International Civil Aviation Organization

MIDANPIRG/22 & RASG-MID/12 Meetings

(Doha, Qatar, 4 – 8 May 2025)

Agenda Item 4.2: Outcomes of the RASG-MID Groups (SEIG/6 Meeting)

REDUCING THE RISK OF UNSTABLE APPROACHES IN THE MID REGION

(Presented by the Islamic Republic of Iran)

SUMMARY

Unstable approaches are a major contributor to accidents during the approach and landing phases of flight. In the Middle East (MID) Region, the frequency of unstable approaches is concerning, contributing to increased risks of runway excursions, hard landings, and go-around decisions that are not made in a timely manner. This working paper presents practical, actionable steps to mitigate the risk of unstable approaches by focusing on flight data monitoring, pilot training, air traffic control (ATC) procedures, and airport infrastructure improvements. These recommendations aim to provide immediate safety benefits with a focus on improving operational efficiency.

Action by the meeting is at paragraph 7.

REFERENCE

- ICAO DOC 9859- SAFETY MANAGEMENT MANUAL
- ICAO DOC 9613- MANUAL ON PERFORMANCE-BASED NAVIGATION
- ICAO DOC 4444- AIR TRAFFIC MANAGEMENT
- ICAO DOC 10004- GLOBAL AVIATION SAFETY PLAN

1. INTRODUCTION

1.1 Unstable approaches remain a significant contributing factor to aviation accidents, especially during the final approach and landing phase. ICAO reports indicate that a large proportion of unstable approaches are continued despite being identified as unsafe, leading to an increased risk of incidents such as runway excursions, hard landings, and fatalities.

1.2 In the MID Region, operational pressures such as high-density air traffic, complex airspace, and challenging weather conditions make it crucial to address the risks associated with unstable approaches. It is essential for MID States to implement effective, pragmatic solutions to reduce the occurrence of unstable approaches and improve overall safety.

1.3 This working paper focuses on practical, data-driven solutions that can be quickly implemented to reduce unstable approach risks, such as real-time flight data monitoring, simplified approach procedures, enhanced ATC-pilot communication, and practical training for both pilots and air traffic controllers.

2. REAL-TIME FLIGHT DATA MONITORING (FDM) AND DATA ANALYTICS

2.1 Standardized and simplified approach procedures are essential to reduce variability and enhance the predictability of the final approach. ICAO's Performance-Based Navigation (PBN) procedures and Continuous Descent Operations (CDO) are ideal for ensuring that approaches are stabilized early and maintain a consistent descent rate (ICAO Doc 9613).

2.2 MID States should implement and harmonize PBN approach procedures at key airports, especially those with complex airspace or challenging environmental conditions. Standardization of approach procedures will minimize deviations, enhance stability, and reduce the workload on pilots and air traffic controllers.

2.3 A specific emphasis should be placed on optimizing approach profiles and minimizing last-minute adjustments. The use of automated descent profiles and tailored approach clearances can allow for smoother, more predictable arrivals, thereby reducing the likelihood of unstable approaches.

3. GO-AROUND CULTURE AND PILOT DECISION-MAKING

3.1 Pilots often continue with unstable approaches due to operational pressures, leading to potential accidents. Establishing a non-punitive go-around culture, where pilots feel supported in executing go-arounds when necessary, is essential to reducing risks associated with unstable approaches (ICAO Doc 9859).

3.2 To create a supportive environment for go-arounds, MID States should implement training and awareness programs that emphasize the safety benefits of go-arounds and ensure that pilots and air traffic controllers work together to facilitate timely go-around decisions.

3.3 Additionally, airlines should integrate go-around decision-making into their standard operating procedures (SOPs), ensuring that pilots are equipped with the skills and knowledge to make quick decisions in the face of unstable approaches.

4. OPTIMIZING AIR TRAFFIC CONTROL PROCEDURES

4.1 Enhanced coordination between air traffic controllers and pilots is critical to reducing the risk of unstable approaches. Real-time communication should be emphasized, particularly regarding approach sequencing, altitude assignments, and speed control.

4.2 The implementation of Time-Based Flow Management (TBFM) systems in busy airspace regions allows for better management of approach times and sequencing, which can reduce stress on pilots and help stabilize approaches. By optimizing the timing of approach clearances and sequencing of aircraft, ATC can reduce the need for last-minute adjustments, which are often a key factor in unstable approaches.

4.3 Training programs for air traffic controllers should focus on handling high-density arrivals and managing unstable approaches through coordinated actions with pilots.

5. RECOMMENDATIONS

5.1 Adopt Real-Time Flight Data Monitoring (FDM): MID States should encourage the adoption of FDM systems to monitor flight performance during the approach phase in real-time. By tracking deviations from standard approach profiles, operators and regulators can implement immediate corrective actions to prevent unstable approaches (ICAO Doc 9859).

5.2 Standardize and Simplify Approach Procedures: To reduce variability, MID States should standardize approach procedures and adopt PBN and CDO methods at major airports, ensuring

stable and predictable approaches (ICAO Doc 9613).

5.3 Promote a Non-Punitive Go-Around Culture: Implement training programs to promote a non-punitive culture that encourages pilots to execute go-arounds when needed. This approach should be supported by both airlines and air traffic controllers to ensure timely decision-making in critical situations (ICAO Doc 9859).

5.4 Enhance ATC and Pilot Coordination: Enhance communication between pilots and ATC during the approach phase to ensure timely sequencing and approach management. The use of tools like TBFM should be expanded to improve coordination and reduce the risk of unstable approaches.

5.5 Invest in Scenario-Based Training: MID States should invest in scenario-based training for pilots and air traffic controllers to simulate high-pressure, unstable approach situations and practice go-around procedures. This will ensure that both pilots and controllers are prepared to handle unstable approaches effectively.

6. ACTION BY THE MEETING

6.1 The meeting is invited to:

a) Support the adoption of real-time Flight Data Monitoring (FDM) programs in the MID Region.

b) Encourage MID States to standardize approach procedures and adopt PBN and CDO approaches where applicable.

c) Promote a non-punitive go-around culture across the MID Region.

d) Support the expansion of air traffic control procedures that facilitate smoother, more predictable approaches.

e) Call for the establishment of regional training programs focused on unstable approach risk mitigation.

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