

RUNWAY INCURSION PREVENTION AND PILOT TRAINING

1. INTRODUCTION

This Aeronautical Information Circular (AIC) is issued for information and guidance. It describes an example of an acceptable means, but not the only means, of demonstrating compliance with relevant regulations and standards. This AIC does not amend regulatory requirements, or establish minimum standards.

It highlights that guidance and training materials can support the development and implementation of Standard Operating Procedures (SOPs) and dedicated runway incursion (RI) training programmes for pilots.

1.1 Purpose

To emphasise the importance of pilot training in reducing the likelihood of and severity of runway incursions by incorporating RI content into flight crew qualification, approved training, and other pilot training programmes. The objective is to strengthen the pilot's ability to recognise and avoid RI-prone situations.

1.2 Applicability

This AIC applies to air operators, aerodrome operators, Air Navigation Service Providers, and air traffic controllers, ground handling and airside vehicle operators, and other stakeholders involved in aerodrome surface operations.

2. REFERENCES AND DEFINITIONS

2.1 Reference Material:

- ICAO DOC 9870 - Runway Incursion Prevention Manual
- ICAO Doc 4444 - Air Traffic Management
- ICAO Global Runway Safety Programme/ Global Runway Safety Action Plan [GRSAP]

2.2 Definitions

- Runway Incursion: 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).

- **Local Runway Safety Team (LRST):** A multi-disciplinary team (aerodrome operations, ANSP/ATC, operators, pilot and ATC representatives, and any other parties involved in runway operations) that advises management on RI issues and recommends mitigation strategies. (ICAO Doc 9870)

2.3 The following abbreviations are used in this document:

- (a) **AIC:** Advisory Information Circular
- (b) **ANSP:** Air Navigation Service Provider
- (c) **APAC:** Asia Pacific
- (d) **APRAST:** Asia Pacific Regional Aviation Safety Team
- (e) **ATC:** Air Traffic Control
- (f) **ATS:** Air Traffic Services
- (g) **CANSO:** Civil Air Navigation Services Organisation
- (h) **CFIT :** Controlled Flight Into Terrain
- (i) **GA:** General Aviation
- (j) **GASP:** Global Aviation Safety Plan
- (k) **LOC-I:** Loss of Control Inflight
- (l) **RASG:** Regional Aviation Safety Group
- (m) **RI:** Runway Incursion
- (n) **SEI:** Safety Enhancement Initiative
- (o) **SOP:** Standard Operating Procedure

3. BACKGROUND

- 3.1 ICAO's Global Aviation Safety Plan (GASP) prioritises action to improve runway safety and reduce Controlled Flight into Terrain (CFIT) and Loss of Control In-flight (LOC-I) events, contributing to continuous reductions in the global accident rate.
- 3.2 In alignment with the ICAO GASP, the APRAST Runway Safety Subgroup initiated a Safety Enhancement Initiative (SEI) to promote SOPs and RI training for pilots to reduce RI occurrences and accidents.
- 3.3 International data indicate that a significant proportion of RIs (approx. 65%) are pilot-attributed, with a large share (approx. 75% of this) associated with general aviation (GA).
- 3.4 Common contributing factors (often in combination) include:
 - Aerodrome complexity/variations from standard
 - Inadequate/unreadable airfield signage, markings or lighting
 - Communications issues (ambiguous or misunderstood transmissions, frequency congestion)
 - Human factors (fatigue, distraction, complacency)
 - Environmental conditions (weather, visibility)
 - Inadequate pre-taxi planning of ground movements
 - Incorrect application of rules and procedures

- Gaps in training/knowledge of aerodrome markings, signs, lights, and runway-surface procedures
- 3.5 Very few runway incursions occur as a result of a single factor, with the majority resulting from a combination of factors. For example, GA aerodromes which are used for pilot training, are often complex in design and have a lot of traffic and communication. Add to this the factors associated with an inexperienced, or trainee pilot and the likelihood of a runway incursion is significantly increased.
- 3.6 Fiji can reduce RI risk by ensuring RI training is included in:
- State-defined syllabi for license issue and maintenance;
 - Air Operator training, including company SOPs, type-rating and re- current training, and
 - Location-specific training, addressing known RI threats (hot spots) at aerodromes used by the operator.
- 3.7 This training should be complemented by;
- Requirements for operators to develop and implement RI-related SOPs; and
 - Ongoing regulatory surveillance of aerodromes, ANSP, operators and airside organisations.

4. TRAINING COMPONENTS

4.1 Pilot Training - Minimum Elements

1. Human Factors: Fatigue management, distraction traps, complacency defences, situational awareness.
2. Communication: Standard R/T phraseology; complete and correct readbacks (including runway designator on hold-short/line-up/crossing/enter/land clearances); sterile cockpit during taxi.
3. Aerodrome Knowledge: Markings, signage, lighting, use of current aerodrome charts, recognition of “hot spots,” stop bars, and runway guard lights.
4. Taxi and Runway Procedures: Briefing and planning of taxi routes; positive runway identification before entering or crossing; hold-point discipline; stop-bar compliance; heads-up “eyes-out” checks before crossing/entering.
5. Scenario-Based Training: Line-Oriented Flight Training (LOFT) or equivalent scenarios reflecting local layouts, mixed-mode operations, low-vis procedures, night operations, and contingency (e.g., late runway change, conditional clearances).

6. Visual Scanning: Reinforced “look-out” procedures, especially before entering/crossing any runway.

4.2 Ground Crew and Airside Vehicle Operators

1. Situational Awareness: Use of charts/signage and visual cues on the manoeuvring area.
2. Communications: Clear, standardised phraseology and readbacks with ATC.
3. Best Practices: Compliance with vehicle control procedures, speed limits, lighting/hi-viz requirements, and runway/holding-point discipline.

4.3 Aerodrome Operators/ Managers

1. Infrastructure Oversight: Review and continuous improvement of markings, signage, lighting, surface layout, and “hot spot” publication.
2. Safety Culture Promotion: SMS implementation; LRST coordination; data-driven mitigations for local RI precursors.

5. ACTIONS REQUIRED

5.1 Air Operators should:

1. Integrate RI training into all pilot licensing and operator training syllabi (initial and recurrent).
2. Develop, maintain, and implement SOPs addressing RI prevention (taxi, hold-short, crossing, line-up, and take-off procedures; late runway change protocol; rejected take-off and runway-vacation procedures).
3. Require systematic use of SOPs by flight crew to reduce RI risk.
4. Include location-specific modules for aerodromes served, addressing published hot spots and local procedures.

5.2 Cross-Industry Coordination

Although this AIC focuses on the provision of RI training for pilots, it is also recommended that, through existing regulatory processes, stakeholders should ensure RI prevention is considered when reviewing the infrastructure, operational procedures and training for aerodromes, ANSP and airside vehicle operators.

6. GUIDANCE MATERIAL

- 6.1 The ICAO Runway Safety iKit and associated resources provide training content and implementation guidance for RI prevention programmes and SOP development http://cfapp.icao.int/tools/RSP_ikit/story.html.
- 6.2 The guidance also supports improvements in related areas such as unstable approaches, runway excursions, and other aerodrome surface operations.