



**European Aviation Safety Agency  
Rulemaking Directorate**

**EXPLANATORY NOTE**

**CS-25 Amendment 9**

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**1. GENERAL**

Executive Director Decision 2010/005/R amends Decision No 2003/02/RM of 17 October 2003 (CS-25 Initial Issue) as last amended by Executive Director Decision 2009/017/R of 11 December 2009 (CS-25 Amendment 8). It represents Amendment 9 of CS-25 Large Aeroplanes, and incorporates the output from the following EASA rulemaking tasks and editorial/inconsistencies corrections:

<b>Rulemaking Task No.</b>	<b>TITLE</b>	<b>NPA No.</b>
25.040	Type III emergency exit access and ease of operation	2008-04
MDM.034	Composites	2009-06
25.057	Security related design standards	2009-07

Each Notice of Proposed Amendment (NPA) has been subject to consultation in accordance with Article 52 of the Basic Regulation<sup>1</sup> and Article 15 of the Rulemaking Procedure established by the Management Board<sup>2</sup>. For detailed information on the proposed changes and their justification, please consult the above NPAs which are available on the Agency's website.

The Agency has addressed and responded to the comments received on each of the NPAs. The responses are contained in a comment-response document (CRD) which has been produced for each NPA (CRDs 2008-04, 2009-06 and 2009-07) and which are also available on the Agency's website.

<sup>1</sup> Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.03.2008, p. 1). Regulation as last amended by Commission Regulation (EC) 1108/2009 of the European Parliament and of the Council of 21 October 2009 (OJ L 309, 24.11.2009, p. 51).

<sup>2</sup> Management Board decision concerning the procedure to be applied by the Agency for the issuing of opinions, certification specifications and guidance material (Rulemaking Procedure), EASA MB 08-2007, 13.6.2007.

**2. CRD REACTIONS**

- In response to the CRD 2008-04, the Agency received the following substantive comment, which is reproduced below together with the Agency's responses:

CRD Comment No.	Commenter	Comment	EASA Response
1	Robin Boning, Air Safety Group	<p>"CS 25.813(c)(7) The design of each seat, bulkheads/partition or other feature, bounding the passageway leading to each Type III or Type IV exit must be such that</p> <p>(i) evacuees are prevented from climbing over in the course of evacuating."</p> <p>We would like to note that it is virtually impossible to prevent people climbing over seats, even if the seat backs do not fold forward at all. The wording of the advisory material does not give much help for the Applicant to know what means of compliance would be acceptable, other than (perhaps) a seatback to ceiling partition. Would the results from the Emergency Evacuation demonstration be monitored for compliance with this new requirement?</p> <p>Assuming that this is not EASA's intention, the ASG would suggest that the following wording (or similar) could achieve the same outcome:</p> <p>"(i) evacuees are discouraged from climbing over in the course of evacuating."</p> <p>Editorial Note: In the first line of the '813' requirement above, 'bulkhead' does not need to be plural.</p>	<p>The Agency notes your concern and agrees that there is no way to completely prevent people from climbing over seats.</p> <p>Nevertheless, the AMC 25.813 (c) 6 as written in the proposed amendment is really clear on the intent: it particularly gives guidelines to design an acceptable seatback, which should, for instance, remain essentially upright (no more than 20° rearward and 10° forward with a given horizontal load).</p> <p>The AMC wording clearly confirms that it is not the Agency's intention to mandate seatbacks going up to the ceiling.</p> <p>The Agency will anyway update CS 25.813 (c) (7) to better reflect the intent: "The design of each seat, bulkhead/partition or other feature, bounding the passageway leading to each Type III or Type IV exit, must be such that – (i) evacuees are <del>prevented</del> <b>hindered</b> from climbing over in the course of evacuating."</p> <p>In addition, and as requested, the Agency will correct the editorial mistake in the text ("bulkhead" instead of "bulkheads").</p>
2	Eric Bodin, Air France Design Organisation	<p>Response to ICCAIA comment # 29 :</p> <p>Reaction to "Comment to c(8)"</p>	<p>The openings between the armrests and the seat cushions are not the sort of "gap" meant by our</p>

