



Federal Aviation Administration

Memorandum

Date: March 12, 2015

To: Manager, Boeing Aviation Safety Oversight Office, ANM-100B

From: Manager, Transport Airplane Directorate, ANM-100

Prepared by: Jim Cashdollar, ANM-100B

Subject: INFORMATION: Equivalent Level of Safety (ELOS) Finding for Forward Position and Anticollision Lights on a Boeing Model 767-2C Airplane, Project # PS09-0863

ELOS Memo # PS09-0863-SE-1

Regulatory Ref: 14 CFR 21.21(b)(1), 25.1387(b), 25.1387(c), and 25.1401(b)

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 767-2C airplane.

Background

Title 14, Code of Federal Regulations (14 CFR) 25.1387(b) and (c) at Amendment 25-30 specifies the dihedral angle requirements of each forward and rear position light. Section 25.1401(b) at Amendment 25-41 specifies the field of coverage requirements for the anticollision light system.

The forward position light illumination pattern required by § 25.1387(b) and (c) is partially obstructed when the leading edge slats are extended. When the leading edge slats are stowed (retracted), there is no blockage and the forward position lights satisfy the light intensity and distribution requirements of §§ 25.1385 through 25.1395. The same situation also applies to the forward wingtip anticollision lights with regard to the light intensity and distribution requirements of § 25.1401(b).

Applicable regulation(s)

14 CFR 21.21(b)(1), 25.1387(b), 25.1387(c), and 25.1401(b)

Regulation(s) requiring an ELOS finding

14 CFR 25.1387(b), 25.1387(c), and 25.1401(b)

Description of compensating design features or alternative Methods of Compliance (MoC) which allow the granting of the ELOS (including design changes, limitations or equipment needed for equivalency)

The compensating factors that provide an ELOS for the regulations not complied with are as follows:

- The leading edge slat obstruction occurs only when the leading edge slats are extended.
- The resulting cone of blockage is very narrow in the forward downward direction for the position lights and in the forward downward direction for the anticollision lights resulting in only momentary (1 to 3 seconds) blockage to other aircraft operating in the vicinity.
- The landing lights or body anticollision lights, which provide similar or better visual identification of aircraft in the vicinity of each other, are not blocked at any time.
- The reflections of landing and anticollision lights from the airplane surfaces provide additional conspicuity to other aircraft operating in the vicinity, even while other aircraft are within the cone of blockage.
- A minimum equipment list (MEL) requirement that prohibits any landing lights that are required to provide visibility in the areas of forward position light and forward anticollision light blanking from being inoperative in conjunction with an inoperative lower body-mounted anticollision light.

Explanation of how design features or alternative Methods of Compliance (MoC) provide an equivalent level of safety to the level of safety intended by the regulation

The compensating factors raise the level of safety to that required by §§ 25.1387(b), 25.1287(c), and 25.1401(b) by providing acceptable aircraft lighting and visual cues to prevent a collision.

FAA approval and documentation of the ELOS finding

The FAA has approved the aforementioned ELOS finding in project issue paper SE-1. 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. This ELOS memorandum number must be listed in the Type Certificate Data Sheet under the Certification Basis section. An example of an appropriate statement is provided below.

Equivalent Level of Safety Findings have been made for the following regulation(s):

14 CFR 25.1387(b) and (c) Position light system dihedral angles, and 14 CFR 25.1401(b) Anticollision light system (documented in TAD ELOS Memorandum PS09-0863-SE-1)

Original signed by

Rob Duffer

Transport Airplane Directorate,
Aircraft Certification Service

3/12/15

Date

ELOS Originated by Boeing Aviation Safety Oversight Office	Jim Cashdollar	ANM-100B
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