



Federal Aviation Administration

Memorandum

Date: November 30, 2011

To: Manager, Seattle Aircraft Certification Office, ANM-100S

From: Manager, Transport Airplane Directorate, ANM-100

Prepared by: Rene Buendia, ANM-150S

Subject: INFORMATION: Equivalent Level of Safety (ELOS) Finding for Aisle Width on a Model 747 and 747-8, FAA Project # ANM-100S-0120 and PS05-0211

ELOS Memo#: ANM-100S-0120-CI-1

Regulatory Ref: §§ 21.21(b) and 25.815

This memorandum informs the certificate management aircraft certification office of an evaluation made by the Transport Airplane Directorate (TAD) on the establishment of an equivalent level of safety (ELOS) finding for the 747 aisle width between the first row of seats in Zone A.

Background

Title 14, Code of Federal Regulations (14 CFR) 25.815 requires that the width of the passenger aisle must be 15 inches wide less than 25 inches above the floor and 20 inches wide more than 25 inches above the floor for airplanes with passenger seating capacity of 20 or more. The Boeing Company has requested an ELOS finding per § 21.21(b)(1) for an aisle width of 12 inches (below 25 inches) and 18 inches (above 25 inches) for the first row of seats in Zone A of the Models 747 and 747-8. No more than 6 passengers are seated in that row. Section 25.815 allows an aisle width of 12 inches and 15 inches for airplanes with a passenger capacity of 10 or less.

Applicable regulation(s)

§§ 21.21(b) and 25.815

Regulation(s) requiring an ELOS finding

§ 25.815

Description of compensating design features or alternative standards which allow the granting of the ELOS (including design changes, limitations or equipment need for equivalency)

The reduced aisle width only occurs for a few inches along the aisle and extends only as high as the top of the seat back. The Boeing Company states that no more than 6 passengers would use this part of the aisle and the reduced aisle width is consistent with the allowable aisle for airplanes with 10 or fewer passengers.

Explanation of how design features or alternative standards provide an equivalent level of safety to the level of safety intended by the regulation

Due to the space between the first row of seats and the front of the passenger cabin, it is easier for passengers in these seats to reach the aisle than it is for the passengers seated in a standard triple seat where there is no minimum distance between rows of seats. This reduction in aisle width would have no effect on evacuation capability. Since this narrow aisle is located at the end of the cabin, it would be obvious to the occupants which direction they must go to exit the area. The narrow aisle would cause no confusion such as the perception that it is not an aisle.

FAA approval and documentation of the ELOS finding

The FAA has approved the aforementioned ELOS finding in project Issue Papers CI-1 and G-6 for the 747 and the 747-8, respectively. This memorandum provides standardized documentation of the ELOS finding that is non-proprietary and can be made available to the public. The TAD has assigned a unique ELOS memorandum number (see front page) to facilitate archiving and retrieval of this ELOS. This ELOS memorandum number should be listed in type certificate data sheet under the certification basis section. An example of an appropriate statement is provided below.

Equivalent Level of Safety Findings have been made for the following regulation(s):
§ 25.815, Width of Aisle (documented in TAD ELOS Memo ANM-100S-0120-CI-1).

Original Signed by

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Transport Airplane Directorate,
Aircraft Certification Service

December 5, 2011

Date

ELOS Originated by ACO:	Project Engineer Rene Buendia	Routing Symbol ANM-150S
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