



International Civil Aviation Organization

Safety Enhancement Implementation Group

Fifth Meeting (SEIG/5)
(Doha, Qatar, 15-17 October 2023)

Agenda Item 2: Regional Performance Framework for Safety

RUNWAY EXCURSION DETAILED IMPLEMENTATION PLAN

(Presented by IATA)

SUMMARY

This paper presents the recommendations to states as well to operators to consider reducing the risk of Runway Excursion (RE).

Analysing the 10 years of data (2013-2022) on Runway Excursion (RE), a veer off or overrun from the runway surface, with 125 occurrences, is marked as the most frequent accident. Also, in last 10 years, RE is the third highest cause of fatal accidents with 8 accident occurrences, resulting in 88 fatalities. These accidents occur during take-off or on landing and involve many factors ranging from unstable approaches to the condition of the runway.

The persistence of RE accidents and serious incidents requires revising and updating recommendations and actions, with the aim of reducing the frequency and the rate of occurrences.

Action by the meeting is at paragraph 3.

1. INTRODUCTION

1.1 Runway Excursion (RE) is a high-risk accident category (HRC). The risk of RE accidents depend on few factors involving different industry stakeholders, including operators, airports, aircraft manufacturers and air navigation service providers (ANSPs). Mitigating the risk of RE is best done cooperatively among the stakeholders. Examples of international collaboration are the *Global Action Plan for the Prevention of Runway Excursions (GAPPRE)* and the *Global Runway Safety Action Plan (GRSAP)*. Both documents provide recommendations and actions for all runway safety stakeholders, with the aim of reducing the frequency and the rate of runway excursions.

1.2 Analyzing the 10 years of data (2013-2022) on Runway Excursion (RE), a veer off or an overrun from the runway surface, is marked as the most frequent accident with 125 occurrences. and the third cause of fatal accidents with 8 fatal accidents, resulting in 88 fatalities. These accidents occur while during take-off or on landing and involve many factors ranging from unstable approaches to the condition of the runway.

1.3 IATA has identified some recommendations and actions to reduce the risk of Runway Excursions to be discussed by SEIG/5 group.

2. DISCUSSION

2.1 Recommend the active contribution and participation in safety information sharing programs, and regional and local safety groups in the states. This facilitates the free exchange of relevant runway safety information, including identified risks, safety trends and best practices.

- a) Regulations should be in place for the protection of safety information
- b) Regulations should encourage a positive safety culture
- c) Ensure Terms of reference for data sharing programs are clearly focused on safety objectives, and the protection of safety information and its sources
- d) Promote data sharing programs alignment with The Commercial Aviation Safety Team/ICAO Common Taxonomy Team (CICCT) standards to enable safety information sharing with other data sharing programs.

2.2 Operators should clearly define stabilized approach, landing and go-around polices in their operations manual, in accordance with regulations requirements and manufacturers guidance.

2.3 The Airline Operators must improve the training to prevent RE accidents.

- a) Operators should implement the consolidated threat and error management (TEM) principles where the pilot competencies represent the flight crew countermeasures. Those principles are compliant with ICAO provisions and industry best practices.
- b) Operators should emphasize the proper use of stopping devices, especially when runway conditions are unfavorable.
- c) Recommend a competency-based approach for pilot training sessions.

2.4 In the Appendix "A" the list of the factors cited in one or more of the Runway Excursion accidents that could be used by stakeholders to promote the use of proven technologies that can help reduce RE.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information presented.
- b) introduce, support, and develop actions which have the potential to reduce the regional aviation risk in MID Region effectively and economically

APPENDIX A

Factors Involved in Runway Excursions

Runway excursions are usually the result of one or more of the following factors:

➤ **Aircraft Malfunction**

- Power-on touchdown (i.e., preventing the auto-extension of ground spoilers, as applicable)
- Failure to detect non-deployment of ground spoilers (e.g., absence of related standard call)

➤ **Human Factors**

- Flying pilot adherence to procedures
- Non-Flying Pilot (NFP) crosscheck
- Embedded piloting skills
- Pilot fatigue
- Aircraft handling

➤ **Crew Technique/Decision Factors**

- Rejected take off (RTO) initiated at speed greater than V_1
- Un-stabilized approaches
- No go-around decision when warranted
- Inadequate pilot directional control
- Approach - high
- Approach - fast
- Touchdown - fast
- Touchdown - hard
- Landing long
- Bouncing and incorrect bounce recovery
- Ineffective braking on runway contamination
- Pilot techniques in wind shear conditions
- Pilot technique on wet/contaminated runways
- Use of the nosewheel-steering tiller at an excessive airspeed
- Airspeed too fast on the runway to exit safely
- Extended flare (allowing the aircraft to float and to decelerate [bleed excess airspeed] in the air uses typically three times more runway than decelerating on the ground)
- Late braking (or late takeover from autobrake system, if required)
- Increased landing distance resulting from the use of differential braking or the discontinued use of reverse thrust to maintain directional control in crosswind conditions

➤ **Weather Factors**

- Runway condition (wet or contaminated by standing water, snow, slush or ice)
- Wind shear
- Weather information availability and accuracy
- Reverse-thrust effect in wind and on a wet runway or a contaminated runway

Air Traffic Management

- Lack of awareness of stabilized approach criteria
- Failure to provide timely or accurate runway condition information to pilots
- Failure to provide timely and accurate weather condition to pilots

➤ **Airports / Regulators**

- Runways are not maintained to minimize effective friction and drainage
- Inaccurate runway condition reports
- Inadequate runway end safety areas (RESAs)
- Lack of timely NOTAM issuance of on Runway condition

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