U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
National Policy

ORDER
1110.149

Effective Date:
10/12/07

SUBJ: Takeoff/Landing Performance Assessment Aviation Rulemaking Committee

1. Purpose of This Order. This order establishes the Takeoff/Landing Performance Assessment Aviation Rulemaking Committee (ARC) according to the Administrator's authority under Title 49 of the United States Code (49 U.S.C.) § 106(p)(5).

2. Audience. The audience for this order includes employees from the following services within the office of the Associate Administrator for Aviation Safety: Aircraft Certification, Flight Standards, and Rulemaking. Employees of the Office of the General Counsel and the Office of the Associate Administrator for Airports are also part of this order's audience.

3. Where You Can Find This Order. You can access this order through the Flight Standards Information Management System (FSIMS) at http://fsims.avr.faa.gov and https://employees.faa.gov/tools_resources/orders_notices

4. Background. After any serious aircraft accident or incident, the Federal Aviation Administration (FAA) typically performs an internal audit to evaluate the adequacy of current regulations and guidance information in areas that come under scrutiny during the course of the accident investigation. The Southwest Airlines landing overrun accident involving a Boeing 737-700 at Chicago Midway Airport in December of 2005 initiated such an audit. In addition to the regulations, the FAA evaluated its own orders, notices, and advisory circulars, as well as International Civil Aviation Organization (ICAO) and foreign country requirements, airplane manufacturer-developed material, independent source material, and current practices of air carrier operators.

a. This internal FAA review revealed the following issues:

(1) A survey of Title 14 Code of Federal Regulations (14 CFR) part 121 turbojet operators' manuals indicated that approximately 50 percent of the operators surveyed do not have policies in place for assessing whether sufficient landing distance exists at the time of arrival, even when conditions (including runway used, meteorological environment, runway surface contaminants, airplane weight, airplane configuration, and planned usage of decelerating devices) are different and worse than those planned at the time the flight was released.

(2) Not all operators who perform landing distance assessments at the time of arrival have procedures that account for runway surface conditions or reduced braking action reports.

(3) Many operators who perform landing distance assessments at the time of arrival do not apply a safety margin to the expected actual landing distance. Those that do are inconsistent in applying an increasing safety margin as the expected actual landing distance increased (i.e., as a percentage of the expected actual landing distance).

(4) Some operators have developed their own contaminated runway landing performance data or are using data developed by third party vendors. In some cases, this data indicate shorter landing distances than the airplane manufacturer's advisory data for the same conditions. In other cases, an autobrake landing distance chart has been misused to generate landing performance data for contaminated runway conditions. Also, some operators' data has not been kept up to date with the manufacturer's current advisory data for contaminated runway operations.

(5) Credit for the use of thrust reversers in the landing performance data is not uniformly applied and pilots may be unaware of these differences. In one case, the operator had given different credit for various series with the same make and model aircraft. The operator's understanding of the data with respect to reverse thrust credit, and the information conveyed to pilots, were both incorrect.

(6) Aircraft Flight Manual (AFM) landing performance data is determined during flight testing using flight test and analysis criteria that are not representative of everyday operational practices. Landing distances determined in compliance with 14 CFR part 25, § 25.125 and published in the FAA-approved AFM do not reflect operational landing distances. Landing distances determined during certification tests are aimed at demonstrating the shortest landing distances for a given airplane weight with a test pilot at the controls, and are established with full awareness that operating rules for fractional ownership, domestic, flag, supplemental, commuter/on-demand operations with large transport category turbine-engine powered airplanes require the inclusion of additional factors when determining minimum operational field lengths. (These factors are required for dispatch, but are used by some operators at the time of arrival as well.) Flight test and data analysis techniques for determining landing distances can result in the use of high touchdown sink rates (as high as 8 feet per second) and approach angles of -3.5 degrees to minimize the airborne portion of the landing distance. Maximum manual braking, initiated as soon as possible after landing, is used in order to minimize the braking portion of the landing distance. Therefore, the landing distances determined under § 25.125 are shorter than the landing distances achieved in normal operations.

(7) Wet and contaminated runway landing distance data (which is advisory data only) is usually an analytical computation using the dry, smooth, hard surface runway data collected during certification. Therefore, the wet and contaminated runway data may not represent performance that would be achieved in normal operations. This lack of operational landing performance repeatability from the flight test data, along with many other variables affecting landing distance, are taken into consideration in the preflight landing performance calculations by requiring a significant safety margin in excess of the certified (unfactored) landing distance that would be required under wet and contaminated landing conditions. However, the regulations do not specify a particular safety margin for a landing distance assessment at the time of arrival. The required safety margin has been left largely to the operator and/or the flightcrew to determine.

(8) Manufacturers do not provide advisory landing distance information in a standardized manner. However, most turbojet airplane manufacturers make landing distance performance information available for a range of runway or braking action conditions using

various airplane deceleration devices and settings under a variety of meteorological conditions. This information is made available in a wide variety of informational documents, dependent upon the manufacturer, and is not part of the FAA-approved AFM.

