Federal Aviation Administration

Memorandum

Date: August 26, 2015

To: Manager, International Branch, ANM-116

From: Manager, Transport Airplane Directorate, ANM-100

Prepared by: Greg Schneider, ANM-115

Subject: INFORMATION: Equivalent Level of Safety (ELOS) Finding for Crash Protection of Fuel Tanks and Systems on Embraer Model EMB-550 and EMB-545 airplanes, FAA Project # TC0717IB-T and AT10256IB-T

ELOS Memo #: TC0717IB-T-A-6

Regulatory Ref: §§ 25.721, 25.963(d), and 25.994

Revision Description: The FAA revised the memo to add the Embraer Model EMB-545.

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 Embraer Model EMB-550 and EMB-545 airplanes.

Background

The Embraer Model EMB-550 and EMB-545 airplanes have belly-mounted fuel tanks. In order to address concerns about fuel tank protection in the event of a landing where the fuel tank may possibly be damaged and leak a hazardous amount of fuel, Embraer demonstrated compliance to the new harmonized minor crash conditions requirement from the aviation rulemaking advisory committee (ARAC) Loads and Dynamics Harmonization Working Group instead of demonstrating compliance to Title 14, Code of Federal Regulations (14CFR) 25.721, 25.963(d), and 25.994. These standards have been adopted in the European aviation safety administration (EASA) certification standard (CS) CS-25 requirements at Amendment 25/3. Compliance with the harmonized standards is being proposed as an equivalent means of compliance to the paragraphs above.

Applicable regulation(s)

§§ 25.721, 25.963(d), and 25.994.

Regulation(s) requiring an ELOS finding

§§ 25.721, 25.963(d), and 25.994.

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

The FAA accepts Embraer's proposal to use the EASA CS-25 requirements in lieu of §§ 25.721, 25.963(d), and 25.994.

Explanation of how design features or alternative standards provide an ELOS to that intended by the regulation

The ARAC proposal, now codified in CS-25, provides a more objective performance standard and a crash condition potentially more severe than that required by the current regulations.

FAA approval and documentation of the ELOS finding

The FAA has approved the aforementioned ELOS finding in project Issue Paper A-6, titled Crash Protection of Fuel Tanks and Systems. 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 finding. This ELOS memorandum number should be listed in the type certificate data sheet under the Certification Basis section in accordance with the statement below:

Equivalent Level of Safety Findings have been made for the following regulation(s): §§ 25.721, 25.963(d), and 25.994 (documented in TAD ELOS Memo TC0717IB-T-A-6).

Original Signed by

Suzanne Masterson August 26, 2015

Transport Airplane Directorate, Aircraft Certification Service — Date

ELOS Originated by: Airframe & Cabin	Project Engineer: Greg Schneider	Routing Symbol: ANM-115

Safety Branch		