**NOTICE**

**U.S. DEPARTMENT OF TRANSPORTATION**
FEDERAL AVIATION ADMINISTRATION

N 8900.375

National Policy

Effective Date:
8/1/16

Cancellation Date:
8/1/17

**SUBJ:** Procedures for Reducing the Risk of Runway Overrun (TALPA)

**1. Purpose of This Notice.** This notice provides guidance to Federal Aviation Administration (FAA) aviation safety inspectors (ASI) on program policies and procedures for operator and certificate holder procedures to reduce the risk of runway overrun.

**Note:** This guidance is supplemental to FAA orders and Federal regulations.

**2. Audience.** The primary audience for this notice is Flight Standards District Offices (FSDO); certificate-holding district office (CHDO) principal operations inspectors (POI) who are responsible for determining the acceptability of procedures submitted to them for operations under Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 125 (including part 125 Letter of Deviation Authority (LODA) holders), 135, and 91 subpart K (part 91K); and Training Center Program Managers (TCPM) and other ASIs who are responsible for approval and surveillance of training programs for 14 CFR part 142 training centers. The secondary audience includes Flight Standards Service (AFS) branches and divisions in the regions and in headquarters (HQ).

**3. Where You Can Find This Notice.** You can find this notice on the MyFAA employee Web site at https://employees.faa.gov/tools_resources/orders_notices. Inspectors can access this notice through the Flight Standards Information Management System (FSIMS) at http://fsims.avs.faa.gov. Operators can find this notice on the FAA's Web site at http://fsims.faa.gov. This notice is available to the public at http://www.faa.gov/regulations_policies/orders_notices.

**4. Background.** Following a runway overrun accident by a Boeing 737 at Chicago Midway International Airport (KMDW) in December of 2005, the FAA convened a workgroup, the Takeoff and Landing Performance Assessment Aviation Rulemaking Committee (TALPA ARC), to make recommendations on reducing the risk of runway overruns, particularly when operating on contaminated runways. The TALPA ARC made recommendations relevant to areas of 14 CFR parts 23, 25, 91K, 121, 125, 135, and 139. The FAA has taken action in response to several of the recommendations.

**a. Runway Condition Reporting.** Effective October 1, 2016, the following changes will apply to runway condition reporting for a runway condition other than dry. These changes will apply to all part 139 airports and other federally obligated airports.

- A Runway Condition Assessment Matrix (RCAM) will be used to determine and report runway condition;
- Through the Notice to Airmen (NOTAM) system, pilots will receive a numerical (0 through 6) runway condition report using the numerical value Runway Condition Code (RwyCC) contained in the RCAM;
- Pilots will give braking action reports using descriptive terminology (e.g., "good," "medium," "poor," or "nil"). "Medium" has replaced "Fair" in braking action reports, which pilots will continue to provide and receive; and
- Pilots will no longer receive Mu reports. Airports will continue to use Mu as a factor for their determination of runway condition but they will not report the reading.

**b. Performance Assessment Standards for Certificate Holders and Operators.** The FAA has published guidance, as outlined in subparagraph 6b of this notice, on how to perform a before-landing performance assessment and for determining the effects of contaminated runways on takeoff performance. The FAA recommends these techniques to mitigate the risk of runway excursion associated with takeoff or landing.

**c. Airplane Performance Data Standards.** The FAA has issued guidance, as outlined in subparagraph 6b of this notice (specifically the current editions of Advisory Circular (AC) 25-31, Takeoff Performance Data for Operations on Contaminated Runways, and AC 25-32, Landing Performance Data for Time-of-Arrival Landing Performance Assessments), for use by part 25 airplane manufacturers to determine airplane performance data that may be used in making before-landing performance assessments and for takeoffs on contaminated runways. The FAA recommends airplane manufacturers furnish these performance data, but manufacturers are not required to do so. It is anticipated that guidance for part 23 airplane manufacturers will closely parallel that published for part 25 manufacturers.

**5. Discussion.**

**a. General.** Airplane Flight Manual (AFM) landing performance data, determined in compliance with part 25 during flight-testing, are not representative of everyday operational practices. Landing distances determined under part 25, § 25.125 and published in the AFM are shorter than actual landing distances in normal operations because rules applicable to normal operations require the addition of variable factors when determining minimum operational field lengths. Likewise, the AFM wet and contaminated runway data may not represent performance that is operationally achievable. This is because the wet or contaminated runway data is usually the result of applying an algorithm to the dry, smooth, hard surface runway data.

