



# Federal Aviation Administration

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## Memorandum

Date: 9/23/15

To: Manager, International Branch, ANM-116

From: Manager, Transport Airplane Directorate, ANM-100

Prepared by: Dan Jacquet, ANM-115

Subject: INFORMATION: Equivalent Level of Safety (ELOS) Finding for Seat Encroachment into the Emergency Exit Access on a Dassault Aviation Models Falcon 7X, Falcon 2000EX and Falcon 900EX airplanes, FAA Project #AT10010IB-T

ELOS Memo #: AT10010IB-T-CI-101

Regulatory Ref: §§ 25.813(c)(2)(ii) and 25.809(b)

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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 Models Falcon 7X, Falcon 2000EX and Falcon 900EX airplanes.

### Background

Title 14, Code of Federal Regulations (14 CFR) 25.813(c)(2)(i) requires no obstructions in the projected opening of a Type III exit for airplanes with 20 or more passenger seats. For airplanes with 19 or fewer passenger seats, § 25.813(c)(2)(ii) allows “minor” obstructions in the projected opening of a Type III, if there are compensating factors to maintain the effectiveness of the exit. Dassault Aviation installs seats that encroach into the project opening of the Type III exit to an extent that is considered more than minor.

Section 25.809(b) requires the passenger emergency exits be openable, from inside and outside, within 10 seconds measured from the time when the opening means is actuated.

The FAA issued Policy Memorandum ANM-115-08-02 on October 17, 2008, to provide clarification of the intent of the part 25 regulations related to providing access to Type III and IV

exits in airplanes with 19 or fewer passengers. Of particular importance is the following policy contained in that memorandum:

*Crew procedures or placards that specify a required taxi, take-off, and landing configuration are not sufficient to ensure access to, or openability of, Type III and IV exits in accordance with §§ 25.809(b) and 25.813(c)(2)(ii) on airplanes with 19 or less passenger seats. Applicants should demonstrate compliance with these requirements with interior features, such as seats, placed in their most adverse configuration and location. For seats that translate along a track or seat pan to detent or locked positions where the seat is secured, only the detent or locked positions need to be evaluated. Similarly, for seats that swivel, only detent or locked positions need to be evaluated.*

Making the findings of compliance to §§ 25.809(b) and 25.813(c)(2)(i) with the seats placed in the most detrimental detent/locked positions allowed by design (with respect to being able to open the exit and egress through the exit), reduces the amount of seat and furnishing movements during flight. To be able to retain a significant portion of these movements an ELOS finding was made to allow more than minor encroachment of the seats into the projected opening of the Type III exit.

#### **Applicable regulation(s)**

§§ 25.807, 25.809(b), 25.813(c)(2)(ii)

#### **Regulation(s) requiring an ELOS finding**

§§ 25.809(b) and 25.813(c)(2)(ii)

#### **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 compensating factors that provide an equivalent level of safety for the regulations not complied with are as follows:

- An Airplane Flight Manual (AFM) limitation requiring the flight crew to provide a safety briefing to the passengers that includes instructions regarding the proper positioning of the seats prior to taxi, take-off and landing. The flight crew must provide this briefing prior to each takeoff and landing.
- An alerting system which includes a sonalert and illuminated ordinance sign in the passenger cabin as well as a Cockpit Alerting System (CAS) message to the flight crew, indicating when the seats are not in the proper position for taxi, take-off and landing.
- With regard to § 25.809(b), the proposed compensating features are adequate to allow a showing of compliance with the interior features placed in the taxi, take-off and landing location and configuration.

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

The compensating factor(s) raise the level of safety to that required by §§ 25.809(b) and 25.813(c)(2)(ii) by ensuring the seats are placed in their taxi, take-off and landing positions prior to taxi, take-off and landing.

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

The FAA has approved the aforementioned ELOS finding in project Issue Paper CI-101, titled Seat Encroachment to Emergency Exit Access. 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:

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

§ 25.809(b) Emergency Exit Arrangement

Compliance to this regulation may be shown with the passenger seats placed in the taxi, take-off and landing position.

§ 25.813(c)(2)(ii) Emergency Exit Access

(documented in TAD ELOS Memorandum AT10010IB-T-CI-101)

*Original signed by Suzanne Masterson*

*9/23/15*

Transport Airplane Directorate,  
Aircraft Certification Service

Date

ELOS Originated by: Airframe and Cabin Safety Branch	Project Engineer: Dan Jacquet	Routing Symbol: ANM-115
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