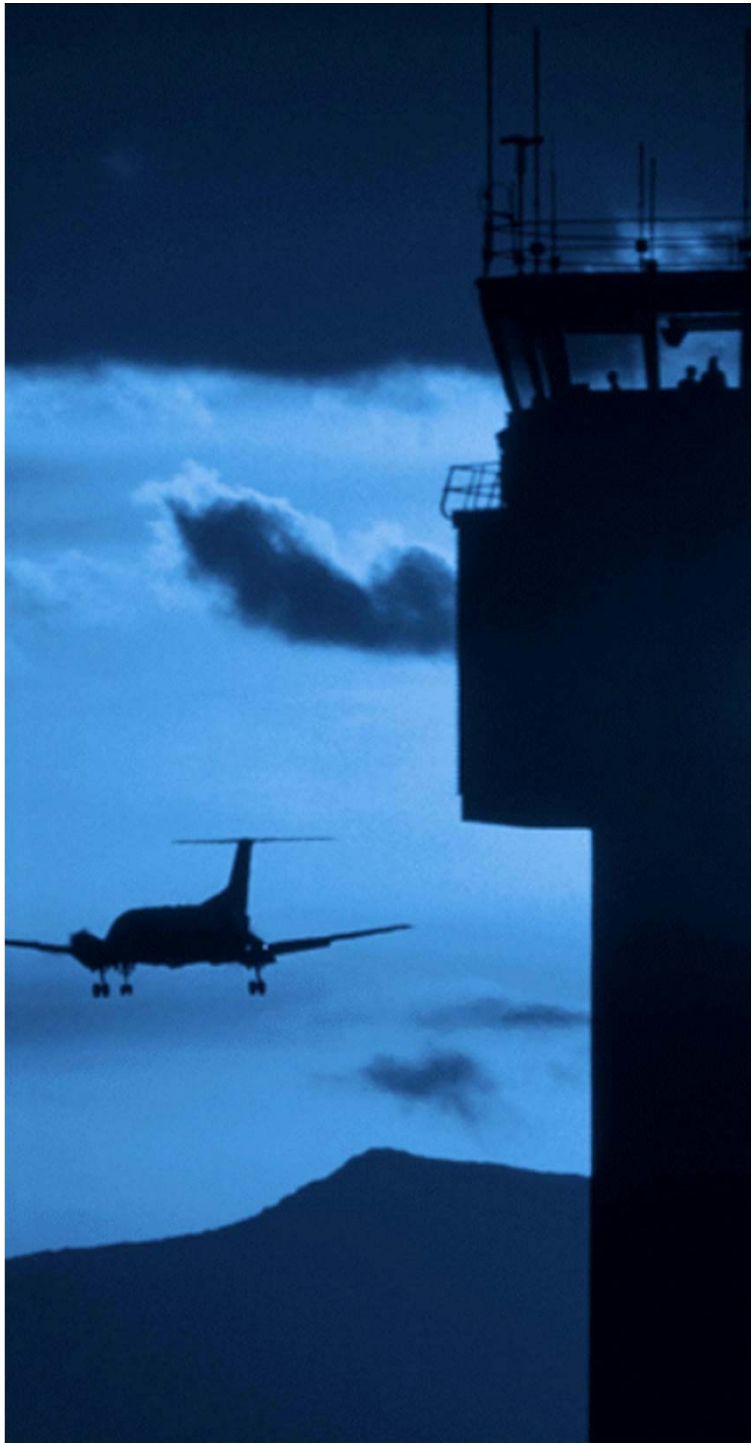
Runway Safety Team
Case Study / Workshop



Presented to: **Regional Runway Safety Seminar**

By: **Captain Peter Budd**
Technical Officer
ICAO Universal Safety Oversight Audit Programme

