



# Federal Aviation Administration

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## Memorandum

Date: January 15, 2013

To: Manager, Transport Standards Staff, International Branch, ANM-116

From: Manager, Transport Airplane Directorate, ANM-100

Prepared by: Todd Martin, ANM-115

Subject: INFORMATION: Equivalent Level of Safety (ELOS) Finding for Fuel Tank Emergency Landing Loads on Airbus Model A350 series airplanes, FAA Project Number TC0544IB-T.

ELOS Memo #: TC0544IB-T-A-13

Reg. Ref.: § 25.963(d)

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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 Airbus Model A350 aircraft.

### **Background**

Title 14, Code of Federal Regulations (14 CFR) section 25.963(d) prescribes fuel tank loads for emergency landing conditions. A proposal to harmonize the requirements of § 25.963 with the requirements of European Aviation Safety Agency (EASA) Certification Standard (CS) 25.963 was developed by the Aviation Rulemaking Advisory Committee (ARAC). This activity is part of a general FAA program to harmonize FAA and EASA requirements.

Airbus requested an equivalent safety finding to the existing requirements of § 25.963(d). Airbus proposed to use the emergency landing load conditions recommended by ARAC and adopted in CS-25. FAA accepts the Airbus proposal as equivalently safe.

### **Applicable regulation**

§ 25.963(d)

**Regulation requiring an ELOS finding**

§ 25.963(d)

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

Section 25.963(d) currently requires that fuel tanks be designed to the emergency landing load factors specified in § 25.561. This paragraph applies only to fuel tanks inside the fuselage contour of the airplane, although the FAA has imposed special conditions to provide criteria for fuel tanks located in the horizontal tail. Airbus proposes to use the emergency landing load conditions recommended by ARAC and adopted in CS-25.

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

The ARAC proposal, as adopted in CS-25, includes emergency landing inertia loads criteria that cover all fuel tanks on the airplane, both inside and outside the fuselage pressure boundary. The criteria are more comprehensive and are more clearly stated than the current § 25.963(d). In addition, using these criteria would obviate the need for special conditions for tail fuel tank designs.

The FAA considers the ARAC proposal as adopted in CS-25 to be equivalently safe to the currently effective § 25.963(d).

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

The FAA has approved the aforementioned ELOS finding in project issue paper A-13, titled Fuel Tank Emergency Landing Loads. 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:

An ELOS finding has been made for the following regulation:  
§ 25.963(d), Symmetric Maneuvering Conditions (documented in TAD ELOS Memo TC0544IB-T-A-13).

Original signed by

*Suzanne Masterson*

Transport Airplane Directorate,  
Aircraft Certification Service

January 15, 2013

Date

ELOS Originated by Transport Standards Staff	Project Engineer Todd Martin	Routing Symbol ANM-115
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