



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**THE SECOND MEETING OF THE APANPIRG AERODROMES  
OPERATIONS AND PLANNING – WORKING GROUP (AOP/WG/2)**

Yogyakarta, Indonesia, 3 – 5 June 2014

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**Agenda Item 4: Provision of AOP in the Asia/Pacific Region**

**RUNWAY SAFETY TEAM – A SINGAPORE AIR NAVIGATION  
SERVICES PROVIDER’S EXPERIENCE**

(Presented by Singapore)

**SUMMARY**

This paper presents Singapore Air Navigation Services Provider’s (ANSP) perspective on the formation of the Runway Safety Teams (RSTs) in both Singapore Changi Airport and Seletar Airport and the benefits brought about through the initiatives and measures taken by these RSTs. The structure and modality of the RSTs, leveraged on the strong partnership among the ANSP, airport operator, airline operators, ground handling agent and other stakeholders is discussed in this information paper.

This paper relates to –

**Strategic Objectives:**

*A: Safety – Enhance global civil aviation safety*

*B: Air Navigation Capacity and Efficiency – Increase Capacity and improve efficiency of the global civil aviation system*

**1. INTRODUCTION**

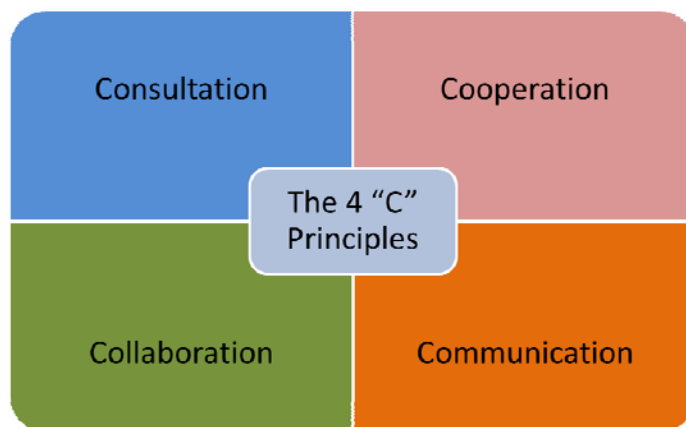
1.1 In pursuant to ICAO Assembly Resolution A37-6 on runway safety, including the establishment of runway safety programmes, Singapore embarked on a journey to further enhance the safety of runway operations in its airports — the formation of Runway Safety Teams (RSTs). Runway safety is imperative for high intensity runway operations, especially when Singapore Changi Airport saw over 9% growth annually in terms of traffic movements over the last three years.

1.2 When Singapore implemented the Safety Management System, it followed up with the implementation of the Singapore State Safety Programme (SSP) which commensurate with the complexity of its aviation system. Amongst the focus areas under the framework of the SSP, one of the key areas is safety promotion. To this end, the establishment and function of the runway safety teams for Singapore Changi Airport and Singapore Seletar Airport have served as good platforms to addressing safety issues as well as promote good safety practices.

## 2. DISCUSSION

### The Principles, Structure and Terms of Reference of Runway Safety Team

2.1 Assurance of aircraft safety on the manoeuvring area and mitigating problem areas where solutions are not immediately available are among the objectives of a RST. Built on the four “C” principles, i.e. Consultation, Cooperation, Collaboration and Communication, the RSTs are always looking at ways to enhance the safety of the aerodrome operational environment through technological and procedural means, the latter being continual improvement on understanding of the strengths and overcoming the weaknesses needed to enhance the capability of the human-in-the-loop.

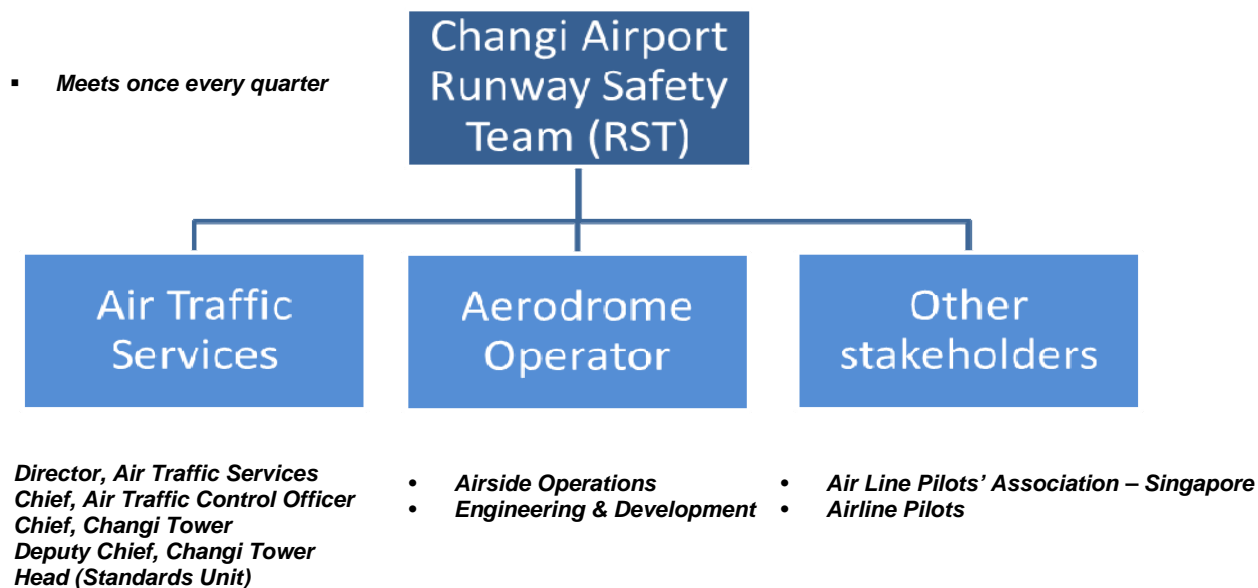


2.2 The Terms of Reference (TOR) of the RSTs set the stage and tone of the groups and its purposes. Members of the two RSTs comprise stakeholders from the existing network of the airport / aviation community. In general, the ANSP and the airport operator (including its engineering and airside operations units) provide leadership to both RSTs which comprise airline operators and ground handling agents. In the case of Seletar, it includes flying training schools and private aircraft owners too. Broadly, the RSTs dwell into but are not limited to the following areas to enhance runway safety:

