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SAFO

Safety Alert for Operators

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Flight Standards Service
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http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo

A SAFO contains important safety information and may include recommended action. SAFO content should be especially valuable to air carriers in meeting their statutory duty to provide service with the highest possible degree of safety in the public interest. Besides the specific action recommended in a SAFO, an alternative action may be as effective in addressing the safety issue named in the SAFO.

Subject: Runway Assessment and Condition Reporting, Effective October 1, 2016

Purpose: This SAFO serves to notify operators, pilots, training providers and other personnel of changes in runway condition reporting when a runway is other than dry. This change in reporting will be effective October 1, 2016.

Background: Following the runway overrun accident of a Boeing 737 at Chicago Midway airport in December of 2005, the Federal Aviation Administration (FAA) and industry developed a new methodology for conveying actual runway conditions. This methodology communicates actual runway conditions to pilots in terms that directly relate to expected aircraft performance. This methodology was based on recommendations from the Takeoff and Landing Performance Assessment (TALPA) Aviation Rulemaking Committee (ARC).

Discussion: The FAA is implementing the use of the Runway Condition Assessment Matrix (RCAM) which will be used by airport operators to perform assessments of runway conditions and by pilots to interpret reported runway conditions. The RCAM is presented in a standardized format, based on airplane performance data supplied by airplane manufacturers, for each of the stated contaminant types and depths. The RCAM replaces subjective judgments of runway surface conditions with objective assessments tied directly to contaminant type and depth categories.

The airport operator will use the RCAM to assess paved runway surfaces, report contaminants present, and through the assistance of the Federal NOTAM System, determine the numerical Runway Condition Codes (RwyCC) based on the RCAM. The RwyCCs apply to paved runways and may be the same or vary for each third of the runway depending on the type(s) of contaminants present. RwyCCs will replace Mu reports which will no longer be published in the NOTAM system. Additionally, contaminant coverage will be expressed in percentage terms for each third of the runway, beginning at the Runway end from which it was assessed. This is typically the runway end primarily in use.

Pilot braking action reports will continue to be solicited and will be used in assessing braking performance. Effective October 1, 2016, the terminology ”Fair” will be replaced by “Medium” and pilot braking action reports will now describe conditions as Good, Good to Medium, Medium, Medium to Poor, or NIL. This will harmonize the NAS with ICAO standards.

Additionally, it will no longer be acceptable for a federally obligated airport to report a NIL braking action condition. NIL conditions on any surface require the closure of that surface. These surfaces will not be opened until the airport operator is satisfied that the NIL braking condition no longer exists.

Instructional Notes: The RCAM braking action codes and definitions are shown below. The Assessment Criteria is associated with how an airport operator conducts and reports a runway condition assessment for a paved runway. The Control/Braking Assessment Criteria is associated with the pilot's experience with braking action.

Assessment Criteria		**Control/Braking Assessment Criteria**	
Runway Condition Description	**RwyCC**	**Deceleration or Directional Control Observation**	**Pilot Reported Braking Action**
• Dry	**6**	---	---
• Frost • Wet (Includes damp and 1/8 inch depth or less of water) ***1/8 inch (3mm) depth or less of:*** • Slush • Dry Snow • Wet Snow	**5**	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	Good
-15ºC and Colder outside air temperature: • Compacted Snow	**4**	Braking deceleration OR directional control is between Good and Medium.	Good to Medium
• Slippery When Wet (wet runway) • Dry Snow or Wet Snow (any depth) over Compacted Snow ***Greater than 1/8 inch (3 mm) depth of:*** • Dry Snow • Wet Snow ***Warmer than -15ºC outside air temperature:*** • Compacted Snow	**3**	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	Medium
Greater than 1/8 inch(3 mm) depth of: • Water • Slush	**2**	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
• Ice	**1**	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
• Wet Ice • Slush over Ice • Water over Compacted Snow • Dry Snow or Wet Snow over Ice	**0**	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

The airplane operator will use the pilot's version of the RCAM to assess the effects of a given contaminant(s) as indicated by the associated RwyCC prior to landing or departing. The RwyCC cannot

be adjusted by airplane operators. However, the airport operator may adjust (downgrade or upgrade) the RwyCC based on multiple variables in their overall assessment. This may cause the RwyCC to differ from the category of the reported contaminant(s).

When an airport condition (FICON) NOTAM includes RwyCCs, it is an indicator that more than 25% of the overall runway coverage or cleared width is contaminated and performance impacts are likely. When a runway is less than 25% contaminated, RwyCCs will not be generated, and performance impacts are less likely.

Recommended Action: Title 14 of the Code of Federal Regulations (14 CFR) Part 139 and federally obligated airports will start reporting runway conditions using the RCAM effective October 1, 2016. Operators should develop procedures for pilots and dispatchers that address the changes to runway condition reporting procedures. Operators should consult the current edition of the following publications in developing their procedures:

- AC 91-79 - Mitigating the Risks of a Runway Overrun Upon Landing;
- Safety Alert for Operators (SAFO) 06012, Landing Performance Assessments at Time of Arrival (Turbojets);
- AC 25-31 - Takeoff Performance Data for Operations on Contaminated Runways;
- AC 25-32 - Landing Performance Data for Time-of-Arrival Landing Performance Assessments;
- Aeronautical Information Manual (AIM);
- Aeronautical Information Publication (AIP);
- FAA Order 8900.1 Vol. 4, Chap. 3, Sec. 1;
- Order JO 7930.2 - Notices to Airmen (NOTAM);
- Order JO 7110.1 - Flight Services;
- Order JO 7110.65 - Air Traffic Control;
- Order JO 7210.3 - Facility Operation and Administration; and
- Technical Note DOT/FAA/TC-TN13/22 - Takeoff Landing Performance Assessment Validation Effort of the Runway Condition Assessment Matrix.

Operators should also periodically check the FAA's Web site on Runway Condition Assessment Reporting for more information: http://www.faa.gov/about/initiatives/talpa/.

Contact: Questions or comments regarding this SAFO should be directed to the Part 121 Air Carrier Operations Branch, AFS-220 at (202) 267-8166.