



# Guidelines on Runway Safety Team

ACI Asia Pacific  
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## **Forward**

The 11th session of the ACI Asia Pacific Assembly, held in April 2016 in Gold Coast, Australia, adopted a resolution to call upon airports in the region to establish Runway Safety Teams (RST) in recognition of the effectiveness of these multi-stakeholder forums in enhancing runway safety, especially in reducing the risk of runway incursions. While there was no lack of relevant reference materials on the prevention of runway incursion and runway safety, the ACI Asia Pacific Regional Operational Safety Committee felt there was still a need to write a set of simple, easy-to-understand guidelines to help airports quickly start an RST without having to refer to the other, more comprehensive documents. The guidelines were written by voluntary members of the Committee, many of them already having years of experience in successfully running RST in the Asia Pacific cultural environment. A number of practical tips are given on the set up and running of RST such as the writing of terms of reference, scope of work, work methods, and ways of facilitating and encouraging safety hazard reporting.

## **Acknowledgement**

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## **1. Purpose**

The purpose of these guidelines is to help ACI Asia-Pacific member airports establish and operate Runway Safety Teams (RST) so as to facilitate the rectification of runway safety problems by involving all the stakeholders in the identification of runway safety issues, and the establishment and implementation of solutions to these issues.

## **2. Terms of Reference**

When establishing an RST, a set of terms of reference should be drafted to spell out its purpose, composition and work methods in order that all team members understand and agree to its purpose and workings. A typical set of terms of reference of an RST should clearly state:

- its purpose, e.g. identify runway safety issues, and devise and implement solutions to these;
- its team composition, e.g. representatives from:
  - the airport operator;
  - air traffic control (the local service provider or trade association);
  - airlines;
  - pilots;
  - ground handlers;
  - maintenance contractors;
  - other parties operating in the airfield;
  - aviation safety regulator;
  - military at joint civil-military airports; and
  - representatives of aviation trade associations as considered appropriate by members of the RST.
- the incumbent of the position of Chair, preferably the team member representing the airport operator, and if necessary Vice Chair, and the Secretary of the team as well;
- the commitment of all of its members to the protection of safety data shared amongst them during or outside its meetings;
- the minimum frequency of meetings with the proviso that meetings should be held as frequent as needed by the team's work program;
- its scope of work, that is, all issues directly related to runway safety, a suggested list of which is given in paragraph 5 below; and
- its work methods.

## **3. Protection of Safety Data**

The protection of safety data, mentioned in the recommended outline of terms of reference above, is essential for the correct functioning of an RST and this should be spelt out in its terms of reference. The objective of the protection of safety data, as stated in the ICAO Safety Management Manual (Doc 9859) is to “ensure their continued availability, with a view to using it for maintaining or improving aviation safety, while encouraging individuals and organizations to report safety data and safety information”.

#### 4. Frequency of Meetings

The frequency of RST meetings depends on the number of issues to be resolved and the work schedules of its members. It should be determined by consensus amongst members of the team. Typically an RST meets twice to four times a year.

#### 5. Scope of Work

An RST should review all issues affecting runway safety such as:

- Runway design and airfield maintenance;
- Wildlife hazards management;
- Foreign object debris management;
- Runway incursions and excursions;
- Obstacle limitation surfaces;
- Location, design and maintenance of visual and navigational aids such as signs, markings and lightings;
- Its liaison with the aerodrome SMS manager on runway safety hazards;
- Lessons learnt on runway safety; and
- ATC and pilot related procedures.

#### 6. Work Methods

Discussions and decisions made at RST meetings should be recorded in minutes and distributed to its members for follow up.

RST meetings may be immediately followed or preceded by joint inspection of the runway strip and other related areas of the airfield to give all parties the opportunity to identify and discuss runway safety issues onsite and, if possible, discuss solutions to these, or review progress on solutions agreed at previous meetings.

Safety hazards identified or discussed onsite or at meetings should be recorded, reviewed and followed up systematically.

The RST should through its aerodrome operator representative liaise with the aerodrome SMS manager on the identification, recording, follow up and resolution of runway safety hazards. The tracking and follow up of reported and confirmed runway safety hazards should continue until the associated safety risks are adequately mitigated. If a safety hazard recurs persistently, it is a sign that the solutions put in place are inadequate, and the RST should discuss and, if necessary, seek alternative solutions.

**Attachment A** is a template form for recording and tracking of runway safety hazards.

Operators running a number of airports may use a single table summarizing the runway safety issues and solutions at all of its facilities for easier follow up. **Attachment B** is a template form designed for such purpose.