- 2.2.1 Identify local problem areas and suggest improvements where necessary
- 2.2.2 Working together to better understand the operating difficulties of other areas and suggest improvements where applicable
- 2.2.3 Analyze and comment on modification proposals affecting the manoeuvring areas at the airside and if necessary initiate new procedures, works, working method, new equipment to ensure they are ICAO compliant
- 2.2.4 Reviewing investigation reports of incidents to identify hotspots or problem areas at the aerodrome
- 2.2.5 Monitoring the communication procedures of airside vehicle drivers

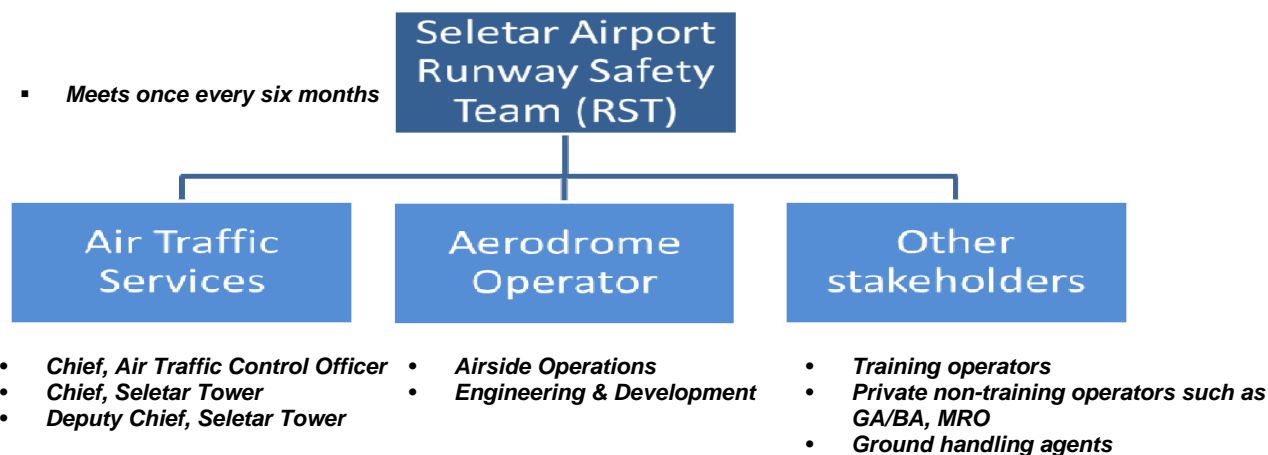
### Changi Runway Safety Team

2.3 The structure of the Singapore (Changi) RST is as shown in the figure below.



#### Seletar Runway Safety Team

2.4 The structure of the Seletar RST is as shown in the figure below.



#### Achievements by the Runway Safety Teams

2.5 The RSTs actively seek to identify and address problem areas or hotspots within the aerodrome that are hazardous to users. Upon identification of any hazard, the RST-concerned will immediately look for solutions or mitigating measures to reduce the risks, both during the RST forum or offline with the stakeholders.

2.6 One noteworthy example is the publication of a Changi Airport “hotspots” chart in the Singapore Aeronautical Information Publication (AIP). This chart, a collaborative work by the Changi Airport RST members, provides a visual reference of the areas / corners within the Changi Airport airside where errors by pilots might potentially be higher. The result is significant, there have been fewer errors reported at those taxiway junctions marked in the “hotspots” chart. Better overall awareness has often been cited by pilots as the main benefit of the “hotspots” chart.

2.7 Issues can also be addressed offline through other means of communication. In a Seletar example, following a series of Foreign Object Damage (FOD) reports made over a short period, Seletar ATC raised the FOD issue to alert RST members. This kick started a series of engagement and campaigns within the Seletar aviation community on the need to maintain a FOD-free airside and runway for safe operation. The information shared raised the awareness level of the stakeholders and the effect was evident, i.e. an immediate sharp reduction of FOD in the manoeuvring area.

2.8 In late-2013, a runway incursion incident took place in Changi Airport as a result of miscommunication between ATC and airfield inspection vehicle. This incident raised awareness on the inappropriate radio telephony used between ATC and airside vehicles operating on the manoeuvring area. Discussions were conducted immediately to correct and standardize the phraseologies to be used. Recognising there could be similar risks in Seletar Airport, Seletar ATC initiated a refresher training on commonly used Radiotelephony Phraseologies (RTF) between air traffic controllers and ground handling agent / tow crew during one of its RST meetings. The materials produced were shared with the ground handling agent / tow crew-in-attendance as well as for their further sharing within their respective organizations. Regular checks conducted on both ATC and vehicle operators to ensure compliance to the use of standard phraseologies have seen evidences of better quality RTF exchanges between Changi/Seletar ATC and the airside drivers.

2.9 The above cases are some examples of the successes by the Changi Airport RST and the Seletar Airport RST. The measures taken show the effectiveness of the collaborative efforts between the Singapore ANSP and the other aerodrome stakeholders to enhance safety in the airside.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper.

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