Supported by:
John Lott
Chris Pokorski
Michael de Leon

RST Workshop-Task 1

- **Form a Team-**
  - **ATC**
  - **Pilot/Operator**
  - **Airport Operator**

RST Workshop-Task 2

- **Elect a Chairman**


M 163622

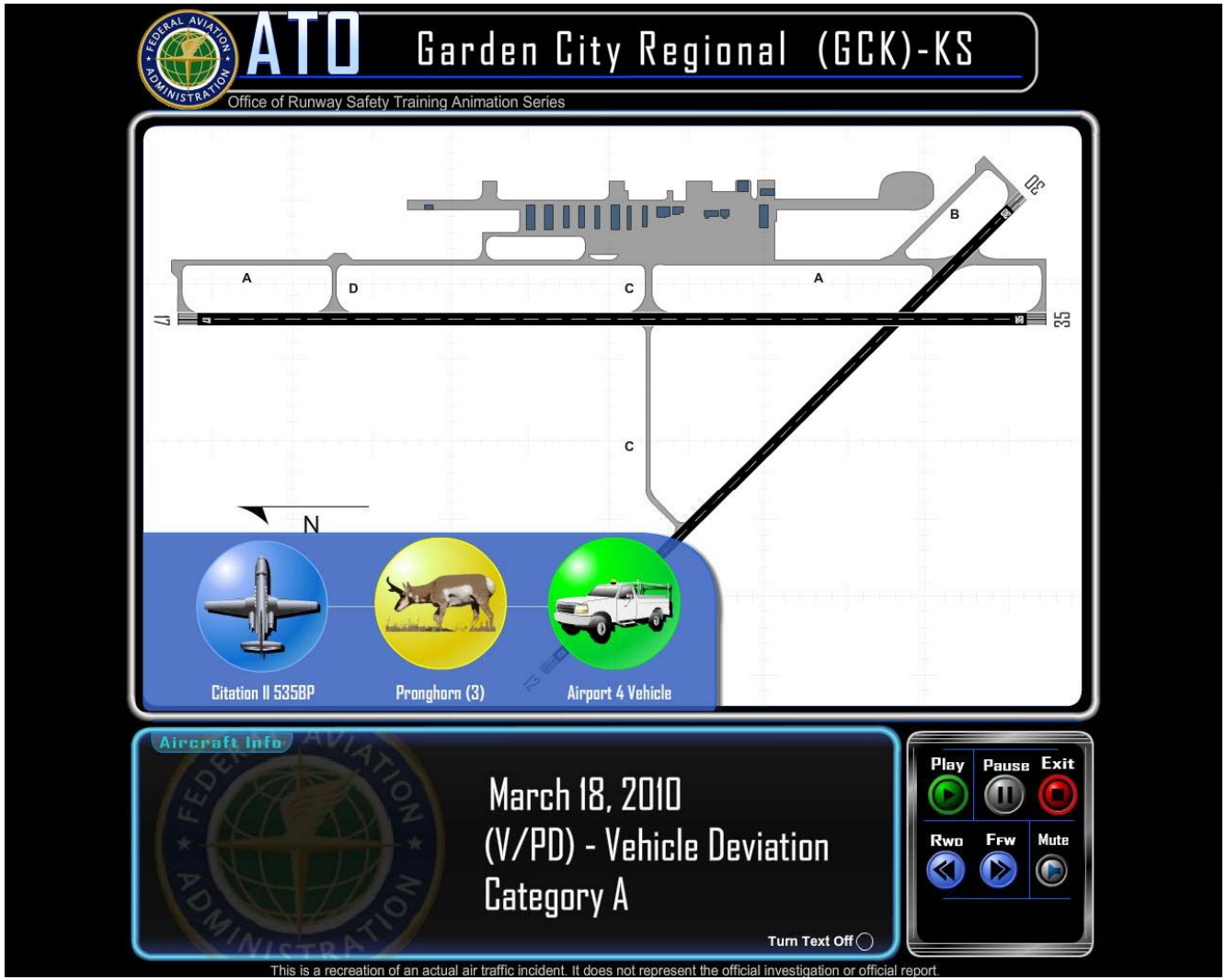

278
TT11


24


FRANK JR
Goldhofer
22770Goldhofer
AA.com


FRANK JR
70

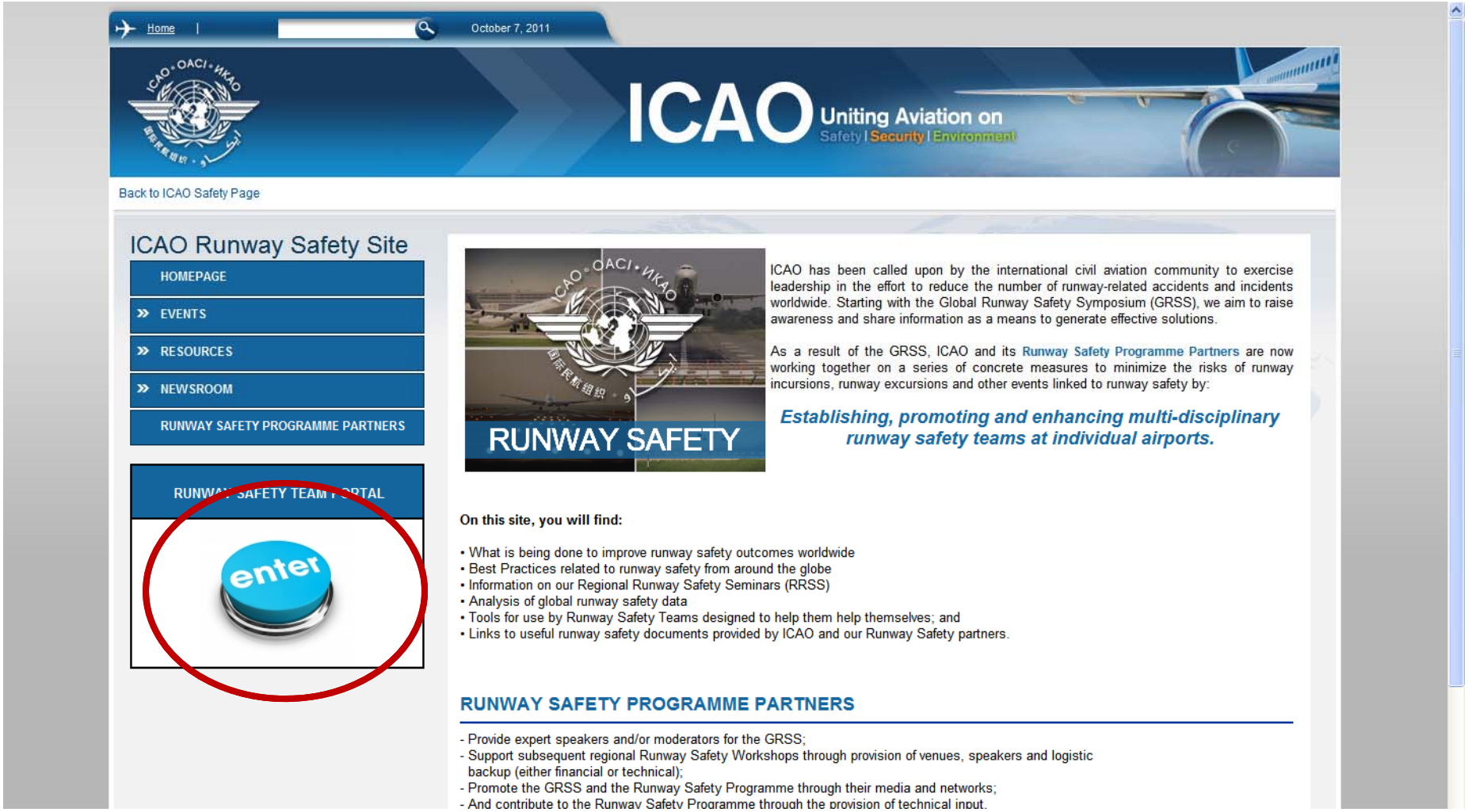
Runway Safety Team (RST)



RST-Workshop Format

- RST process
- Review case study scenarios
- Questions/feedback-at any time

ICAO's Runway Safety Page
www.icao.int/runwaysafety



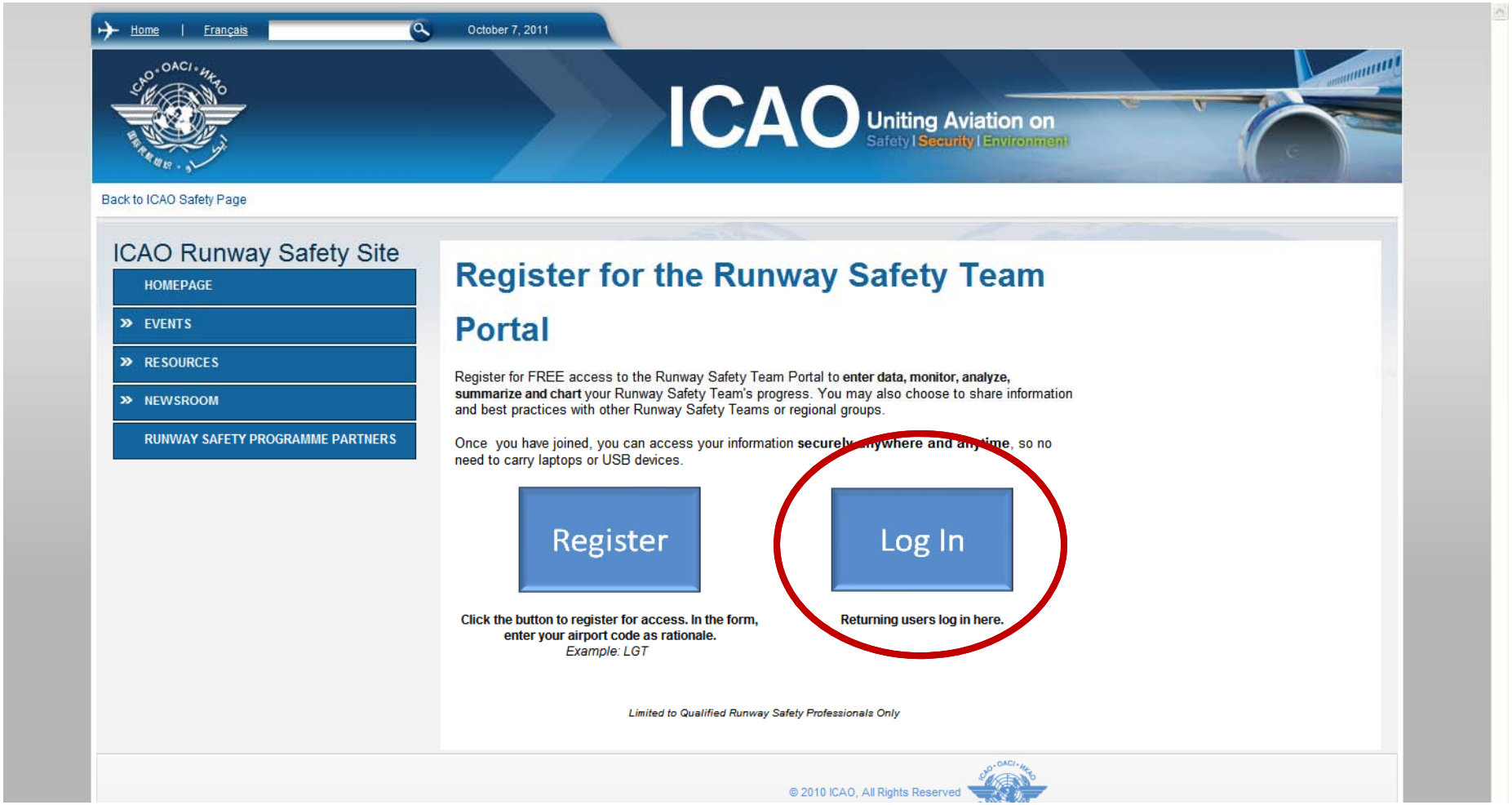
RST-Workshop Task 3

- Log in to ICAO Runway Safety Site
- http://www2.icao.int/en/RunwaySafety/Pages/Toolkits.aspx
- Locate resources tab
- What resources are available?
- What contents of EASA web site can you use?
- What contents of FAA web site can you use?

