



# Federal Aviation Administration

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## Memorandum

Date: February 2, 2015

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

From: Manager, Transport Airplane Directorate, ANM-100

Prepared by: Sherry Vevea, (425) 917-6514

Subject: INFORMATION: Equivalent Level of Safety (ELOS) Finding for Wing Leading Edge Slats Boeing on Model 737-7, -8, and -9 Airplanes, FAA Project Numbers PS12-0037, PS12-0038, and PS12-0039

ELOS Memo #: PS12-0038-P-12

Reg. Ref.: § 25.867(a)

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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 Boeing Model 737-7, -8 and -9 (737 MAX) airplanes.

### **Background**

Boeing Model 737 MAX airplanes, equipped with LEAP-1B engines, do not directly comply with the requirements of Title 14, Code of Federal Regulations (14 CFR) 25.867(a) as applicable to the trailing edge of the wing leading edge slat. Section 25.867(a) requires “Surfaces to the rear of the nacelles, within one nacelle diameter of the nacelle centerline, must be at least fire-resistant.”

The Model 737 MAX airplanes have under-wing pylon mounted CFM LEAP-1B engines. The trailing edge of the wing leading edge slat wedge, which is located on the upper outboard side of each engine, is within the one nacelle diameter definition for surfaces that must be fire resistant. The slat trailing edge wedge has not been shown to be fire resistant and therefore, does not directly comply with the prescriptive requirements of § 25.867(a).

### **Applicable Regulation(s)**

§ 25.867(a)

## **Regulation requiring an ELOS**

§ 25.867(a)

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

All of the surrounding slat and underlying wing surfaces adjacent to the trailing edge of the wing leading edge slat wedge will be shown to be fire resistant. There will be no exposed wing compartments, or surfaces under the slat trailing edge wedge that will not be at least fire resistant in construction.

### **Explanation of how design features or alternative standards provide an ELOS intended by the regulation**

Removal or burn through of the trailing edge of the wing leading edge slat wedge would result in exposed fire resistant surfaces. The fiberglass structure and the seals underneath the slat trailing edge wedge will be shown fire resistant so that if a fire breaches the slat trailing edge wedge (primary surface), the wing structure and systems within the wing leading edge compartment are still protected.

There are no exposed systems under the slat trailing edge wedge. If the trailing edge of the wing leading edge slat is partially or entirely removed, the effect on airplane performance and handling will not create an additional hazard.

### **FAA approval and documentation of the ELOS finding**

The FAA has approved the aforementioned ELOS finding in project Issue Paper P-12, titled Fire Protection of Wing Leading Edge Slat Wedge. 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 Finding has been made for the following regulation(s):

14 CFR 25.867(a) (documented in TAD ELOS Memorandum PS12-0038-P-12)

Original Signed by

*Victor Wicklund*

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Transport Airplane Directorate,  
Aircraft Certification Service

May 1, 2015

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Date

ELOS Originated by Boeing Aviation Safety Oversight Office	BASOO Manager: Angelos Xidias	Routing Symbol: ANM-100B
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