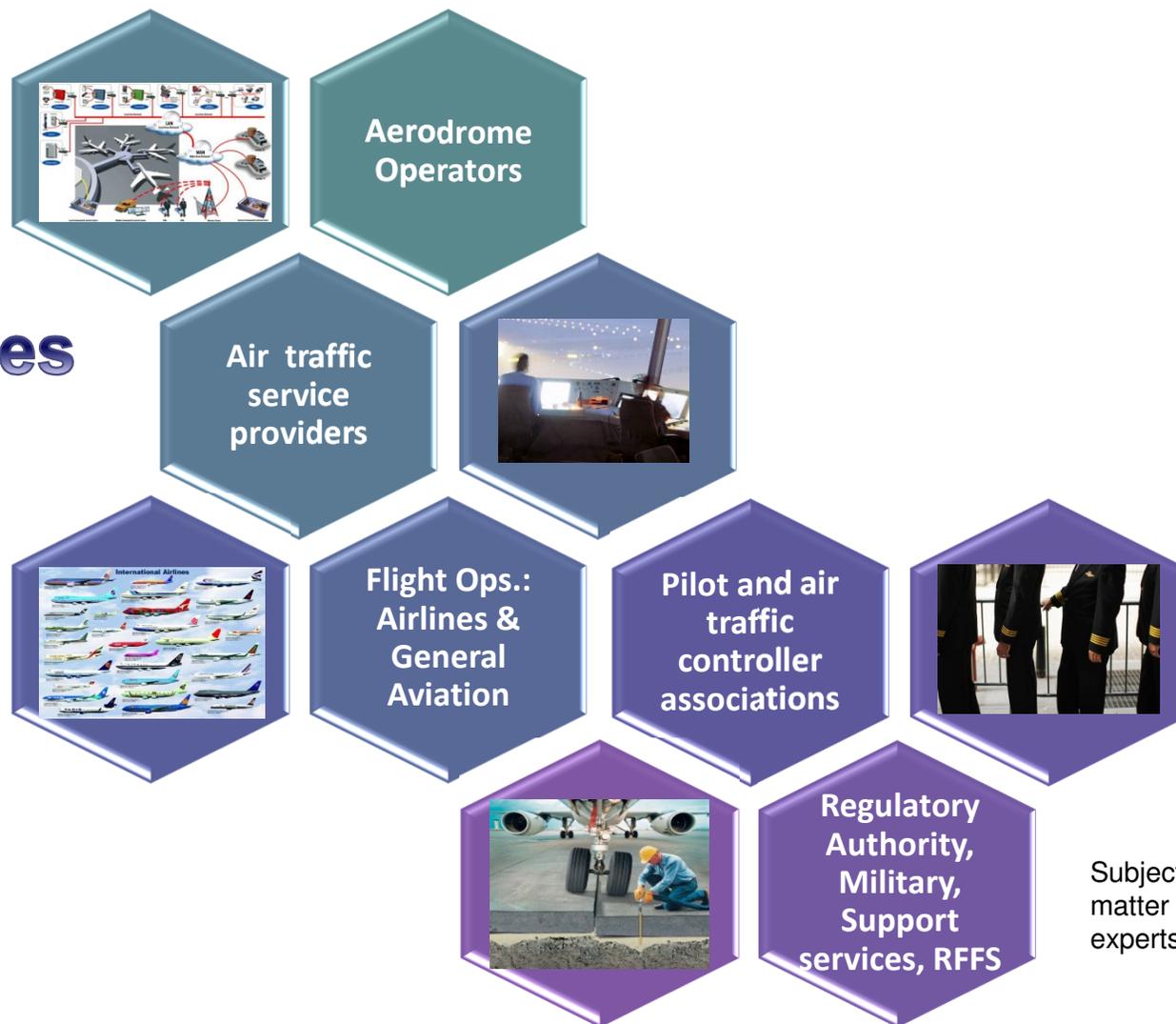


## Runway Safety Plan



# Runway Safety Team Composition

**Representatives  
from:**





## RSTs: Objectives

- A Runway Safety Team should be established to lead action on local runway safety issues
- To promote a collaborative approach by exchanging information and develop best practices to manage risks
- To constitute a body of Runway Safety individuals with operational experience across all relevant aviation disciplines.
- Improve Runway Safety outcomes at the airport.

