



Federal Aviation Administration

Memorandum

Date: April 19, 2013

To: Robert G. Mann, Manager, Boston ACO, ANE-150

From: Ali Bahrami, Manager, Transport Airplane Directorate, ANM-100

Prepared by: Tony Pigott, ASE, Boston ACO, ANE-150

Subject: Equivalent Level of Safety (ELOS) Finding for Aviation Partner Boeing's project on a Boeing 737-800 Series, FAA Project # SA01671BO-T

ELOS Memo #: SA01671BO-T-S-1

Regulatory Ref: 14 CFR § 25.1387(e) Amendment 25-30

This memorandum informs the certificate management aircraft certification office of an evaluation made by the Accountable Directorate on the establishment of an equivalent level of safety finding for the Boeing Model 737-800 Series.

Background:

14 CFR § 25.1385(c) Amendment 25-38 requires that rear position lights be mounted as far aft as practicable on the tail or on each wing tip. Position lights provide airplane position, direction, and attitude to persons in other airplanes or on the ground.

14 CFR § 25.1387(e) Amendment 25-30 specifies the dihedral angle requirements of the rear position lights.

The rear position lights proposed by Aviation Partners Boeing do not meet the dihedral angle requirements as the proposed winglet design blocks the rear position light visibility beyond that which is allowed. That which is allowed is based on a tail mounted position light, not a wing tip mounted position light.

Applicable Regulations:

14 CFR § 25.1385(c) Amendment 25-38
14 CFR § 25.1387(e) Amendment 25-30.

Regulations Requiring an ELOS Finding:

14 CFR § 25.1387(e) Amendment 25-30.

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):

Three wing tip mounted features (listed below) provide for an equivalent level of safety to 14 CFR § 25.1387(e) Amendment 25-30.

- (1) The position of the blockage is such that the potential for an observing aircraft to be within the blockage area for any length of time is very small. In those instances, the anticollision lights would be very noticeable.
- (2) The aircraft has two complete anticollision light systems which will easily allow visibility of the aircraft in the very small areas of position light obstruction.
- (3) 14 CFR § 25.1387(e) Amendment 25-30 was established based on a single light in the tail of the airplane and did not take into account wingtip mounting which is much more effective, even with a small amount of blockage to the side due to winglet.:

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

Subject wing tip mounted features provide an equivalent level of safety by providing adequate aircraft lighting to prevent a collision.

FAA approval and documentation of the ELOS finding:

The FAA has approved the aforementioned equivalent level of safety finding in project issue paper S-1. This memorandum provides standardized documentation of the ELOS finding that is non-proprietary and can be made available to the public. The Accountable Directorate has assigned a unique ELOS Memorandum number (see front page) to facilitate achieving and retrieval of this ELOS. This ELOS Memorandum number must be listed in the Type Certificate Data Sheet under the Certification Basis section (TCs & ATCs) or in the Limitations and Conditions section of the STC. An example of an appropriate statement is provided below.

Equivalent Level of Safety Findings have been made for the following regulations:

14 CFR § 25.1387(e) Amendment 25-30 (documented in ELOS Memo SA01671BO-T-S-1)

Original signed by Paul Siegmund

4/19/2013

Transport Airplane Directorate
Aircraft Certification Service

Date

cc. Tony Pigott

File: 8110.1a(2) SA01671BO-T

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