**b. Pretakeoff/Dispatch Planning.**

(1) Variances in operational landing performance, plus other factors affecting landing distance, are considered during preflight landing performance calculations. A significant safety margin in excess of the certified (unfactored) landing distance is applied for the current conditions. Part 91, § 91.1037(b) and (c); part 121, § 121.195(b); and part 135, § 135.385(b) require operators to comply with certain landing distance requirements at the time of takeoff. Part 125, § 125.49 requires operators to use airports that are adequate for the proposed operation. Sections 91.1037(e), 121.195(d), and 135.385(d) also require the addition of a 15 percent margin

above the required landing distance when the runway is wet or slippery, unless a shorter distance can be shown using operational landing techniques on wet runways. However, compliance with regulations applicable at the time of dispatch or takeoff does not guarantee that the airplane can land safely within the distance available on the runway actually used for landing at the time of arrival, particularly if the runway, runway surface condition, meteorological conditions, airplane configuration, airplane weight, or the intended use of airplane ground deceleration devices is different than that used in the preflight calculation.

(2) Finally, §§ 121.195(e), 135.375(b), and 135.385(c) and (e) allow use of an alternate airport to meet the requirements if forecast conditions at the destination airport are inadequate. These provisions suggest, but do not mandate, that a landing distance assessment should be accomplished prior to conducting an approach in order to determine if it is safe to land at the destination, or if it is necessary to divert to an alternate airport.

**c. Takeoffs on Wet or Contaminated Runways.** "Wet" is a descriptive condition; "water" is a contaminant. A runway can be considered wet when more than 25 percent of the runway surface area is covered by any visible dampness or water that is ⅛ inch or less in depth. A damp runway that meets this definition is considered wet, regardless of whether or not the surface appears reflective.

(1) For the purpose of takeoff performance, a runway is considered contaminated when more than 25 percent of the runway surface area is covered by a reportable contaminant listed in the current edition of AC 91-79, Mitigating the Risks of a Runway Overrun on Landing, Table 1-1, Operational Runway Condition Assessment Matrix (RCAM) Braking Action Codes and Definitions, Runway Condition Description column. Contaminated runway data provided by the aircraft manufacturers usually includes data for WET runway conditions (which is also appropriate for use on runways contaminated by frost and reportable contaminant depths of ⅛ inch or less), as well as data for ICY and contaminant depths of ¼ inch or greater, as appropriate. The manufacturer may provide additional guidance on selecting the appropriate contaminated takeoff performance data.

(2) Refer to AC 25-31 for further information regarding takeoff from a contaminated runway.

**d. Arrival Assessment.**

(1) Although regulations do not specify the type of landing distance assessment which must be performed or the safety margins that must be calculated at the time of arrival, the FAA recommends operators perform such an assessment to determine if landing and stopping the airplane can be safely accomplished. Sections 91.3, 91.1009, 121.533, 121.535, 121.537, 125.351, 135.69, and 135.77 place responsibility for safe operation of the flight jointly on the operator, pilot in command (PIC), and dispatcher, as appropriate to the type of operation being conducted. Therefore, determining safety margins at the time of arrival has been left largely to the operator and/or the flightcrew.

(2) A time of arrival landing distance assessment should be structured to account for relevant existing conditions at the time of arrival (e.g., runway surface condition, meteorological

conditions, airplane configuration, airplane weight, or the intended use of airplane ground deceleration devices). There may also be other elements that should be considered for the landing/stopping assessment. Sections 121.551, 121.553, 121.601, 121.603, 125.371, and 135.69 address conducting a landing distance assessment specific to the conditions existing near the time of arrival. They also support a determination of whether conditions exist that may affect the safety of the flight and whether operations should be restricted or suspended.

**e. Performing the Time of Arrival Landing Assessment.** It is recommended that the time of arrival landing distance assessment be accomplished using data based on or consistent with the recommendations of AC 25-32. A possible example of this would be data developed to comply with European Aviation Safety Agency (EASA) and Joint Aviation Authority (JAA) airworthiness certification and operating requirements.

(1) When performing the landing distance assessment, it is recommended to consider the information in FAA Order 8900.1, Flight Standards Information Management System (FSIMS), Volume 4, Chapter 3, Section 1, paragraph 4-503, Landing Distance Assessment at Time of Arrival. Paragraph 4-503 provides guidance on:

(a) When a time of arrival assessment should be initiated.

(b) The source of data for the time of arrival landing distance assessment, including information for airplanes which do not have manufacturer provided information.

(c) What runway conditions should be considered.

(d) Aircraft performance considerations, such as atmospheric conditions, to consider and what airplane configurations should be assumed.

(e) Safety margins (paragraph 4-503 recommends a safety margin of 15 percent).

(f) Considerations with the usage of autobrakes.

(g) Issues to be considered if a touchdown point shorter than recommended in AC 25-32 is assumed for operations.