RST-Workshop Task 4

- Log in to your runway safety team portal
- User name Password
- studenttwo student02
- **studentthre student03**
- studentfour student04 studentfive student05
- studentsix student06
- **studentseve student07**
- studenteight student08 studentnine student09
- studentten student10

ICAO's Runway Safety Page
www.icao.int/runwaysafety



(RST)-Team Composition

To be effective, a Runway Safety Team (RST) should include personnel from the:

- **airport management organization**;
- **airport traffic control tower** (ATC);
- **air operators**; and
- In some countries the regulator.

All attendees at the RST meeting are considered to be part of the team.

The Role of the RST

A Runway Safety Team (RST) convenes to discuss surface movement issues and concerns at a particular airport.

The team then formulates a Runway Safety Action Plan (RSAP) to address those concerns.

(RSAP)-Runway Safety Action Plan

Plan Preparation. As a minimum, the plan must include the following:

(1) A list of participants, their affiliation, and a general overview of the team meeting.

(2) Runway safety concerns, issues, or problems at the airport. These may include existing as well as new issues.

(3) Best Practices. The team may determine that an operational practice observed at an airport is a best practice that should be shared with other locations. Each RSAP should include a section on best practices, if any, in use at that particular airport.

(RSAP)-Plan Preparation

(4) Specific Action Items. 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.

(RST)-Administration

The Runway Safety Team (RST) should convene at a minimum of once every 3 months to review and/or update the plan, or more frequently as needed to address significant issues (for example, construction).

Any member of the RST can host the RST meeting.

The chairmanship/vice-chairmanship of the RST is decided by the members;

Election, consensus, rotational

(RST)-Resources

ICAO Runway Safety Site

http://www2.icao.int/en/RunwaySafety/Pages/Toolkits.aspx

- Handbook
- Documents
- Tool kits
- Links

http://www.faa.gov/airports/runway_safety/resources/lrsat/

Runway Safety Team (RST) Process

- Pre-RST visits (optional)
  - ATC, airport management, tenants.

- Daylight and nighttime airfield tour (optional)
  - Review actual or potential problem areas

Leading up to the…

- Runway Safety Team Meeting
  - Commitment on any necessary actions

Runway Safety Team (RST) Process

General expectations for RST meetings…

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

Primary Causes of Runway Incursions

- **Breakdown in Communications**
- **Lack of Airport Familiarity**
- **Loss of Situational Awareness**
- **Complacency**
- ***Normalization of Deviance***

  Not following regulations, processes, standards.

  Not stopping at a stop sign.

  Not using a checklist.

  Speeding.

Why is this important?

Questions?

Break.

Show Garden City Regional (GCK) training animation and start first case study.

Runway Safety Team (RST)

Case Study #1

Case Study #2

Case Study #3

Case Study #4

In each case, what are the issues? What can be done to reduce risk?

Develop new action items.

Runway Safety Team (RST)