		<p>The AMC text will be added to indicate in paragraph 8 "Entrapment" that any opening/gap that it poses a risk and which is more than one inch in width will need to be subject of particular scrutiny before being found acceptable.</p> <p>Question : The openings often present between the armrests and the seat cushions are bigger than one inch (see attached file). These openings could lead to easily place a foot when a person standing or kneeling on the seat. Does it mean that all the armrests of the seats bordering a passageway to type III and IV exits have to be foldable (especially regarding the armrest along the main aisle)?</p>	<p>specifications. The vertical gap between a cantilevered armrest and the cushions is not something that would be likely to trap someone, i.e. the gap is most likely to be too large to do that. However, if it were a smaller gap, such that a foot or other body part could become genuinely trapped, it would be covered by the rule/AMC and should be scrutinised before acceptance, as per AMC 25.813 (c) 8.</p> <p>The Agency has never considered that armrests per se present such a hazard in an exit row that they must be foldable (with an associated pre landing cabin crew procedure).</p>
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- In response to CRD 2009-06, the Agency received no substantive reactions applicable to CS-25.
- In response to the CRD 2009-07, the Agency received the following substantive comment, which is reproduced below together with the Agency's responses:

CRD Comment No.	Commenter	Comment	EASA Response
1	Boeing	<p>After considering the EASA comments, it is not clear that 14 CFR §25.795(d) is being interpreted in the same manner by all parties.</p> <p>Note the meaning if a comma representing a pause is added after "Airplanes" and between "cargo" and "only" as follows:</p> <p><i>"(d) Exceptions. Airplanes, used solely to transport cargo, only need to meet the requirements of paragraphs (b)(1), (b)(3), and (c)(2) of this section."</i></p> <p>As written, the paragraph becomes restrictive; that is, it states that regardless of what other regulations say, the all-cargo airplanes are <b>only</b> required to meet 25.795 paragraphs</p>	<p>The Agency confirms that the rule has been drafted in coordination with FAA with the same intent even though the wording is different.</p> <p>We confirm that the applicability of paragraph CS 25.795 (a) is only based on operational rules, as for FAR 25.795(a), regardless of what FAR 25.795(d) says.</p>

		<p>(b)(1), (b)(3) and (c)(2).</p> <p>This is how Boeing understands this requirement.</p> <p>However, note the difference if a comma is placed after "Airplanes" and the second comma instead is placed after "only" and before "need" as follows:</p> <p><i>"(d) Exceptions. Airplanes, used solely to transport cargo only, need to meet the requirements of paragraphs (b)(1), (b)(3), and (c)(2) of this section."</i></p> <p>Here the meaning of the paragraph is changed and Boeing agrees that in this case, if a change is made to the operational rules that affects flight deck doors on all-cargo airplanes, then paragraph (a) could apply.</p> <p>Accordingly, the question is: What was FAA's intent with paragraph (d)? As it is not clear that there is a need for this paragraph if the second case were true, Boeing suggests that the first case, with a pause/comma between "cargo" and "only" reflects FAA's intent and that this is a restrictive statement regardless of the operational rules.</p> <p>Boeing asks that EASA coordinate with FAA as to the correct intention of this paragraph and if it is truly the first case discussed above, then revise CS 25.795 to add paragraph (d) in which case, the original Boeing justification would still be valid.</p> <p>We would appreciate your reconsideration of this item. Our overall concern is that issues, especially those related to airplane security, should be fully harmonized so that there is no ambiguity as to what is required by OEMs, suppliers, airlines, and regulators.</p>	
2	Boeing	Since the issuance of Notice of Proposed Amendment (NPA) 2009-07, ongoing work with US	This comment has not impact on the certification Standard as written.