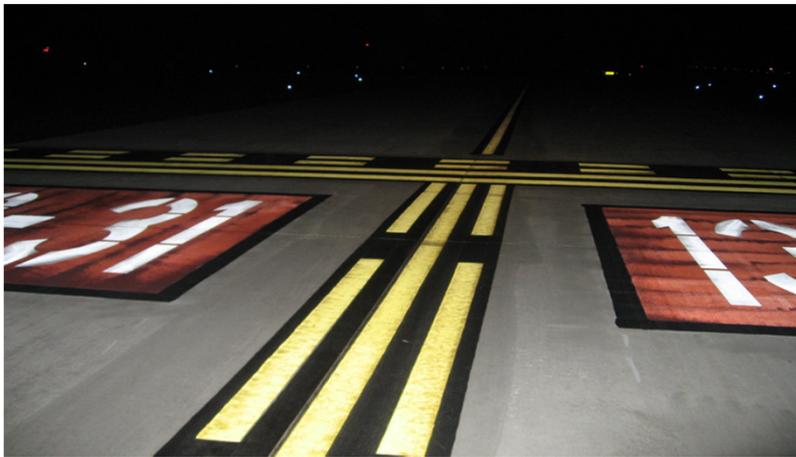


# Aerodrome marking

## New changes to the SARPs:

- Enhanced taxiway centreline markings
- Visual aids for navigation, including stop bars and runway guard lighting
- Enhanced use of the surface painted holding position signs.

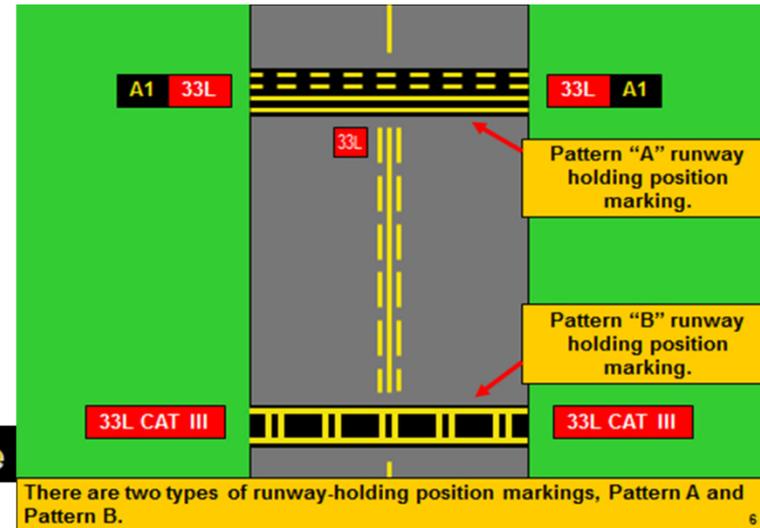
# Runway Holding Position Signs – Enhanced TWY Centre Line Marking