Case Study #1

Case Study #2

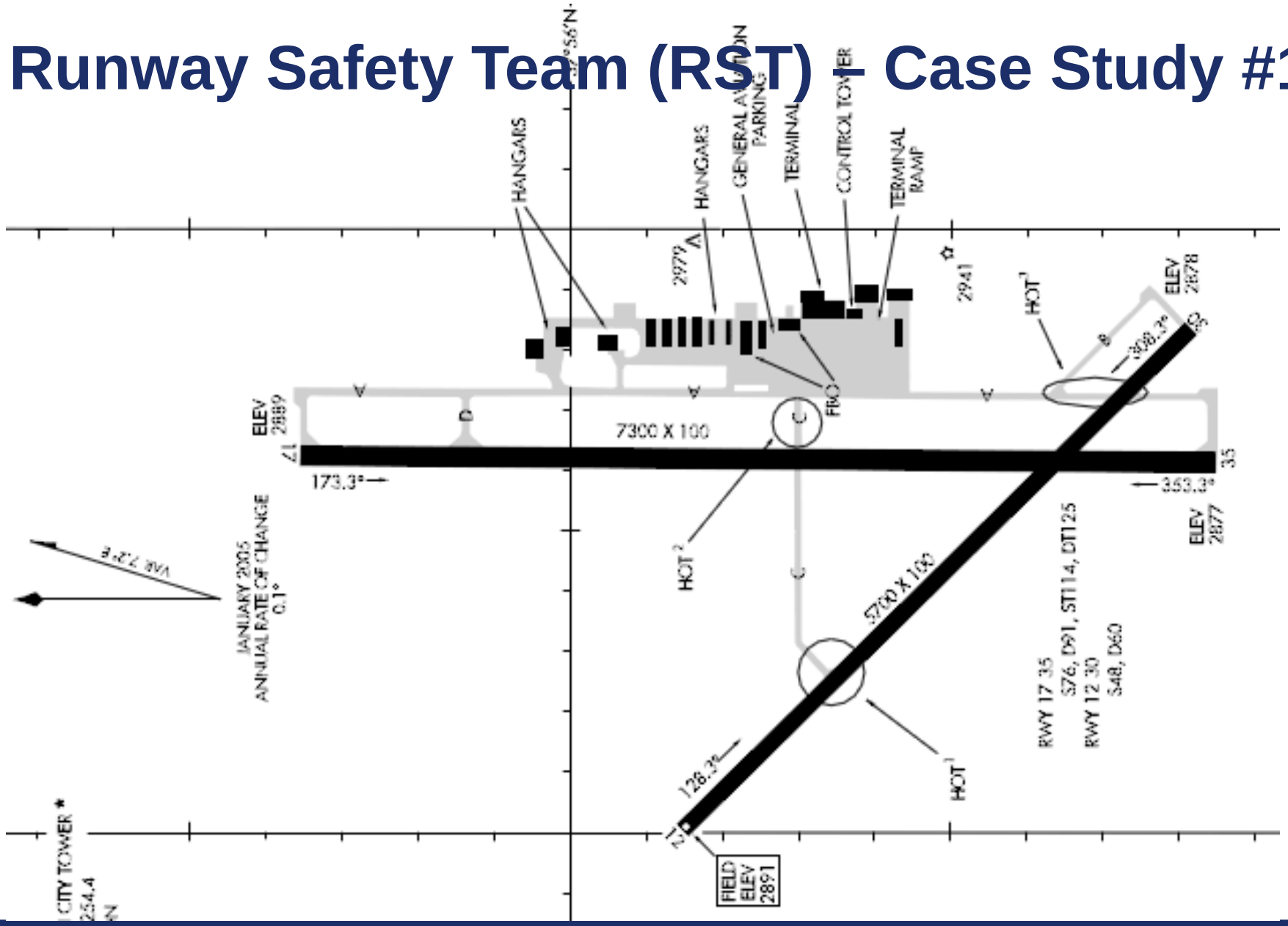
Case Study #3

Case Study #4

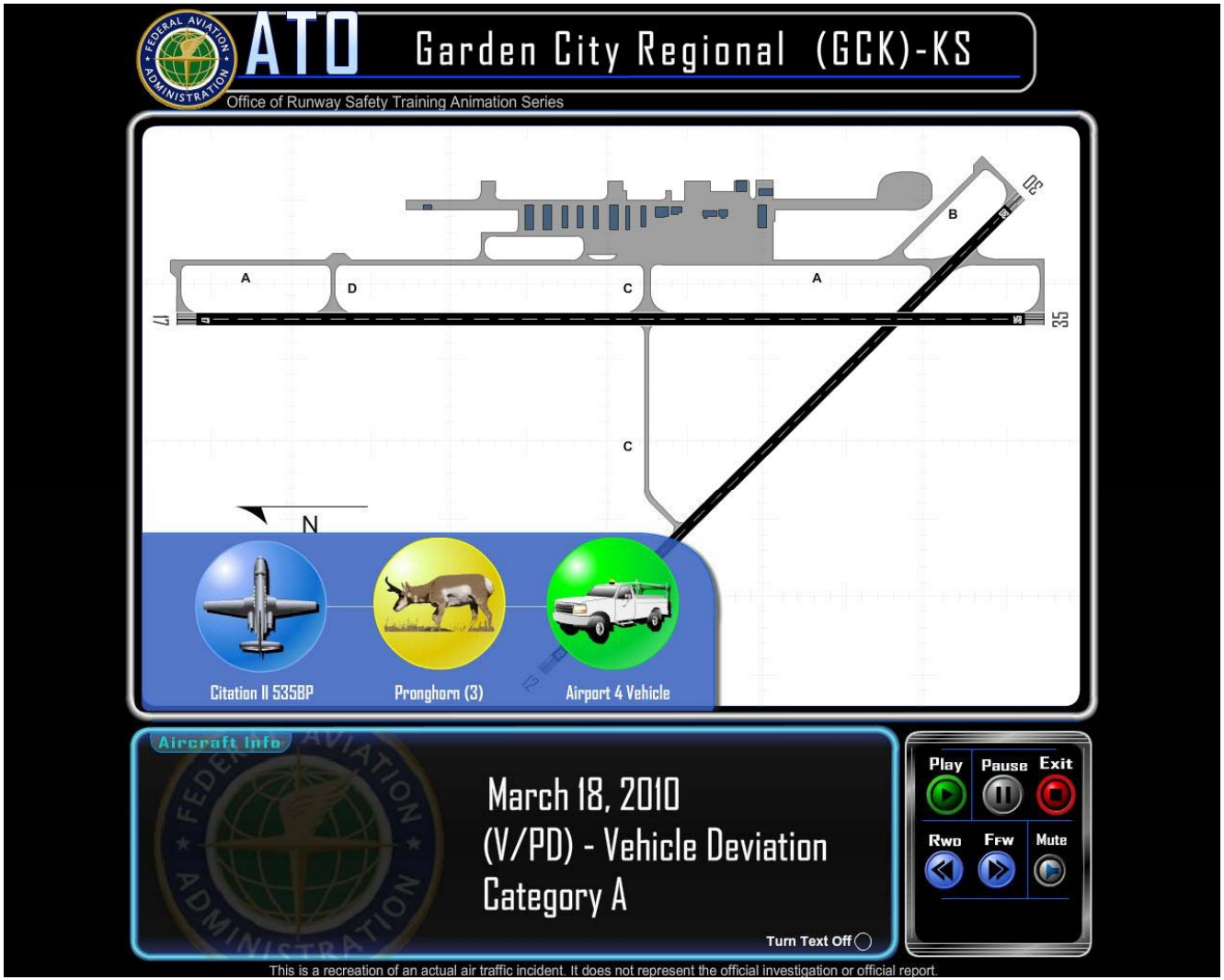
In each case, what are the issues? What can be done to reduce risk?

Develop new action items.

Runway Safety Team (RST) – Case Study #1



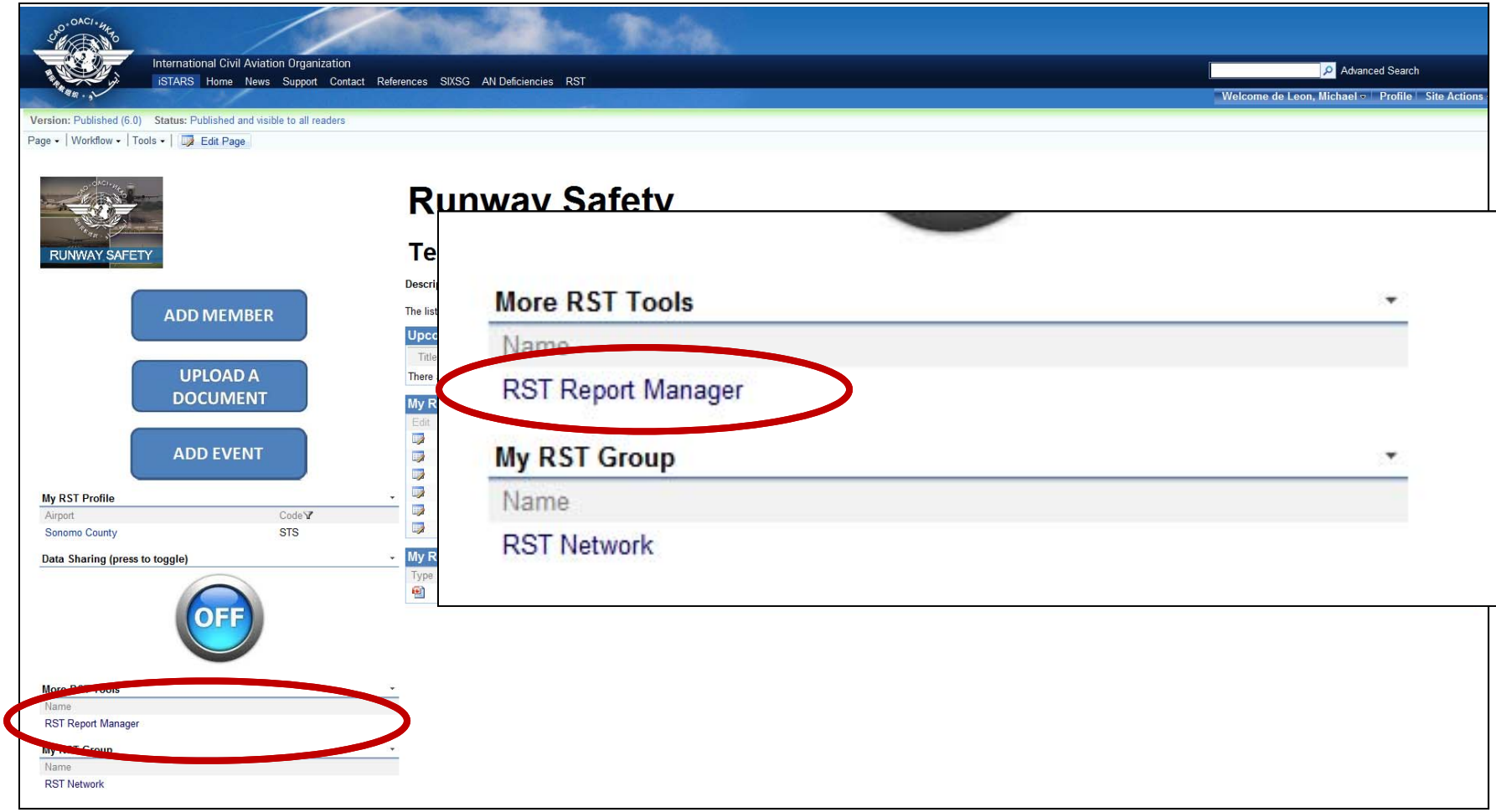
Runway Safety Team (RST) – Case Study #1