(h) When it is considered appropriate to use the dispatch data for a time of arrival assessment.

(i) Considerations for documentation and training on time of arrival assessments.

(2) The recommended safety margin of 15 percent represents the distance margin between the expected actual landing distance at the time of arrival and the actual Landing Distance Available (LDA), considering the meteorological and runway surface conditions, airplane configuration, and pilot braking technique. This margin may also address variances in pilot braking action reports but care must be exercised when evaluating conditions reported by other aircraft. The runway distance available for landing will allow a full stop landing, under the conditions and airplane configuration at the time of landing, while providing an additional 15 percent safety margin.

(3) Runway conditions can significantly improve or deteriorate in a short period of time (depending on precipitation, temperature, runway use, and runway treatment), resulting in a runway condition significantly different from that indicated by the last condition report. When assessing the landing distance, operators and pilots should consider RwyCC; elapsed time and meteorological conditions since the runway contaminant report was issued; type of airplane or device used to obtain the report; whether the runway surface was treated since the report; methods used for that treatment; and any other factors deemed appropriate by the operator, crew, or both. Flightcrews must consider all available information, including the RwyCC, braking action reports, aircraft weight, and their use of airplane ground deceleration devices.

(4) Operators should confirm that the procedures and data used to comply with the paragraphs above for actual landing performance assessments yield results that are at least as conservative as the manufacturer's approved or advisory information for the associated conditions provided therein.

(5) The FAA acknowledges that there are situations (e.g., emergencies and abnormal or irregular configurations such as an engine failure or flight control malfunctions) where the flightcrew needs to know the actual performance capability of the airplane. At such times, the PIC must consider whether it is safer to remain in the air or to land immediately (without an added safety margin). This policy is not intended to curtail such evaluations from being made for these situations.

(6) This policy does not apply to land-and-hold-short operations (LAHSO).

**6. Action.** If a part 121 or 135 certificate holder chooses to incorporate this guidance into their operations procedures, this notice provides information to POIs for evaluating the certificate holder or operator's procedures. This guidance incorporates the information in the current edition of AC 150/5200-30, Airport Winter Safety and Operations, which is mandatory for all part 139 airports and other airports funded with Federal grant monies.

**a. Archiving Operations Specification (OpSpec) C382.** Because the implementation of this guidance by operators is voluntary and nonregulatory, principals of operators holding OpSpec C382 should have those operators incorporate the procedures in OpSpec C382 they choose to adopt into their General Operations Manual (GOM) and approved training program, then archive the OpSpec. When the principal has archived the OpSpec, the principal must inform the Air Transportation Division (AFS-200) by email (at 9-afs-200-correspondence@faa.gov with "Attention: AFS-220" in the text) that the OpSpec has been archived and the name of the operator involved. This must be done by November 4, 2016.

**b. Related Resources.** Other documents which operators may find useful in the development of operating procedures to reduce the risk of runway overrun are the current editions of:

- AC 25-31, Takeoff Performance Data for Operations on Contaminated Runways.
- AC 25-32, Landing Performance Data for Time-of-Arrival Landing Performance Assessments.
- AC 91-79, Mitigating the Risks of a Runway Overrun on Landing.

- Safety Alert for Operators (SAFO) 06012, Landing Performance Assessments at Time of Arrival (Turbojets).
- Aeronautical Information Manual (AIM).
- Aeronautical Information Publication (AIP).
- FAA Order 8900.1, Flight Standards Information Management System (FSIMS), Volume 4, Chapter 3, Section 1, Safety Assurance System: Airplane Performance Computation Rules.
- FAA Order JO 7930.2, Notices to Airmen.

**c. Implementation.** Order 8900.1, Volume 4, Chapter 3, Section 1 outlines some methods of implementing runway assessments which are acceptable to the FAA. There may be other methods which a POI finds acceptable through coordination with the operator or certificate holder. If a POI has questions about this policy, they should inform their Front Line Manager (FLM) and Regional Office (RO) and contact AFS-200 or the General Aviation and Commercial Division (AFS-800), as appropriate.

**d. Field Condition (FICON) NOTAMs.** Order 7930.2, appendix A, contains examples of FICON NOTAMs.

**7. Disposition.** We do not plan to immediately incorporate the information in this notice into Order 8900.1. Before it expires, we will reevaluate the procedures in this notice, and update Order 8900.1 at that time, if necessary. Direct questions or comments concerning the content of this notice to AFS-200 at 202-267-8166, or AFS-800 at 202-267-1100, as appropriate.

ORIGINAL SIGNED by

/s/ John Barbagallo
Deputy Director, Flight Standards Service