Enhanced Taxiway Centre Line Marking



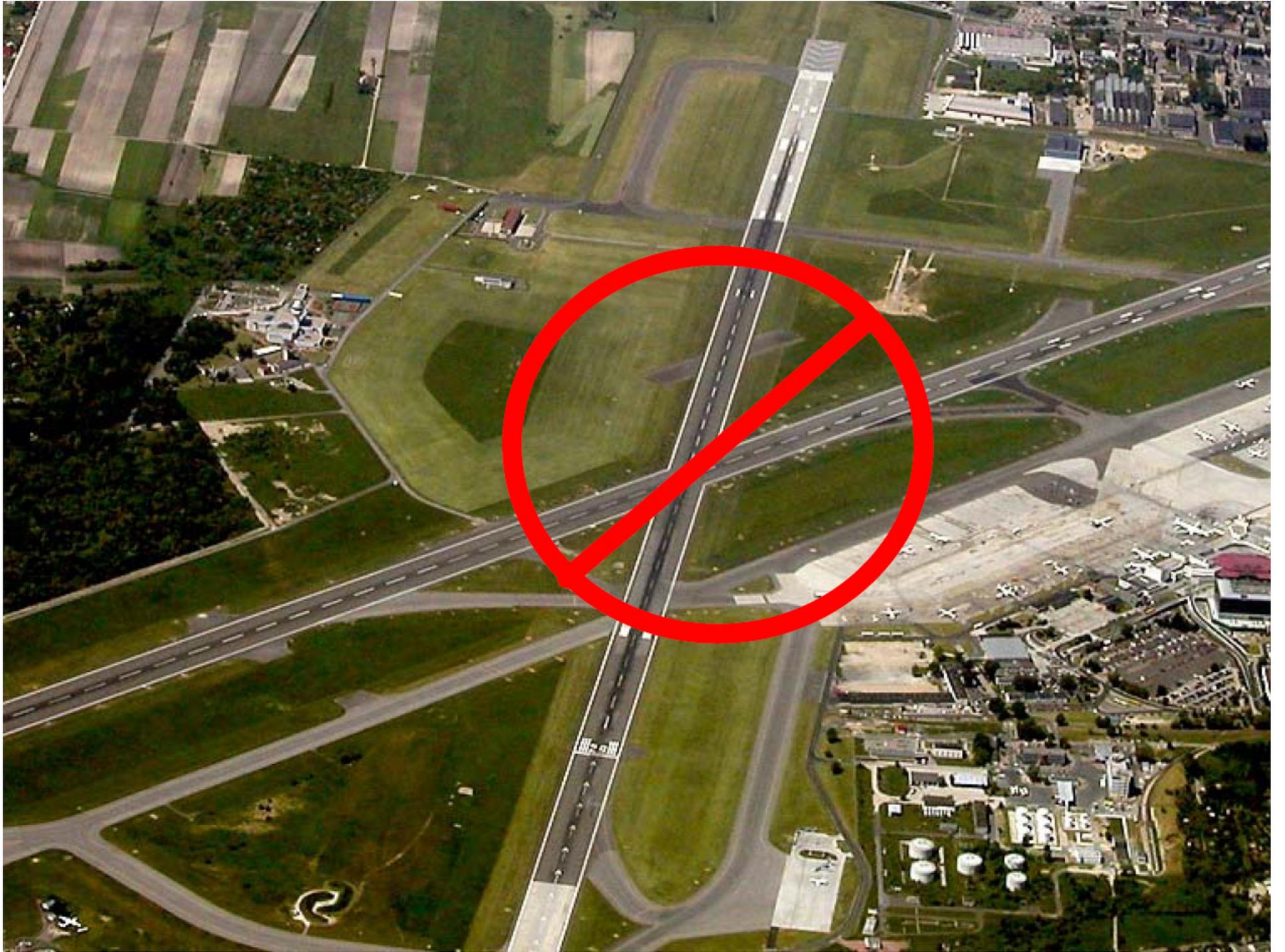
The enhanced taxiway centre line marking is an extension of the hold position markings.



There are two types of runway-holding position markings, Pattern A and Pattern B.

Lack of **Apron Management Service** to: regulate movement, preventing collisions; regulate entry/exit of aircraft to/from apron; ensure safe and expeditious movement of vehicles.







## RSTs: What they do

- Assess operational risks specific to the airport.
- Propose mitigations to prevent runway events (incursions, excursions and others).
- Measure and monitor the effectiveness of the mitigations.
- Educate and Promote - Raise awareness of the operational risks among all stakeholders.



# Education and Awareness

There are many sources of information from the ICAO's Runway Safety Programme Partners

Visit the ICAO Runway Safety Site:  
<http://www2.icao.int/en/RunwaySafety/default.aspx>

# RSTs: The fit with other safety processes



- An RST contributes to the safety management systems of participating service providers.
- An RST can also contribute to safer delivery of support services for organizations not required to have an SMS.
- It is essential that this work is integrated appropriately with other safety and operational committees and is a permanent agenda item.



## RSTs: Governance

- Airports generally host RST meetings:
  - Regularly scheduled to review recurring safety issues and mitigations put in place.
  - May be called to address specific safety events or issues identified by RST participants.
- The RST should elect a chairman to coordinate meetings and other activities.
- The chairmanship does not belong to a specific domain
- The RST is not an “authority,” but provides recommendations to be implemented as appropriate by the service providers

# RSTs: Determining the scope of “runway safety”



- Runway incursions and excursions are global runway safety issues
- Other runway safety issues may include:
  - Airport security
  - Wildlife control
  - Apron management service
  - Apron safety
- Each RST needs to determine risks specific to its operating environment and prioritize accordingly.



# Establishing an RST

- Establish Terms of reference
- Develop a work programme
- Determine frequency of meetings
- Identify Venue(s)
- Determine a meeting schedule
- Identify agenda items



# Support RST activities

- Conduct ongoing risk management activities:
  - Collect, store and analyze data
  - Track progress and report trends
- Recommend mitigations and facilitate implementation
  - Eliminate hazards
  - Provide and justify mitigation alternatives
  - Raise awareness regarding any residual risks
- Monitor effectiveness and identify any unintended consequences



# RST data collection

- Access to information from appropriate incident reporting systems
- Conduct personal observations
  - Air traffic services, flight operations, aerodrome management and tenants
  - First-hand look at actual or potential airfield problem areas
- Input from stakeholders
  - Airport users (Airlines, corporate operators, flight schools)
  - Industry organizations
  - RFF and ground services



