

FIGHTING RUNWAY EXCURSIONS:

RUNWAY SURFACE CONDITION ASSESSMENT, MEASUREMENT AND REPORTING

Runway contamination and related issues represent major runway excursion risk factors and point to an urgent need for a common understanding of the complex interaction between factors that affect the use and performance of aircraft braking systems. This involves a wide range of factors, including the reporting of runway conditions in a standardized manner such that flight crews are able to accurately determine aircraft take-off and landing performance.

Runway condition reporting must therefore use terminologies and values that are consistent with the aircraft performance charts supplied by manufacturers. Other key factors include the competencies of personnel across all relevant operational areas to evaluate, communicate and apply data related to runway conditions, including: aerodromes personnel, air traffic controllers, aeronautical information specialists, pilots and flight operations officers/flight dispatchers.

On the basis of a multidisciplinary approach to address runway safety, ICAO established the Friction Task Force (FTF) in 2008. The FTF is comprised of international experts and stakeholders from key industry groups who review, update and recommend changes to existing safety-related provisions. So far, the FTF has focused on addressing shortcomings in current Standards and Recommended Practices (SRPs) related to methods used to assess and report runway friction characteristics, the use of measured friction values for flight operation purposes, and the removal of contaminants in a timely manner. In response to these issues they have:

- a) Proposed amendments to the SRPs in Annex 14—*Aerodromes, Volume I—Aerodrome Design and Operations*, Annex 15—*Aeronautical Information Services and Procedures for Air Navigation Services—Air Traffic Management* (PANS-ATM, Doc 4444).
- b) Delivered a draft circular on runway surface condition assessment, measurement and reporting.

Applicability is envisaged in 2012.

The FTF's focus will now be turning to the development of a global reporting format for runway surface conditions. Building on past and current initiatives, such as the International Runway Friction Index, the Canadian Runway Friction Index, the U.S. FAA Take-off and Landing Performance Assessment, as well as EASA's Runway Friction Characteristics Measurement and Aircraft Braking, they'll be looking at harmonizing terms and definitions used to describe runway surface conditions in a manner that can easily be used by flight crews when calculating aircraft take-off and landing performance. The outcomes of this work are planned for completion for early 2014.

In addition, ICAO has produced *Circular 329 Runway Surface Condition Assessment, Measurement and Reporting*. This explains current knowledge on this difficult, complex and multifaceted subject. *Circular 329* establishes a conceptual understanding of the friction issues and recommends a holistic approach to the reporting of the pavement surface friction characteristics as well as paving the way for future improvement in the larger remit of assessing and reporting of runway surface conditions.

Circular 329 can be found at: www.icao.int/icaonet



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FIGHTING RUNWAY EXCURSIONS:

RUNWAY END SAFETY AREAS AND ARRESTING SYSTEMS

Recent research programmes and evaluations of actual aircraft overruns into arresting systems have demonstrated predictable and effective safety benefits. One good example is the Engineered Material Arresting System (EMAS), which has successfully arrested several aircraft overrunning runways in recent years.



Annex 14, Volume I—*Aerodrome Design and Operations to the Convention on International Civil Aviation*, contains international Standards and Recommended Practices (SARPs) requiring the provision of RESA to reduce the risk of damage to aircraft undershooting or overrunning a runway.

Recognizing the importance of the provision of RESA and the effectiveness of an arresting system, the ICAO Secretariat, with the assistance of the Aerodromes Panel, has made an amendment proposal to Annex 14, Volume I, to strengthen the requirement for RESA and to introduce arresting systems into the Annex.

According to the proposal, all types of runways are required to be provided with RESA, including non-instrument runways with code numbers 1 and 2. The introduction of arresting systems in relation to the provision of RESA offers additional mitigating measures to address aircraft overruns.

As proposed, the length of a RESA may be reduced where an arresting system is installed with demonstrated

performance that provides a level of protection at least equivalent to the prescribed RESA.

On 3 May, 2011, the Air Navigation Commission (ANC) completed its preliminary review of the proposed amendments on RESA and arresting systems, authorizing their transmission to Member States and appropriate international organizations for comment.

Based on the comments received and further analysis by the ICAO Secretariat, the ANC will conduct its final review of the proposed amendment on RESA and arresting systems and will submit its recommendation to Council for adoption. It is envisaged that this amendment will become applicable toward November 2012.

Associate guidance material will be included in Doc 9157—*Aerodrome Design Manual, Part 1—Runways*, after the proposed SARPS become applicable.



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