The RST should prioritize the implementation of runway safety enhancements initiatives based on safety risk tolerability and other considerations such as cost and time of solution. **Attachment C** presents an example of risk assessment methodology based on its classifications of likelihoods and consequences, and a registrar of hazards, associated safety risks, and mitigation methods. In general safety hazards with the highest risks should be attended to first.

Some runway safety hazards may require promotional campaigns to raise awareness of the issue amongst relevant personnel such as operational and maintenance personnel. The RST is an ideal forum for discussing safety promotional campaign amongst all stakeholders so that each of them can consistently convey the same safety message to their respective organization.

Between meetings, electronic media such as instant messaging groups on smart phones created for members of the RST, may be used to facilitate and encourage reporting and discussion of runway safety hazards between them. The airport operator may consider hosting such electronic forum and as the host, establish rules for using the forum for example with a set of terms of reference. Dedicated personnel should be assigned to acknowledge, review and follow up on reports received on the electronic platform.

To encourage safety hazard reporting or suggestions of safety enhancements, the initiator should be informed once a safety hazard is mitigated or eliminated or a suggested enhancement implemented.

Amongst its members the RST may promote and encourage sharing of best practices or knowledge in operational safety such as runway rubber removal, wildlife hazard management, runway inspections, and safety data analysis.

Once the safety benefits of RST clearly demonstrated and trust built amongst members, information previously considered confidential such as maintenance schedules, operational plans and wildlife hazard management plan may now be shared to further enhance safety by raising situation awareness and improving coordination of operational and maintenance activities between stakeholders.

**Attachment D** is a list of useful references on related topics such as runway safety in general, wildlife hazard management, and the prevention of runway incursions and excursions.



## Attachment B: Template of a form to summarize runway safety issues at multiple airports

**(Airport Name)** RUNWAY SAFETY TEAM ACTION PLAN SUMMARY (TEMPLATE)

MARK REQUIRED FORM 75  
3/2016

Ref No.	Date	Issue	Solution	Risk Outcome	Risk Rating	Responsibility	1. Status Report/ Timeline	Deadline	2. Status Report/ Timeline	Deadline	3. Status Report/ Timeline	Deadline
<p><i>(Airport name) 1st IAT Audit Findings - dd/mm/yyyy</i></p>												
Airport code (IATA or ICAO)	Audit date	Where and when	actions that are taken to tackle the issue	Runway Excavation	2C	By unit/ Dept	Status of the reported issue	Completion date or expected completion date				
<p><i>(Airport name) 2nd IAT Audit Findings - dd/mm/yyyy</i></p>												
Airport code (IATA or ICAO)	Audit date	Where and when	actions that are taken to tackle the issue	Risk Outcome	Risk Rating	Responsibility	1. Status Report/ Timeline	Deadline	2. Status Report/ Timeline	Deadline	3. Status Report/ Timeline	Deadline
<p><i>(Airport name) 3rd IAT Audit Findings - dd/mm/yyyy</i></p>												
Airport code (IATA or ICAO)	Audit date	Where and when	actions that are taken to tackle the issue	Risk Outcome	Risk Rating	Responsibility	1. Status Report/ Timeline	Deadline	2. Status Report/ Timeline	Deadline	3. Status Report/ Timeline	Deadline

Courtesy of Malaysia Airports

## Attachment C: Sample of Risk Assessment and Risk Registry

### Frequency

Rank	Category	Description (Probability of occurrence)
5	<b>Frequent</b>	Likely to occur many times (has occurred frequently)
4	<b>Occasional</b>	Likely to occur sometimes (has occurred infrequently)
3	<b>Remote</b>	Unlikely to occur, but possible (has occurred rarely)
2	<b>Improbable</b>	Very unlikely to occur (not known to have occurred)
1	<b>Extremely improbable</b>	Almost inconceivable that the event will occur

