



Federal Aviation Administration

Memorandum

Date: January 17, 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 the Ground Turning Condition on Airbus Model A350 series airplanes, FAA Project Number TC0544IB-T.

ELOS Memo #: TC0544IB-T-A-12

Reg. Ref.: § 25.495

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 25.495 prescribes a ground turning load condition. A proposal to harmonize the requirements of § 25.495 and the related requirements of European Aviation Safety Agency (EASA) Certification Specification (CS) 25.495 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 § 25.495 and proposed to use the ground loads criteria recommended by ARAC with some modification. FAA accepts the Airbus proposal as equivalently safe.

Applicable regulation

§ 25.495

Regulation requiring an ELOS finding

§ 25.495

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 ARAC proposal maintains the standard ground turn requirement, but also requires that a rational analysis be used in lieu of the standard requirement for airplanes with more than two main landing gear units. Airbus is proposing to apply the rational analysis on the Model A350 airplane, which has a conventional two gear arrangement.

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

Using the rational analysis proposed by Airbus, the lateral load is assumed to be shared by each individual tire and each gear unit in a conservative manner, and the side reaction of each gear unit is determined by taking into account tire characteristics, airplane flexibility, etc.

The FAA considers the ARAC proposal to be equivalently safe to the currently effective § 25.495.

FAA approval and documentation of the ELOS finding

The FAA has approved the aforementioned ELOS finding in project issue paper A-12, titled Undercarriage Lateral Turning Loads. EASA has approved the ELOS finding in project Certification Review Item (CRI) C-12, “Undercarriage Lateral Turning Loads,” at Issue 3. 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 findings has been made for the following regulation:
 § 25.495 Turning (documented in TAD ELOS Memo TC0544IB-T-A-12).

Original signed by

Suzanne Masterson

Transport Airplane Directorate,
 Aircraft Certification Service

January 18, 2013

Date

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