	<p>Government and projects with EASA have highlighted issues with sensitive security information (SSI) that were not addressed in Boeing's original comments to the NPA. Information that is classified by the US government as SSI requires special considerations.</p> <p>The US Title 49 Code of Federal Regulations (49 CFR) §1520.7 defines SSI as information that requires protection because public disclosure would be detrimental to the security of transportation. SSI is considered "Sensitive but Unclassified (SBU)." SSI protections are used extensively by the US Government and must be followed by private sectors. Civil penalties are assigned for unauthorized disclosure of SSI.</p> <p>Access to SSI is limited to "covered persons" listed in 49 CFR §1520.7 with a "need to know," as defined in 49 CFR §1520.11. The US Transportation Security Administration (TSA) indicates that EASA does not currently have the appropriate agreement in place with the US government to allow US entities to share SSI information with EASA.</p> <p>SSI material consists of information that fits within one or more of 16 categories, which include vulnerability assessments, threat information, critical aviation infrastructure asset information, systems security information, and other information deemed by TSA to be SSI. The requirements in the NPA involve SSI. This creates a challenge for the demonstration of compliance, since US companies cannot share the information with EASA. If EASA and the US government complete the appropriate agreement to permit sharing SSI information with EASA, EASA must follow specified procedures for protecting the SSI material.</p> <p>The nature of SSI material precludes</p>	<p>The Agency will consider SSI, if any, when the provisions are implemented.</p>
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		<p>its use in public processes such as defining certification requirements and the finding of compliance. Inappropriate disclosure of sensitive security information could provide adversaries the information needed to prepare an attack on the aviation system, and would violate US law.</p> <p>Boeing encourages EASA to continue to work with the FAA and the TSA to assure that the issues relates to sharing of SSI material are addressed, and that future security-related regulations are based on a common and accepted risk management process.</p>	
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### 3. EDITORIAL CORRECTIONS IN CS-25 AMENDMENT 9

Apart from the changes that resulted from the above NPAs, this Amendment 9 of CS-25 also incorporates several changes aiming to remove certain editorial errors and inconsistencies identified. Their description/justification is as follows:

**CS 25.113 (b) (2) was corrected to refer to AMC 25.113 instead of AMC 113.**

**CS 25.981 and AMC to CS 25.1711 are corrected as follow:**

- AMC 25.1711

Paragraph 7:

"CS 25.981(b) states that "...visible means to identify critical features of the design must be placed in areas of the aeroplane where maintenance, actions, repairs, or alterations may be apt to violate the critical design configuration limitations (e.g., colour-coding of wire to identify separation limitation)." The design approval holder should define a method of ensuring that this essential information will:

- be communicated by statements in appropriate manuals, such as wiring diagram manuals, and
- be evident to those who may perform and approve such repairs and alterations.

An example of a critical design configuration control limitation that would result in a requirement for visible identification means would be a requirement to maintain wire separation between FQIS (fuel quantity indication system) wiring and other electrical circuits that could introduce unsafe levels of energy into the FQIS wires. Acceptable means of providing visible identification means for this limitation would include colour-coding of the wiring or, for retrofit, placement of identification tabs at specific intervals along the wiring."

The first sentence is not correct: CS 25.981(b) has never included this statement. It was taken from FAA AC 25.981-1B (now -1C) which refers to Part 25, Section 25.981(b).

It has to be noted that this reference is also false in FAR Part 25 as FAR Part 25.981(b) was modified at Amendment 25-125 (on 19 September 2008). Now the correct reference should be FAR Part 25.981(d) which provides this statement with a slightly modified wording.

So it is proposed to correct AMC 25.1711 to refer to a newly created 25.981(d) (see hereunder for the proposed 25.981(d)).

In addition, "color-coding" is corrected into "colour-coding".

- Moreover, **AMC 25.1711 refers to** a critical design configuration control limitation (**CDCCL**) **whereas** the definition of CDCCL does not exist neither in CS-25 nor in CS-Definitions. The definition is then added in CS 25.981(d) similar to the one of FAR Part 25.981(d).

**CS 25J951(c) was corrected to refer to 0.20 cm<sup>3</sup> instead of 0.10 cm<sup>3</sup>.**

**AMC 25.981(a) chart is corrected as follow: the reference given in the first box is removed:**

NO TANK IGNITION SOURCES EASA policy statement D-2005/ CPRO/ (INT/POL /25/12)
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