

Engineering Brief No. 74A**USE OF 150-FOOT (45-M) WIDE RUNWAYS AND BLAST PADS
FOR BOEING 747-8 OPERATIONS****August 12, 2011****A. BACKGROUND**

On February 27, 2008, Engineering Brief (EB) No. 74, *Minimum Requirements to Widen Existing 150-Foot Wide Runways for Boeing 747-8 Operations*, was issued that covered a permissible alternative to temporarily widen an existing 150-foot (45-m) wide runway to accommodate limited operations by the Boeing 747-8.

On August 12, 2011, the Flight Standards Service issued a memorandum to the Office of Airport Safety and Standards describing the Flight Standardization Board's (FSB) findings for the B747-8 (see attachment). In addition to the normal FSB tasking, the evaluation team focused on the unique operational issue involving operations on runways as narrow as 150 feet (45 m) wide. Concerning this operational issue, the team found that the Boeing 747-8 could be safely operated on runways as narrow as 150 feet (45 m) with the use of average pilot skills and knowledge. Therefore, the following statement will replace the current statement in the FAA Boeing 747-8 Aircraft Flight Manual for minimum runway width requirements.

"This aircraft has demonstrated that it can be safely operated on runways as narrow as 45 meters (150 feet) wide. The use of narrower runways may be authorized after demonstration of safe capability and authorization by the operator's aviation regulatory authority.

Furthermore on the basis of the FSB determination and other relative engine performance factors, the FAA Airport Engineering Division Office (AAS-100) determined that the following Airplane Design Group V design standards are acceptable for Boeing 747-8 operations:

- 1) 35-foot standard stabilized runway shoulder width need not be increased to the Airplane Design Group VI standard of 40 feet, and
- 2) 220-foot standard blast pad width need not be increased to the Airplane Design Group standard of 280 feet.

For either application the airport operator is required to (1) submit a modification-to-standard (MoS) that designates the runway(s) that will accommodate the Boeing 747-8 operations, (2) make reference of the designated runway(s) in the airport's *B747-8 Taxi Operational Plan*, and (3) include a reference of the approved MOS in the airport's Part 139 Airport Certification Manual.

B. PURPOSE

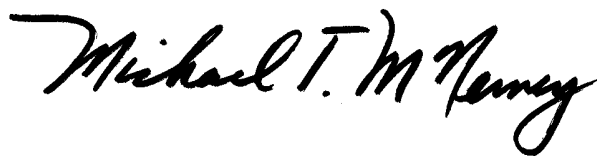
This engineering brief provides airport operators and FAA Airports Regional Offices guidance when airports operators must file the MoS and the conditions necessary for approval as addressed in paragraph A.

Airports Regional Division Managers have the authorization of approving MoSs that meet the conditions of this engineering brief. In the case of substandard runway stabilized shoulders and/or blast pad, the airport operator can submit a proposed construction plan outlining actions to obtain the ADG V runway stabilized shoulder or blast pad(s) width within 3 years to the Airports District Office or the Airports Regional Office for their approval. Issuance of an approved MoS requires a copy be sent to the Airport Engineering Division, AAS-100.

C. CANCELLATION

Engineering Brief No. 74, *Minimum Requirements to Widen Existing 150-Foot Wide Runways for Boeing 747-8 Operations*, dated February 27, 2008 is cancelled. The cancellation of EB 74 withdraws the design option for converting existing paved shoulders to runway pavement.

D. New Runway Construction or Reconstruction of 150-foot (45-m) Wide Runways. New runway construction or major reconstruction, including runway blast pads and paved runway shoulders, that receives Federal funding under the Airport Improvement Program (AIP) or is approved for the use of Passenger Facility Charges (PFC) is subject to Airplane Design Group VI design standards, as specified in *Advisory Circular (AC) 150/5300-13, Airport Design*. In the case of new runway construction or major reconstruction not receiving AIP Federal funding or PFC authority, it is highly recommended that such construction comply with Airplane Design Group VI standards.



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Federal Aviation Administration

Memorandum

Date: **AUG 12 2011**

To: Mr. Mike O'Donnell, Director, Airport Safety and Standards, AAS-1

From: *John Allen*
John Allen, Director, Flight Standards, AFS-1

Prepared by: Jerry Ostronic, Aviation Safety Inspector, Air Carrier Operations, CMO-19

Subject: Boeing B747-8 Operations Evaluation Results

The Federal Aviation Administration (FAA) Flight Standardization Board (FSB) for the Boeing B747-8 completed its operations evaluation on July 25, 2011. The evaluation team, in addition to its normal FSB tasking, focused on the evaluation of the capability of the B747-8 to safely operate on runways as narrow as 45 meters (150 feet) wide.

Operations Issue Paper O-7 was developed and issued to Boeing that identified FAA concerns with the operations of the B747-8 on runways narrower than the standard Airplane Design Group VI (ADG-VI) criteria of 60 meters (200 feet) wide. Boeing agreed to Operations Issue paper O-7, which detailed the evaluation process to determine if the aircraft could be safely operated on runways as narrow as 45 meters. Throughout the development and certification flight program, all runway centerline lateral deviation data was recorded for all takeoffs and landings. Additionally, subjective evaluations were conducted by the FSB operations evaluation pilots, assisted with inputs from FAA certification flight test pilots.

The team found that the Boeing B747-8 could be safely operated on runways as narrow as 45 meters with the use of average pilot skills and knowledge. The following statement will be coordinated with our Aircraft Certification Office and placed in the FAA Boeing B747-8 Aircraft Flight Manual for minimum runway width requirements.

- **“This aircraft has demonstrated that it can be safely operated on runways as narrow as 45 meters (150 ft.) wide. The use of narrower runways may be authorized after demonstration of safe capability and authorization by the operator’s aviation regulatory authority.”**

Additionally, the FAA will issue domestic and/or foreign air carriers (operating into the US) operating the B747-8 Operation Specifications that specify the aircraft may be operated on runways as narrow as 45 meters (150 ft.) wide.