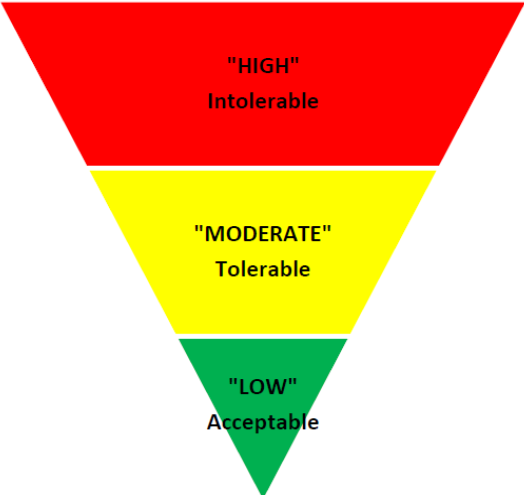
### Consequence

Rank	Category	Description
A	<b>Catastrophic</b>	<ul style="list-style-type: none"> <li>Equipment destroyed</li> <li>Multiple deaths</li> </ul>
B	<b>Hazardous</b>	<ul style="list-style-type: none"> <li>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</li> <li>Serious injury</li> <li>Major equipment damage</li> </ul>
C	<b>Major</b>	<ul style="list-style-type: none"> <li>A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of an increase in workload or as a result of conditions impairing their efficiency</li> <li>Serious incident</li> <li>Injury to persons</li> </ul>
D	<b>Minor</b>	<ul style="list-style-type: none"> <li>Nuisance</li> <li>Operating limitations</li> <li>Use of emergency procedures</li> <li>Minor incident</li> </ul>
E	<b>Negligible</b>	<ul style="list-style-type: none"> <li>Few consequences</li> </ul>

## Attachment C: Sample of Risk Assessment and Risk Registry (cont)

### *Risk Matrix*

Frequency		Consequence				
		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

Tolerability Region	Assessed Risk Index	Criteria
 <p>"HIGH" Intolerable</p> <p>"MODERATE" Tolerable</p> <p>"LOW" Acceptable</p>	5A, 5B, 5C 4A, 4B 3A	Unacceptable under the existing circumstances
	5D, 5E 4C, 4D, 4E 3B, 3C, 3D 2A, 2B, 2C 1A	Acceptable based on risk mitigation. It may require management decision
	3E 2D, 2E 1B, 1C, 1D, 1E	Acceptable

Attachment C: Sample of Risk Assessment and Risk Registry (cont)

	Potential Hazard	Cause	Existing					Risk Reduction				
			F	C	R	Existing Protection	Recommendation/ Action	F	C	R	Comments	Hazard Controller
1.	Communication Hazards	Poor English; Wrong terminology; Poor equipment	4	A	4 A	Internal Training	Training & Certification by Airport Operator	2	B	2 B	Random audit by Airport Operator	Airport Operator
2.	Construction Hazards	Uncoordinated works; Poor worksite demarcation;	3	A	3 A	Works Method Statement in compliance with ICAO	Airfield Committee; Works Permit System; Escorter Training; Daily coordination meetings.	2	D	2 D	On-site inspection to confirm compliance to works conditions.	Airport Operator
3.	Visibility Hazards	Poor visibility due to weather	4	A	4 A	Minimize ground movement	LVO Procedure; Road restriction programme; Escort service to aircraft of taxiing ad on tow.	2	D	2 D	Regular review of the procedure with the Committee	Airport Operator

	Potential Hazard	Cause	Existing					Risk Reduction				
			F	C	R	Existing Protection	Recommendation/ Action	F	C	R	Comments	Hazard Controller
4.	Signage Hazards	Too complicated; Faded out markings; Blocked by glasses; Power supply failure to the signboard	3	A	3 A	Comply with ICAO	Pilots reports; Daily inspections; Monthly grass cutting programme;	2	D	2 D	Regular review of the procedure with the Committee	Airport Operator
5	Operational Hazards	Maintenance vehicles; RFF vehicles	4	A	4 A	Training	Vehicle Transponder Requirement;	2	D	2 D	Regular equipment check;	Airport Operator

	Potential Hazard	Cause	Existing					Risk Reduction				
			F	C	R	Existing Protection	Recommendation/ Action	F	C	R	Comments	Hazard Controller
6	Airport Design Hazards	Too many intersections;  Too many cross-runway aircraft	3	A	3 A	ATC Control	AIC;  Airport Circulars;  Pilot familiarization.	2	D	2 D	Regular review of the procedure with the Committee	Airport Operator

*Courtesy of Airport Authority Hong Kong*

#### **Attachment D: List of Reference Materials**

- ACI Runway Safety Handbook, 1st Edition, 2014
- ACI Safety Management System Handbook, 1st Edition, 2016
- ICAO Manual on the Prevention of Runway Incursions, Doc 9870
- ICAO Safety Management Manual, Doc 9859
- European Action Plan for the Prevention of Runway Incursions, Eurocontrol, ACI Europe et al.
- European Action Plan for the Prevention of Runway Excursions, Eurocontrol et al.
- Reducing the Risk of Runway Excursions, Flight Safety Foundation
- ACI Wildlife Hazard Management Handbook, 2nd Edition, 2013



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