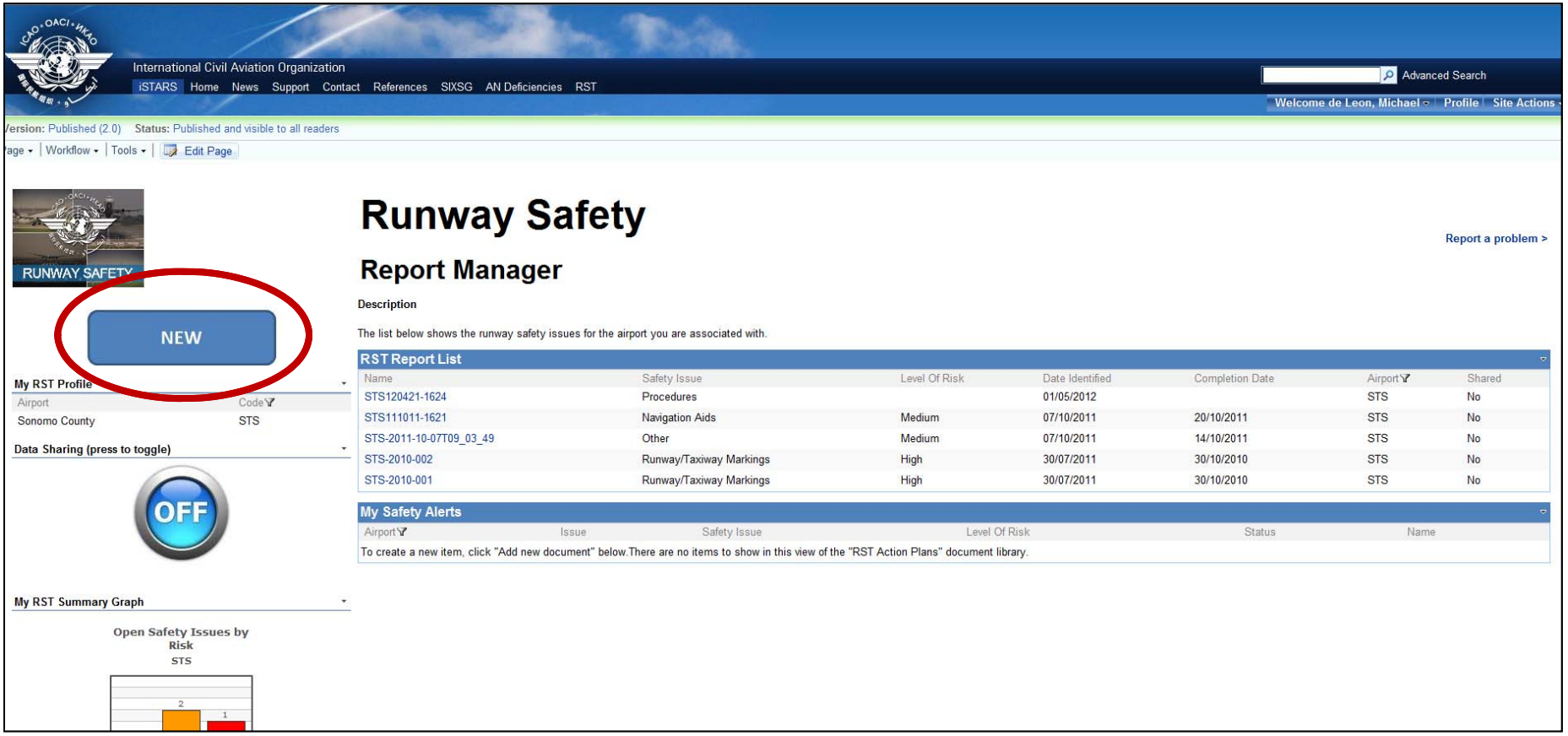
Runway Safety Team (RST) – Case Study #1

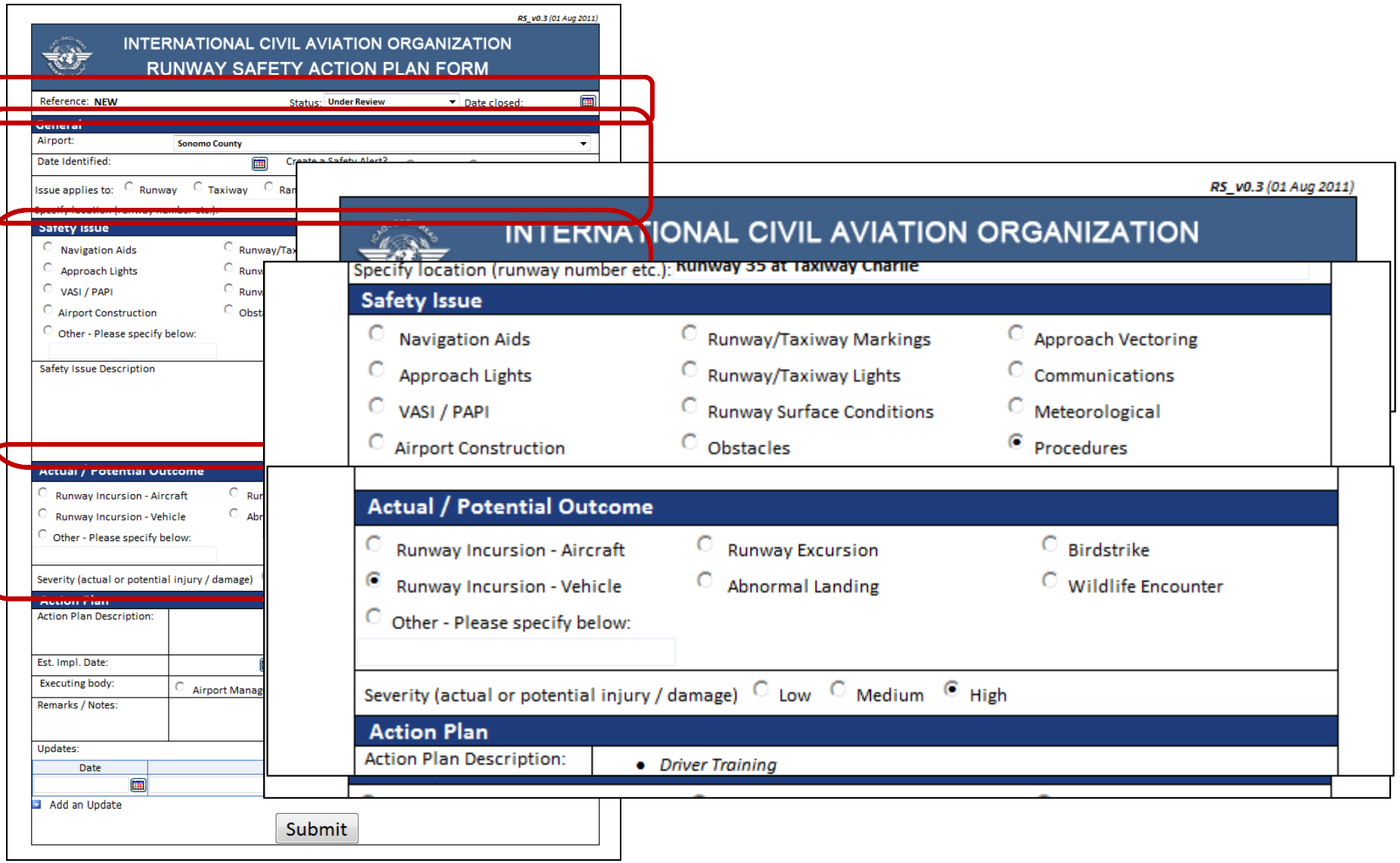
An airport maintenance vehicle was cleared onto Taxiways Alfa and Bravo in pursuit of an animal. The vehicle entered Runway 35 at Taxiway Charlie without authorization and conflicted with a Cessna C560 that had landed same runway. The C560 then rotated and became airborne to avoid the vehicle and animal. As reported by the non-flying pilot: they recognized the conflict just before touchdown and aggressively rotated with the non-flying pilot applying additional backpressure to the controls. The rotation was early and resulted in a momentary stall warning. The main gear touched down before they became airborne again. A direct overflight occurred as the truck crossed the runway in pursuit of the antelope. The closest vertical proximity was estimated at 10 - 20 feet.

