

**55th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGIONS**

*Denarau Island, Nadi, Fiji
22 — 26 October 2018*

AGENDA ITEM 3: AVIATION SAFETY

**SAFEGUARDING FROM RUNWAY INCURSIONS AT
INDIAN AIRPORTS**

Presented by India

INFORMATION PAPER

SUMMARY

This paper provides information about the progress made by India in implementing the safety measures to prevent Runway Incursion. It also highlights the various safety system adopted in India. This paper also exchange information on best practices in improving runway safety through the use of effective and innovative strategies, tools, technology and practices.

SAFEGUARDING FROM RUNWAY INCURSIONS AT INDIAN AIRPORTS

1. INTRODUCTION

1.1 Description

A Runway Incursion is defined as “Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft”. (ICAO Doc 4444 - PANS-ATM). It should be noted that this 'incorrect presence' may be a consequence of a failure of a pilot or vehicle driver to comply with a valid ATC clearance or their compliance with an inappropriate ATC clearance.

1.2 Effects

An increased risk of collision for aircraft on the ground. When collisions occur off the runway, the aircraft and/or vehicles involved are usually travelling relatively slowly: in contrast, when a collision occurs on the runway, at least one of the aircraft involved will often be travelling at considerable speed which increases the risk of significant aircraft damage and the severity of the consequences there from, including serious or fatal injury.

1.3 Most Common Runway Incursion Types

According to the analysis of a sample of investigated accidents and serious incidents involving runway incursions which occurred in the period 2014-2016, the following generic types can be distinguished:

- a) Incorrect entry of an aircraft or vehicle onto the runway protected area.
- b) Incorrect presence of a vacating aircraft or vehicle onto the runway protected area.
- c) Incorrect runway crossing by an aircraft or vehicle (without or contrary to ATC clearance or due to incorrect ATC clearance)

1.4 Contributory Factor

- i. Weather.
- ii. Aerodrome design.
- iii. Multiple Simultaneous Line-ups.
- iv. Conditional Clearances
- v. Simultaneous Use of Intersecting Runways.
- vi. Late Issue of or late changes to Departure Clearances.
- vii. Phraseology
- viii. Concurrent Use of More than One Language for ATC communications
- ix. English Language Competence
- x. Distraction

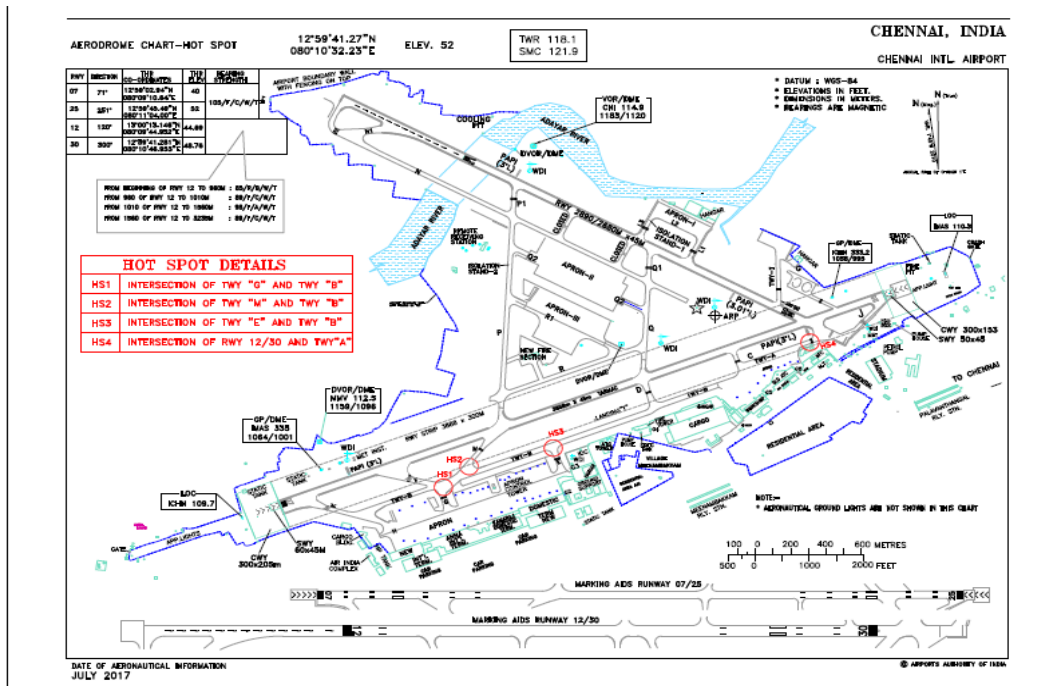
1.5 Safety Measures Already in Place

DGCA References	Safety Measures Already in Place
CAR Section 4, Series X, Part I	Runway safety Programme and formation of Runway Safety Team
Air Safety Circular 04 of 2007	Guidance material issued for safety on the apron
Aerodrome Advisory Circular 04 of 2017	Guidance on establishment of Apron Management Service at an aerodrome
CAR Section 4, Series B, Part I	Aerodrome Design and Operations- Guidance on installation of Stop Bars
ICAO Doc 9870	Manual on the Prevention of Runway Incursion

2. DISCUSSION

2.1 With the recent double digit growth in air traffic in India and enhancement of capacity at all major international airports across the country, it has become vital that runway safety programs are adopted to prevent runway incursions that may lead to incidents/ accidents.

2.2 Prevention of runway incursion starts with the establishment of Runway Safety Teams (RST) at every airport. In India, Runway safety team comprising of representatives from aerodrome operator, air traffic service, aircraft operator and ground handlers has been established at every licensed aerodrome. At international airport Runway safety team assess the severity of runway incursion and Hot Spots have been identified and published in AIP to prevent runway incursion.



2.3 Runway safety team focus on the movement area at the taxiway entry points, markings, signs, and lighting at the taxi-holding position (stop bars, runway safety lights), and the location of the runway holding position. Based on the concept “Never cross RED” Stop Bars are installed on taxiways to prevent Runway incursions by aircraft and vehicles. The Stop bars are operating 24 hours in all weather conditions at International Airports, which provide significant safety benefits to Pilots and vehicle drivers on maneuvering area.

2.4 At International Airport enhanced taxiway centerline marking are provided up to 45m from the holding position marking to alert aircraft and vehicles that they are approaching a Runway.



2.5 Aerodrome Operator in India provides familiarization of aerodrome layout and site training experience to know the aerodrome signs, markings and lighting to the ground vehicle drivers, as prevention measures for Runway Incursion. A classroom training is also imparted for correct interpretation of information provided by signs, markings and lightings.

2.6 Runway incursion incident in India and commitment to reduce runway incursion with effective compliance of SARPs:

S.No.	Runway incursion	Actual 2017	Target 2018	Target 2019
1.	Number of runway incursions (aircraft) per 10,00,000 movements	7.95	7.71	7.47
2.	Number of runway incursions (vehicle) per 10,00,000 movements	0.42	0.4	0.38
3.	Number of runway incursions (person) per 10,00,000 movements	1.67	1.62	1.57
4.	Number of runway incursion incidents involving loss of situational awareness by pilots, non-familiarization with aerodrome layout, distraction per 10,00,000 movements	2.09	2.02	1.95

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to note the information contained in this Paper.

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