(9) Most of the data for runways contaminated by snow, slush, standing water, or ice were developed to show compliance with European Aviation Safety Agency (EASA) and Joint Aviation Authority (JAA) airworthiness certification and operating requirements.

b. FAA actions following the internal review:

(1) The FAA published an advanced notice of policy for "Landing Performance Assessments After Departure for All Turbojet Operators." This notice was published in the Federal Register on June 7, 2006 (71 FR 32877) with a correction notice (71 FR 34856) published on June 16, 2006.

(2) After considering public comments on the advance notice of policy, the FAA issued Safety Alert for Operators (SAFO) 06012 on August 31, 2006. This SAFO, while not being mandatory, urgently recommended all operators of turbojet airplanes to have procedures in place to perform landing performance assessments, and to provide a 15 percent safety margin beyond the actual landing distance. SAFO 06012 also notified the aviation community that the FAA has initiated the rulemaking process to address this issue.

5. Objectives and Scope of the Committee. The Takeoff/Landing Performance Assessment ARC will provide a forum for the U.S. aviation community to discuss the landing performance assessment methods provided in SAFO 06012. Additionally, takeoff performance for contaminated runway operations and issues relevant to part 139, Certification of Airports, will be discussed. These discussions will be focused on turbine powered aircraft including both turbojet and turboprop airplanes operated under parts 121, 135, 125, and 91 subpart K.

6. Committee Procedures.

a. The Associate Administrator for Aviation Safety will issue more specific taskings, including deliverable dates.

b. The committee will provide advice and recommendations to the Associate Administrator for Aviation Safety. The committee will act solely in an advisory capacity.

c. The committee will discuss and present information, guidance, and recommendations that the members of the committee consider relevant to disposing of issues. Discussion will include, but is not limited to, the following:

(1) Operational objectives, recommendations, and requirements.

(2) Recommendations for rulemaking necessary to meet objectives.

(3) Guidance material and the implementation processes.

(4) Global harmonization issues and recommendations.

7. Organization and Administration.

a. The FAA will set up a committee representing the various parts of the industry and Government. The committee may set up specialized work groups that will include at least one committee member and invited subject matter experts from industry and Government, where necessary.

b. The Associate Administrator for Aviation Safety will have the sole discretion to appoint members or organizations to the committee. The committee will consist of members of the aviation community, including aviation organizations of affected airplane manufacturers, operators, and pilot unions of turbine powered aircraft under parts 121, 135, 125, and 91 subpart K. The FAA will provide participation and support from all affected FAA lines-of-business.

c. The Associate Administrator for Aviation Safety will receive all committee recommendations and reports.

d. The Associate Administrator for Aviation Safety is the sponsor of the committee and will select a steering committee from the membership of the committee to act as lead. Also, the Associate Administrator will select the FAA-designated representative for the committee. Once appointed, the steering committee will do the following:

(1) Determine, in coordination with the other members of the committee, when a meeting is required.

(2) Arrange notification to all committee members of the time and place for each meeting.

(3) Draft an agenda for each meeting and conduct the meeting.

e. A Record of discussions of committee meetings will be kept.

f. Although a quorum is desirable at committee meetings, it is not required.

8. Membership.

a. The committee will consist of approximately 40 members, selected by the FAA, representing aviation organizations of affected airplane manufacturers, operators, and pilot unions, of turbine powered aircraft under parts 121, 135, 125, and 91 subpart K, and the FAA.

b. Each member or participant on the committee should represent an identified part of the aviation community and have the authority to speak for that part. Membership on the committee will be limited to promote discussions. Active participation and commitment by members will be essential for achieving the committee objectives and for continued membership on the committee. The committee may invite additional participants as subject matter experts to support specialized work groups.

9. Cost and Compensation. The estimated cost to the Federal Government for the Takeoff/Landing Performance Assessment ARC is approximately $40,000 annually. Non-Government representatives serve without Government compensation and bear all costs related to their participation on the committee. As non-Government representatives, the chair and all non-FAA committee members serve without Government compensation and bear all costs related to their participation on the committee.

10. Public Participation. The Takeoff/Landing Performance and Assessment ARC meetings are not open to the public. Persons or organizations that are not members of this committee and are interested in attending a meeting must request and receive approval in advance of the meeting from the industry co-chairs or the designated Federal representative.

11. Availability of Records. Under the Freedom of Information Act, Title 5 of the United States Code (5 U.S.C.) § 552, records, reports, agendas, working papers, and other documents that are made available to or prepared for or by the committee will be available for public inspection and copying at the FAA Office of Rulemaking, 800 Independence Avenue, S.W., Washington, DC 20591. Fees will be charged for information furnished to the public according to the fee schedule published in Title 49 of the Code of Federal Regulations (49 CFR) part 7.

12. Public Interest. Forming the Takeoff/Landing Performance Assessment ARC is determined to be in the public interest to fulfill the performance of duties imposed on the FAA by law.

13. Effective Date and Duration. This committee is effective [enter date signed]. The committee will remain in existence until [enter date two years after effective date], unless terminated sooner or extended beyond the effective dates of the charter by the Administrator.

Robert A. Sturgell
Acting Administrator

Takeoff and Landing Performance Assessment (TALPA) ARC

There is no recommendation report.