# RST Meetings

- General expectations
  - Acknowledgement that there is room for improvement
  - Acceptance of responsibility
  - Partnership among all stakeholders
  - Commitment and dedication
  - Ownership and pursuit of solutions
  - Action to implement change
  - Some topics may require further discussion



## RST Meetings (Cont.)

- Typical Agenda Items
  - Review of mission and goals of the RST
  - Review of events/data (runway incursions, excursions, surface incidents, etc.)
  - Review of airfield tour findings
  - Review of any ongoing or pending airfield construction
  - Review of unique local air traffic procedures
  - Hazard identification
  - Action Item development (recommendations and supporting justifications)
  - Review of best practices



## Multiple Runway Intersections



Two Runway Ends Close Together **Using One Taxiway**



## RST Meetings (Cont.)

- Action Items Guidance
  - Action items should be airport specific and linked to a runway safety concern, issue or problem.
  - Consensus is required for assignment of an action item, in particular from the organization responsible for accomplishing the action.
  - Acceptance of an action item is voluntary.
  - Proposed action items where consensus is not reached may be documented as safety recommendations at the discretion of the RST facilitator.



# Communication and outreach

- Establish a documented library
  - Links to relevant websites
  - Examples of mitigation strategies
  - Safety reports and reviews
  - Best practices
  - Relevant journal articles
- Informing operational personnel and other stakeholders
- Information sharing and interaction with other RSTs
  - Networking
  - Mentoring and “buddying”
  - Sharing best practices



# Runway Safety Plan objectives

- The RST is convened with the purpose to identify surface related hazards, assess the risk of surface accidents and incidents, and develop mitigations. The RST should document findings in a Plan.
- The Plan should be site-specific and present detailed strategies and actions to mitigate the risk of surface hazards.
- In addition, the Plan should identify best practices that could be documented and shared with the aviation community.
- The RST should convene to review and/or update the Plan on a regular basis (annually or as necessary).

# Runway Safety Plan content



The runway safety Plan should include:

- List of RST participants
- Documentation of the RST meeting
- Detail safety concerns, issues, and other problems
- Identified hazards
- Assessed Risk
- Proposed mitigations
- Action items
- Best practices

# RSTs require formal processes to allow them to:



- Assess operational risks specific to the airport.
- Propose mitigations to prevent runway events (incursions, excursions and others).
- Measure and monitor the effectiveness of the mitigations.
- Educate and Promote: Raise awareness of the operational risks among all stakeholders

THANK YOU



FLIGHT  
SAFETY  
FOUNDATION



# Runway Safety Team (RST) Role



## The Integrated Runway Safety Team

- Airport Geometry, Signage, Marking, Lighting – Airports
- Pilot Training and Certification – Flight Standards
- ATC Performance – Air Traffic Management
- The Customers and Airport Personnel



- Runway operations are an integral part of aviation; the hazards and risks associated with runway operations need to be managed in order to prevent runway incursions that may lead to accidents.

- Runway incursions can be divided into several recurring scenarios. Common scenarios include:
  - a) an aircraft or vehicle crossing in front of a landing aircraft;
  - b) an aircraft or vehicle crossing in front of an aircraft taking off;
  - c) an aircraft or vehicle crossing the runway-holding position marking;
  - d) an aircraft or vehicle unsure of its position and inadvertently entering an active runway;
  - e) a breakdown in communications leading to failure to follow an air traffic control instruction; and
  - f) an aircraft passing behind an aircraft or vehicle that has not vacated the runway.

- According to a Transport Canada report (September 2000):
  - a) as traffic volume increases, the likelihood of a runway incursion increases more rapidly when capacity-enhancing procedures are in effect than when they are not;
  - b) if traffic remains the same, the potential for a runway incursion increases when capacity-enhancing procedures are put into operation;
  - c) many aerodrome improvement projects have resulted in a more complex aerodrome layout which, together with inadequate aerodrome design standards, signage, markings and lighting, and the lack of standard taxi routes and availability of improved aerodrome diagrams, has worsened the situation; and
  - d) increasing environmental pressure can compromise safe air traffic control (ATC) practices by requiring too many configuration changes.

- Pilots, controllers and drivers can all be involved in runway incursions. A survey of operational staff showed that approximately thirty per cent of drivers, twenty per cent of air traffic controllers and fifty per cent of pilots have reported being involved in runway incursions (reference: EUROCONTROL survey, 2001).
- Mitigation strategies that address all three parties should be included in systemic solutions.