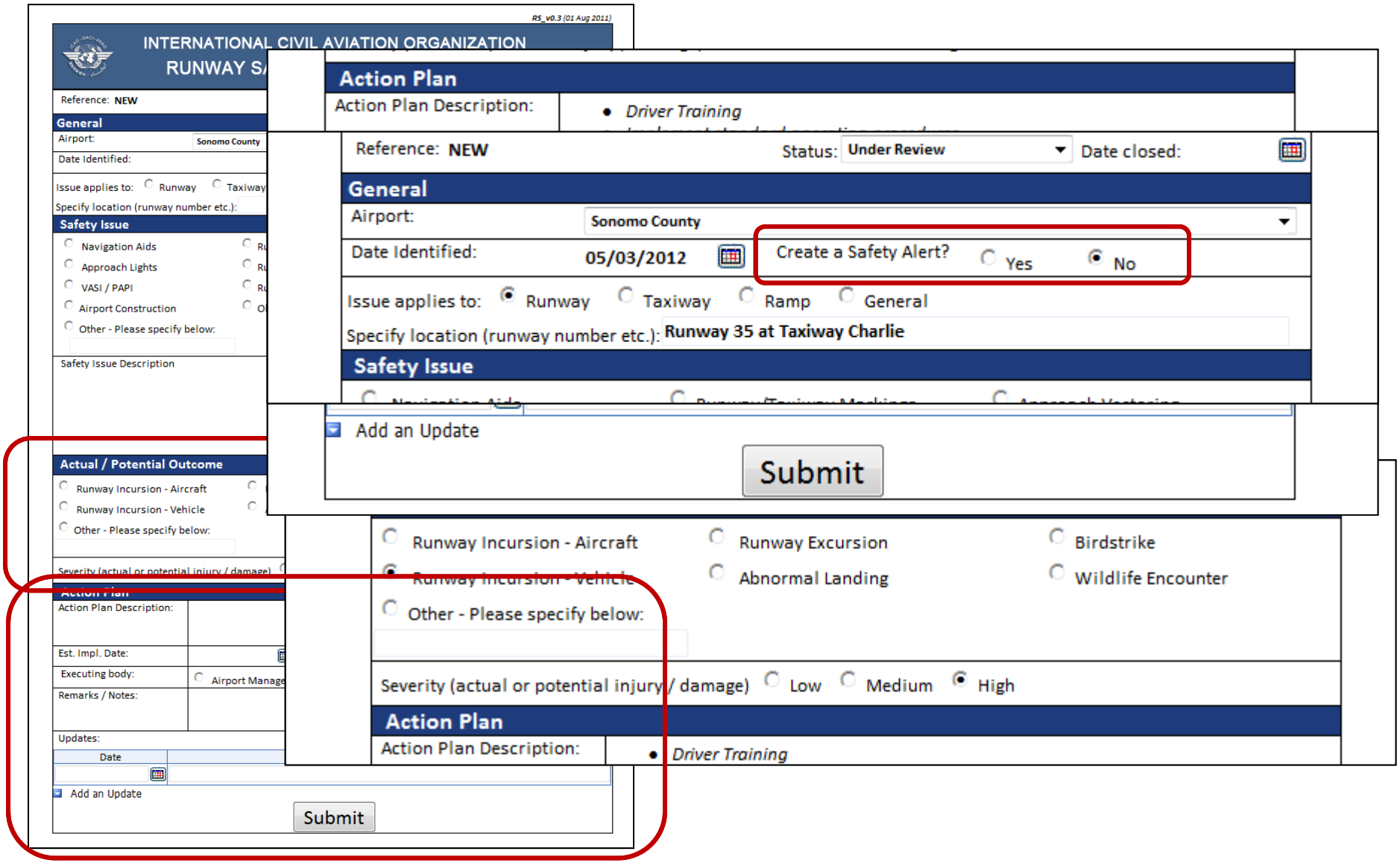
Runway Safety Tool



Runway Safety Tool




RS_v0.3 (01 Aug 2011)
INTERNATIONAL CIVIL AVIATION ORGANIZATION
RUNWAY SAFETY ACTION PLAN FORM
Reference: NEW
Status: Under Review
Date closed:
General
Airport:
Sonomo County
Date Identified:
Issue applies to: Runway Taxiway
Safety Issue
Navigation Aids
Approach Lights
VASI / PAPI
Airport Construction
Other - Please specify below:
Safety Issue Description
Actual / Potential Outcome
Runway Incursion - Aircraft
Runway Incursion - Vehicle
Other - Please specify below:
Severity (actual or potential injury / damage)
Action Plan
Action Plan Description:
Est. Impl. Date:
Executing body:
Airport Manag
Remarks / Notes:
Updates:
Date
Add an Update
Submit
RS_v0.3 (01 Aug 2011)
INTERNATIONAL CIVIL AVIATION ORGANIZATION
Specify location (runway number etc.): Runway 35 at Taxiway Charlie
Safety Issue
Navigation Aids
Approach Lights
VASI / PAPI
Airport Construction
Runway/Taxiway Markings
Runway/Taxiway Lights
Runway Surface Conditions
Obstacles
Approach Vectoring
Communications
Meteorological
Procedures
Actual / Potential Outcome
Runway Incursion - Aircraft
Runway Incursion - Vehicle
Other - Please specify below:
Runway Excursion
Abnormal Landing
Birdstrike
Wildlife Encounter
Severity (actual or potential injury / damage)
Low
Medium
High
Action Plan
Action Plan Description:
Driver Training


