

**Proposed Equivalent Safety Finding to JAR 25.813(c)(2) : Emergency Exit
Access – Applicable to Large Aeroplanes**

Introductory note:

The hereby presented Deviation to the EASA Certification Basis shall be subject to public consultation, in accordance with EASA Management Board decision 12/2007 dated 11 September 2007, Article 3 (2.) of which states:

"2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency."

Statement of issue

JAR 25.813(c)(2) at Change 13 states:

*There must be access from each aisle to each Type III or Type IV exit, and –
(...)*

(2) For aeroplanes that have a passenger seating configuration, excluding pilots seats, of 19 or less, there may be minor obstructions in this region, if there are compensating factors to maintain the effectiveness of the exit.

A design has been proposed which includes manually actuated (not electrical) movable seats in a cabin certified for not more than 19 passengers. The cabin is equipped with a single Type III overwing emergency exit located on the right hand side of the fuselage. The movable seats can present a major obstruction to the access to this exit in some positions.

**Equivalent Safety Finding D-xx -
Emergency Exit Access – JAR 25.813(c)(2)**

Applicant Proposal:

Considering the current rule (CS 25.813 (c)(4)(ii) at amendment 17, equivalent to JAR 25.813(c)(2) at Change 13), and the status of the current rulemaking activities (RMT.0264, Executive Interiors Accommodation), an equivalent level of safety to the direct compliance with JAR 25.813 (c)(2) at Change 13 can be provided showing that the effectiveness of the affected Type III exit is maintained by incorporating a set of compensating factors into the design.

Applicant Safety Equivalency Demonstration

The following compensating factors are aiming demonstrating the Equivalent level of Safety of the proposed configuration :

1a. The remaining opening with the seat in the most adverse position provides an exit that is at least as effective as that provided by a Type IV emergency exit.

In making the assessment of the exit effectiveness the safety issues covered by at least JAR25.807(a)(4), JAR25.809(b) and JAR25.813(c) at Change 13 must be considered; or

1b. If the remaining opening with the seat in the most adverse position does not provide an exit that is at least as effective as that provided by a Type IV emergency exit, it should be shown that following any single failure of a seat control, at least a Type IV exit equivalence can be restored by simple and obvious method. Methods using the normal mechanism functions can be considered as simple and obvious if properly justified; otherwise, the use of placard instructions is acceptable if it is shown that a passenger can easily restore at least a type IV exit equivalence using the available instructions.

In making the assessment of both the ability to restore the exit to at least one as effective as that provided by a Type IV emergency exit, and the effectiveness of the restored exit, the safety issues covered by at least JAR 25.807(a)(4), JAR 25.809(b) and JAR 25.813(c) must be considered.

When considering the safety issues covered by JAR 25.813(c), the following approach is acceptable:

- The region to be considered in front of the emergency exit for the obstruction evaluation can be defined with a distance that is either 40 cm or the width of the narrowest seat in the cabin, whichever is the least. It may not be perpendicular to the aircraft horizontal axis, but with a defined angle. The acceptability of this new region definition for obstruction evaluation should be based on the following criteria:
 - Access to the escape hatch
 - Ability to open the exit

; and

2. There is a cockpit message that notifies flight crew when the seat is not properly positioned prior to taxi, take-off and landing; and

3. There is an aural cabin alarm that notifies passengers when the seats are not properly positioned prior to taxi, take-off and landing, which sounds continuously in the passenger cabin; and

4. There is an illuminated cabin alert sign that notifies passengers in the immediate proximity of the emergency exit that the seats are not properly located and configured prior to taxi, take-off and landing; and

5. The cabin visual alert and aural alarm are sufficiently effective in flight, in particular, the audible alarm must be loud enough to be clearly heard at all passenger seats, and the characteristics of this alarm must be agreed with the Agency as being such that it is unlikely that occupants would ignore it.

However, it must not be so loud as to be an annoyance to the flight crew;
and

6. The monitoring and annunciation system is sufficiently reliable considering the risk of the seats being not properly located and configured at the start of an emergency evacuation; and

7. There is an AFM supplement, which defines the appropriate crew action (flight/and or cabin if present) in response to the cockpit alert; and

8. The AFM supplement requires a pre-flight briefing to explain the cabin annunciation system and the necessary response to be taken by the passengers.