Runway Incursions

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Introduction

- In many countries where traffic density is high runway incursions have been on the increase for several years.

- 2001 - ICAO took action to address the problem of runway incursions.

Objectives

- Types of Runway Incursions & Excursions.
- Differences between Runway Incursions & Excursions.
- Reasons that lead to Runway Incursions?
- Runway Incursions preventive programme.
- Runway Safety Teams.RST
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Definitions of:

- Runway Incursions.
- Aerodrome.
- Runway.
- Runway Incursions & Excursions.
- Hot spots.
ICAO Definition-

Aerodrome

A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.
Runway

A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.
Runway Incursions

“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 takeoff of aircraft.”
Runway incursions can occur everywhere EVEN
Runway Excursions

A veer off or overrun off the runway surface.

_Description:_
A runway excursion occurs when an aircraft departs the runway in use during the take-off or landing run. The excursion may be intentional or unintentional.
Examples of Runway Excursions

- A departing aircraft fails to become airborne or successfully reject the take off before reaching the end of the designated runway.
- A landing aircraft is unable to stop before the end of the designated runway is reached.
- An aircraft taking off, rejected takeoff or landing departs the side of the designated runway.
- An aircraft attempting a landing touches down in the undershoot area of the designated landing runway within the aerodrome perimeter.
Examples of runway incursion:

An aircraft or vehicle crossing in front of:

- an aircraft while landing / taking off or vehicle:
  - crossing the runway-holding position marking;
  - unsure of its position and entering an active runway;
  - passing behind an aircraft or vehicle that has not vacated the runway.
- failure to follow ATC instructions.
What are the reasons that lead to Runway Incursions?

A breakdown in communications between controllers and pilots or airside vehicle drivers is a common factor in runway incursions and often involves:

- Use of non-standardized phraseology;
- Failure of the pilot or the vehicle driver to provide a correct read back of an instruction;
- Failure of the controller to ensure that the read back by the pilot or the vehicle driver conforms;
Misunderstanding the controller’s instructions;

The pilot and/or vehicle driver accepting a clearance intended for another aircraft or vehicle;

Blocked transmissions; and

Complex transmissions.
Pilot factors

Airplane icon

Pilot factors that may result in a runway incursion (non-compliance with ATC clearances). Often these cases result from a breakdown in communications or a loss of situational awareness in which pilots think that they are at one location on the aerodrome (such as a specific taxiway or intersection) when they are actually elsewhere, or they believe that the clearance issued was to enter the runway, when in fact it was not.
ATC factors

The most common controller-related actions identified in several studies are:

- forgetting for a short time about:
  - An aircraft;
  - The closure of a runway in use;
  - A vehicle on the runway; or
  - A clearance that had been issued;
Some major reasons for Runway incursions

- Failure to anticipate the required separation, or miscalculation of the impending separation;
- Inadequate coordination between ATC controllers;
- A crossing clearance issued by a ground controller instead of tower controller;
- Misidentification of an aircraft or its location;
- Failure of the controller to provide a correct read back of another controller’s instruction;
Failure of the controller to ensure that the readback by the pilot or the vehicle driver conforms with the clearance issued;
Communication errors;
Complex instructions;
Use of non-standard phraseologies; and
Decreased reaction time due to on-the-job training.
Airside Vehicle Driver Factors

The most common driver-related factors identified in several studies are:

- Failure to obtain clearance to enter the runway;
- Failure to comply with ATC instructions;
- Inaccurate reporting of position to ATC;
- Communication errors;
Inadequate training of airside vehicle drivers;
Absence of radiotelephony equipment;
lack of familiarization with the aerodrome;
lack of knowledge of aerodrome signs and markings; and
lack of aerodrome maps for reference in vehicles.
Complex or inadequate aerodrome design significantly increases the probability of a runway incursion.
Developing A Runway Incursion Prevention Programme
A runway incursion prevention programme should create with the establishment of Runway Safety Teams for each aerodrome.

The main role of a local runway safety team, which may be coordinated by a central authority, should be to develop an action plan for runway safety, advise management as appropriate on potential runway incursion issues and recommend strategies for hazard removal and mitigation of the risk. These strategies may be developed based on local occurrences or combined with information collected elsewhere.
The team should include representatives of:

- Aerodrome operations;
- Air Traffic Service Provider, ANSP;
- Aircraft Operators.

- Any other groups with a direct involvement in runway operations.
RST Objectives

- To improve runway safety data collection, analysis and dissemination;
- To check that signage and markings are ICAO-compliant and visible to pilots and drivers;
- To develop initiatives for improving the standard of communications;
- To identify potential new technologies that may reduce the possibility of a runway incursion; and
- To conduct local awareness and distributing runway safety education and training material to controllers, pilots and drivers.
Some interventions being rolled out many aerodromes have hazardous locations on taxiways and/or runways where incidents have occurred. Such positions are commonly referred to as "hot spots".

**Definition of “Hot spots’**

A location on an aerodrome movement area with a history potential risk of collision or runway incursion, and where Heightened attention by pilots/drivers is necessary.

*(ICAO Doc 9870, Manual on the Prevention of Runway Incursions).*
Runway Hot Spots Formal identification of hotspots can alert pilots and drivers to movement area by signage or lighting or where poor visibility may contribute reduced Situational Awareness in relation to active runway design issues which cannot be readily mitigated,\, It can also alert to potentially critical.

ICAO recommends the local generation of AIP charts to show runway hotspots, which, once issued, must be kept up to date and revised as necessary.
Let's be pro-active and do something!!!!
SAFETY
Is EVERYONE'S
RESPONSIBILITY
Thank You