EASPG SAFETY ADVISORY– 07

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GUIDANCE MATERIAL ON MEASURES TO MITIGATE THE RISK OF CONTROLLED FLIGHT INTO TERRAIN (CFIT) DURING THE APPROACH PHASE OF FLIGHT

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These guidelines are developed based on the work championed by United Kingdom (Bermuda CAA) and performed by the IE-REST in collaboration with the ICAO EUR/NAT Regional Office and the European Aviation System Planning Group (EASPG). They are aimed at reducing the risk of CFIT event.

Disclaimer

This document is intended to provide guidance for civil aviation regulators and aircraft operators on actions that could be taken by stakeholders to reduce the likelihood of a CFIT even during the approach phase of flight.

It is not intended to supersede or replace existing materials produced by the Civil Aviation Authorities (CAA) or in ICAO SARPs. The distribution or publication of this document does not prejudice the CAA's ability to enforce existing National regulations. To the extent of any inconsistency between this document and the National/International regulations, standards, recommendations or advisory publications, the content of the National/International regulations, standards, recommendations and advisory publications shall prevail.

1. Background

1.1. A controlled flight into terrain (CFIT) accident occurs when an airworthy aircraft under the control of the flight crew is flown unintentionally into terrain, obstacles or water, usually with no awareness of the impending collision on the part of the crew.

1.2. ICAO's first action in this regard can be traced to 1978, when requirements for equipping commercial air transport aircraft with GPWS were introduced into Annex 6 Part I International Commercial Air Transport - Aeroplanes. This led to a significant decrease in the number of CFIT occurrences, but not to their complete elimination. A significant advancement in technology was achieved with the development of Ground Proximity Warning System (GPWS) with a forward looking terrain avoidance function, generally referred to as Enhanced Ground Proximity Warning System (EGPWS), and known also as Terrain Awareness and Warning System (TAWS).

1.3. With the advent of EGPWS/ TAWS in 1996, there has been a significant reduction in the frequency of CFIT accidents. ICAO subsequently required that aircraft be equipped with this equipment and Annex 6 Part I currently requires all turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg or authorized to carry more than nine passengers, to be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.

1.4. The ICAO Council has approved the 2020-2022 Global Aviation Safety Plan (GASP) which has been endorsed by the 40th ICAO Assembly**.** The GASP Operational Safety Risks (OPS) Roadmap proposes a number of SEIs to mitigate the risk of CFIT. This Safety Advisory outlines action to implement initiatives to mitigate the risk of CFIT for some of the contributing factors identified in the GASP OPS Roadmap.

2. Analysis

2.1 There are three strategies which could be utilized by air operators to mitigate the risk of a CFIT during the approach phase of flight.

2.2 Air operators should highlight to their flight crews the increased risk of CFIT for non-precision and circling approaches and evaluate the risk of CFIT for aerodromes to which they operate as part of their Safety Management System. The Flight Safety Foundation has produced an Approach-and-landing Risk Awareness Tool (also available in the Russian language) which could assist in this regard. For approaches for which the risk of CFIT is relatively high, air operators may also wish to consider the development of particular SOPs and/or training for that approach.

2.3 Annex 6 Part I requires operators of an aeroplane greater than 27000 kg to establish and maintain a flight data analysis (FDA) programme as part of their Safety Management System. Tracking instances of unstabilized approaches is a very important event for FDA programmes to track. Air operators with a strong safety culture have SOPs to mandate/encourage flight crews to conduct a go around should the approach become unstable. It is recommended that air operators track instances of unstabilized approaches and promote adherence to their SOPs as required. Operators should also develop and promulgate a clear policy on go-arounds, which states that a go-around is a normal flight maneuver to be initiated whenever a continued approach would not be safe or when the approach does not meet the stabilized approach criteria. The policy should also state that there will be no punitive response from management to a go-around and that conversely any failure to go-around when appropriate will be followed up.

2.4 ICAO recommends that Operators should use the Continuous Decent Final Approach (CDFA) technique whenever possible as it adds to the safety of the approach operation by reducing pilot workload and by lessening the possibility of error in flying the approach. PANS-OPS Volume 1 – Flight Procedures, Part II — Section 5, Chapter 1, provides information on CDFA procedures which could be utilized by air operators to establish CDFA SOPs. It is recommended that air operators establish CDFA procedures for all non-precision approaches and ensure suitable recurrent training in flight crew reaction to EGPWS warnings.

3. Recommended Action

3.1 EASPG encourages States to advise air operators of initiatives that could mitigate the risk of CFIT as outlined in this Safety Advisory.

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