



Federal Aviation Administration

Memorandum

Date: June 17, 2014

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

From: Manager, Transport Airplane Directorate, ANM-100

Prepared by: Jeff Gardlin, ANM-115

Subject: INFORMATION: Equivalent Level of Safety (ELOS) Finding for the Airbus Model A350-900 Airplane (FAA Project Number TC0544IB-T)

ELOS Memo #: TC0544IB-T-CS-13

Reg. Ref: § 25.795(a)(1)

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 A350-900 airplane.

Background

The standards in Title 14, Code of Federal Regulations (14 CFR) section 25.795(a)(1) were conservatively derived from land-based standards for security doors. The objective of § 25.795(a)(1) is to deter intrusion into the flightdeck by making it very difficult to forcibly enter the flightdeck. While it was understood that there are geometric and design differences in airplanes that would make susceptibility to forcible intrusion different, there was no simple way to capture this in the regulation. Thus, a single performance standard in the form of impact energy was established.

Airbus has proposed to apply reduced intrusion loads in certain areas of the flight deck boundaries (other than the flightdeck door) on Model A350-900 series aircraft, instead of the impact energy required by the existing § 25.795(a)(1). The FAA has not previously accepted the use of reduced impact energies for compliance of certain areas of flight deck boundaries with the regulation.

Applicable regulation(s)

§ 25.795(a)(1)

Regulation(s) requiring an ELOS finding

§ 25.795(a)(1)

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 flightdeck arrangement on the Model A350-900 includes geometrical constraints, due to relative position of other features with respect to the flightdeck, or constraints within other features near the flightdeck, that make it unrealistic to apply the intrusion energy specified in the regulation. These features could be considered as inherently intrusion resistant.

The constraints built into the design make access to certain portions of the flightdeck boundary very limited and justify a reduced loading case.

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

The intent of the regulation is to enable the flightdeck to resist forcible intrusion. The requirement aims to do this with a single performance standard that is independent of the airplane design. However, by incorporating features into the airplane design that are inherently intrusion resistant, it is possible to meet the intent of the rule using lower impact energies.

FAA approval and documentation of the ELOS finding

The FAA has approved the aforementioned ELOS finding in the Model A350-900 issue paper CS-13, titled “Application of Reduced Intrusion Loads in certain Areas of the Flight Deck Boundaries.” In addition, because the issue paper follows the corresponding European Aviation Safety Agency (EASA) certification review item (CRI) D-31, the FAA has accepted this CRI as the basis for a finding of an ELOS.

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.

ELOS Findings have been made for the following regulations:

§ 25.795(a)(1), Security Considerations Protection of flightcrew compartment (documented in ELOS Memo TC0544IB-T-CS-13)

Original signed by

Suzanne Masterson

June 17, 2014

Transport Airplane Directorate,
Aircraft Certification Service

Date

ELOS Originated by: Airframe & Cabin Safety Branch	Project Engineer: Jeff Gardlin	Routing Symbol: ANM-115
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