RS_v0.3 (01 Aug 2011)
INTERNATIONAL CIVIL AVIATION ORGANIZATION
RUNWAY S
Reference: NEW
General
Airport: Sonomo County
Date Identified:
Issue applies to: Runway Taxiway
Specify location (runway number etc.):
Safety Issue
Navigation Aids
Approach Lights
VASI / PAPI
Airport Construction
Other - Please specify below:
Safety Issue Description
Actual / Potential Outcome
Runway Incursion - Aircraft
Runway Incursion - Vehicle
Other - Please specify below:
Severity (actual or potential injury / damage)
Action Plan
Action Plan Description:
Est. Impl. Date:
Executing body:
Airport Manage
Remarks / Notes:
Updates:
Date
Add an Update
Submit
Action Plan
Action Plan Description:
Driver Training
Reference: NEW
Status: Under Review
Date closed:
General
Airport: Sonomo County
Date Identified: 05/03/2012
Create a Safety Alert? Yes No
Issue applies to: Runway Taxiway Ramp General
Specify location (runway number etc.): Runway 35 at Taxiway Charlie
Safety Issue
Add an Update
Submit
Runway Incursion - Aircraft
Runway Excursion
Birdstrike
Runway Incursion - Vehicle
Abnormal Landing
Wildlife Encounter
Other - Please specify below:
Severity (actual or potential injury / damage) Low Medium High
Action Plan
Action Plan Description:
Driver Training

Probability of occurrence		
Qualitative definition	**Meaning**	**Value**
Frequent	Likely to occur many times *(has occurred frequently)*	**5**
Occasional	Likely to occur some times *(has occurred infrequently)*	**4**
Remote	Unlikely, but possible to occur *(has occurred rarely)*	**3**
Improbable	Very unlikely to occur *(not known to have occurred)*	**2**
Extremely improbable	Almost inconceivable that the event will occur	**1**

Severity of occurrences		
Aviation definition	**Meaning**	**Value**
Catastrophic	➢Equipment destroyed. ➢Multiple deaths.	**A**
Hazardous	➢A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely. ➢Serious injury. ➢Major equipment damage.	**B**
Major	➢A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of increase in workload, or as a result of conditions impairing their efficiency. ➢Serious incident. ➢Injury to persons.	**C**
Minor	➢Nuisance. ➢Operating limitations. ➢Use of emergency procedures. ➢Minor incident.	**D**
Negligible	➢Little consequences	**E**

Risk probability		Risk severity				
		Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent	5	5A	5B	5C	5D	5E
Occasional	4	4A	4B	4C	4D	4E
Remote	3	3A	3B	3C	3D	3E
Improbable	2	2A	2B	2C	2D	2E
Extremely improbable	1	1A	1B	1C	1D	1E

Runway Safety Team (RST)

Case Study #1

Case Study #2

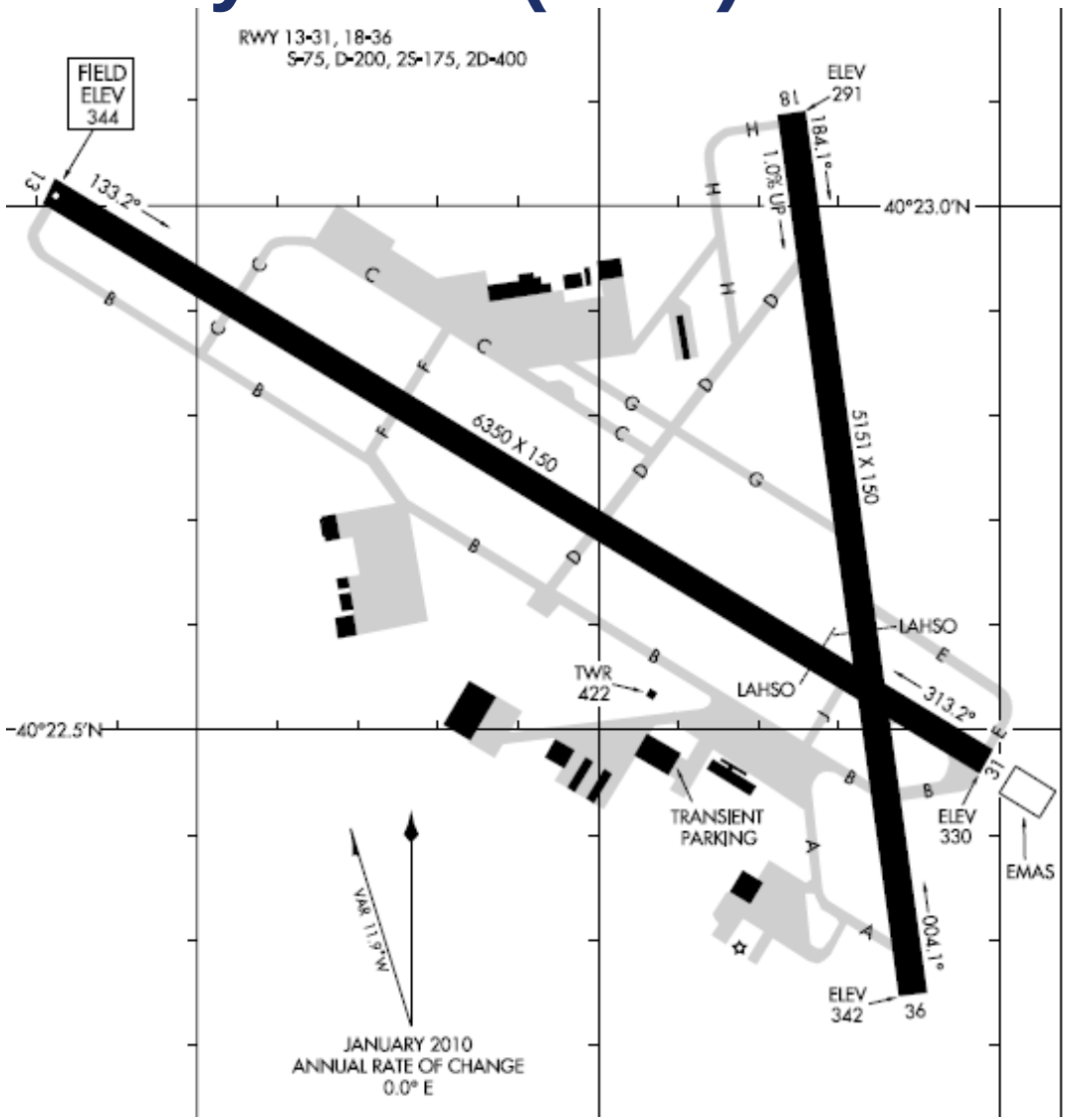
Case Study #3

Case Study #4

In each case, what are the issues? What can be done to reduce risk?

Develop new action items.

Runway Safety Team (RST) – Case Study #2



Runway Safety Team (RST) – Case Study #2

Runway Safety Team (RST) – Case Study #2

Runway Safety Team (RST) – Case Study #2

Runway Safety Team (RST) – Case Study #2

Runway Safety Team (RST) – Case Study #2

Tower and Surface Movement Control were combined. Tower Control cleared a Cessna C550 to land on Runway 31. Two minutes later a tractor vehicle requested to proceed from the terminal ramp to the north ramp. Tower Control issued instructions to cross Runway 31 at Taxiway Delta. Two minutes later the C550 pilot reported to the Tower that they had collided with the tractor at the intersection of Runway 31 and Delta. The left wing hit the tractor as the vehicle drove northeast bound on the runway from Delta. There were no injuries or fire.

Runway Safety Team (RST)

Case Study #1

Case Study #2

Case Study #3

Case Study #4

In each case, what are the issues? What can be done to reduce risk?

Develop new action items.

Runway Safety Team (RST) – Case Study #3

1. Runway resurfacing project.
2. Aircraft and vehicle call sign similarity.
3. Off-airport laser event.
4. Seasonal changes (for example, rainy season, dust season, snow, fog, routine maintenance, construction projects).
5. Head of State operations

Choose one topic to discuss with your team. Identify issues. Develop and coordinate solutions.

Runway Safety Team (RST)

Case Study #1

Case Study #2

Case Study #3

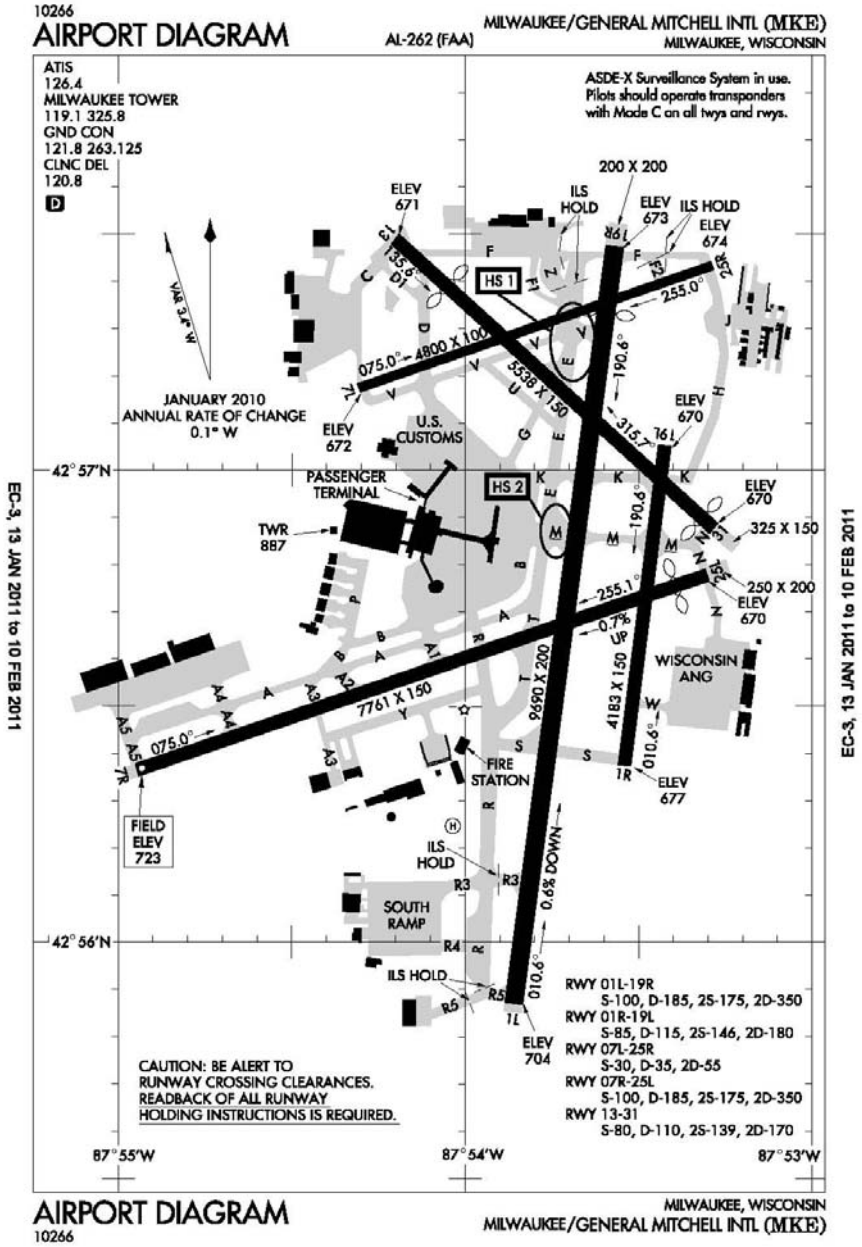
Case Study #4

In each case, what are the issues? What can be done to reduce risk?

Develop new action items.

Runway Safety Team (RST) - Case Study #4

Runway Safety Team (RST) - Case Study #4



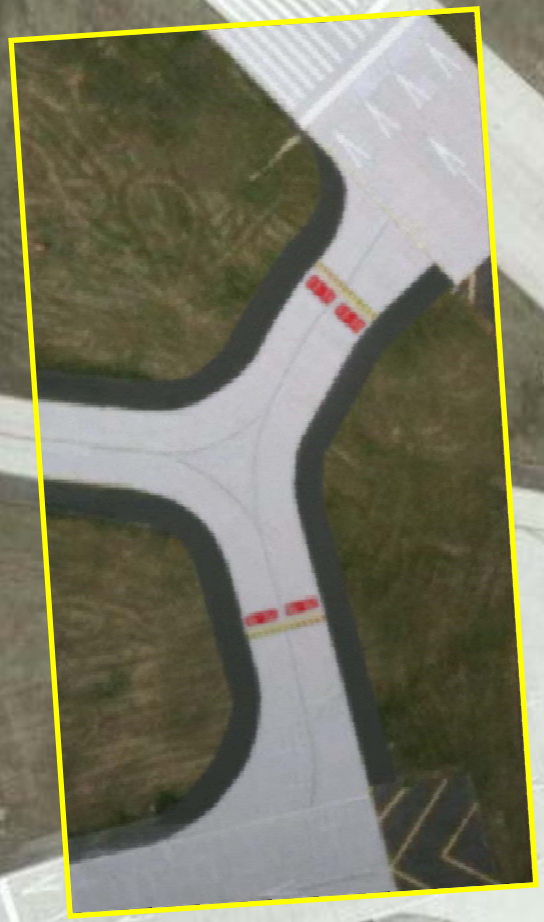
Runway Safety Team (RST) – Case Study #4

The airport has experienced a high number of pilot deviations on Taxiway M at Runway 25L over a period of several months. These pilot deviations involved aircraft taxiing out for departure on Runway 25L. Most of these events involved air carrier turbojet aircraft. In each case, air traffic controllers issued hold short instructions and the pilots acknowledged and read back hold short instructions.

Identify issues. Develop and coordinate solutions.

(RST) - Case Study #4-Initial Solution

(RST) - Case Study #4-Solution



May 6, 2006 through December 21, 2008…
17 pilot deviation incursions

Runway Safety Team (RST)

Case Study #1

Case Study #2

Case Study #3

Case Study #4

Case Study #5

In each case, what are the issues? What can be done to reduce risk?

Develop new action items.

Runway Safety Team (RST) – Case Study #5

The aircraft landed on Runway 12 after completing an ILS approach. The aircraft was traveling at the Vref (landing) airspeed of 148 knots, with a groundspeed of 162 knots with a tailwind component of 14 knots when the wheels made initial contact at about 4,000 feet down the 8,900 foot runway. The runway was reported as wet. The aircraft departed the end of the runway at a groundspeed of 63 knots. The flight data recorder indicated the rate of deceleration was normal for a wet runway. Runway 12 is not grooved.

Identify issues. Develop and coordinate solutions.

Runway Safety Team (RST) – Case Study #5

The aircraft landed on Runway 12 after completing an ILS approach. The aircraft was traveling at the Vref (landing) airspeed of 148 knots, with a groundspeed of 162 knots with a tailwind component of 14 knots when the wheels made initial contact at about 4,000 feet down the 8,900 foot runway. The runway was reported as wet. The aircraft departed the end of the runway at a groundspeed of 63 knots. The flight data recorder indicated the rate of deceleration was normal for a wet runway. Runway 12 is not grooved.

Identify issues. Develop and coordinate solutions.


Runway Safety – Everyone’s Responsibility