

EASA	NOTIFICATION OF A PROPOSAL TO ISSUE A CERTIFICATION MEMORANDUM
	EASA Proposed CM No.: EASA Proposed CM - CS – 007 Issue: 01 Issue Date: 27th of March 2014 Issued by: Cabin Safety and Cabin Crew section Approved by: Head of Certification Experts Department Regulatory Requirement(s): CS 25.815

In accordance with the EASA Certification Memorandum procedural guideline, the European Aviation Safety Agency proposes to issue an EASA Certification Memorandum (CM) on the subject identified below.

All interested persons may send their comments, referencing the EASA Proposed CM Number above, to the e-mail address specified in the “Remarks” section, prior to the indicated closing date for consultation.

EASA Certification Memoranda clarify the European Aviation Safety Agency’s general course of action on specific certification items. They are intended to provide guidance on a particular subject and, as non-binding material, may provide complementary information and guidance for compliance demonstration with current standards. Certification Memoranda are provided for information purposes only and must not be misconstrued as formally adopted Acceptable Means of Compliance (AMC) or as Guidance Material (GM). Certification Memoranda are not intended to introduce new certification requirements or to modify existing certification requirements and do not constitute any legal obligation.

EASA Certification Memoranda are living documents into which either additional criteria or additional issues can be incorporated as soon as a need is identified by EASA.

Subject

Width of Aisle

Log of Issues

Issue	Issue date	Change description
01	27.03.2014	First issue.

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1. INTRODUCTION

1.1. PURPOSE AND SCOPE

The purpose of **this** Certification Memorandum is to provide specific guidance about methods of compliance with the requirements of CS 25.815 at Amendment 14 and the equivalent requirements included in JAR/CS-25 at previous Changes/Amendments.

1.2. REFERENCES

It is intended that the following reference materials be used in conjunction with this Certification Memorandum:

Reference	Title	Code	Issue	Date
CS 25.815	CS-25 – Book 1 - Certification Specifications and Acceptable Means of Compliance for Large Aeroplanes – Subpart D Design and Construction - Width of Aisle	CS-25	14	19/12/2013
FAA AC 25-17A	Transport Airplane Cabin Interiors Crashworthiness Handbook	N/A	N/A	18/05/2009

1.3. ABBREVIATIONS

The following abbreviations are used in this Certification Memorandum:

Abbreviation	Meaning
TT&L	Taxi, Take-Off and Landing

1.4. DEFINITIONS

The following definitions are used in this Certification Memorandum:

Definition	Meaning
Front Row Seat	A seat installed aft of an interior component other than a seat (bulkhead, galley, lavatory, partition, class divider, etc.), a cross aisle, a passageway leading to an exit.

2. BACKGROUND

CS 25.815 at Amendment 14 prescribes the following:

"The passenger aisle width at any point between seats must equal or exceed the values in the following table:

Passenger seating capacity	Minimum passenger aisle width (cm (inches))	
	Less than 64 cm (25 inches) from floor	64 cm (25 inches) and more from floor
10 or less	30 (12)*	38 (15)
11 to 19	30 (12)	51 (20)
20 or more	38 (15)	51 (20)

** A narrower width not less than 23 cm (9 inches) may be approved when substantiated by tests found necessary by the Agency."*

FAA AC 25-17A provides the following guidelines on the determination of the width of aisle between interior components other than seats:

"When the measurement is not between seats but between other aisle constraints such as galleys, coat closets, storage compartments, etc., the minimum widths at the specified vertical distance above the floor still prevails."

It must be noted that the specification for width of aisle does not specify that the requirement only applies to taxi, take-off, and landing configuration of seats. Therefore, the specified aisle width is required to be maintained during all phases of flight.

Aisles are required to allow for rapid egress from the aeroplane in an emergency but they also provide the means for crewmembers to access all parts of the cabin during airplane operations to address emergency conditions. Additionally, they allow passengers to return to their seats during turbulence. Not providing adequate aisles during flight may prevent the accomplishment of the latter needs.

Aisle widths should be determined with seats and their deployable features in the most critical position allowed by the design. This practice is based on the assumption that the seats could be in this configuration during an emergency. For example, when the in-armrest video monitor of a seat (E/C front-row, Premium Economy, B/C) is deployed, the minimum aisle width of 51 cm (20") might not be maintained above 64 cm (25") of height from the floor.

As a result of repetitive findings during cabin inspection conducted on several aeroplane models, EASA has concluded that seat design has developed in a way that the cases of non-compliance with CS 25.815 during phases of flight other than Taxi, Take-Off and Landing (TT&L), are increasing. This trend is mainly due to the proliferation of seat places equipped with in-armrest table and/or monitor.

3. EASA CERTIFICATION POLICY

3.1. EASA POLICY

In principle, seat deployable items may not encroach during any phase of flight into the minimum aisle width specified in CS 25.815.

For the measurement of the aisle width, all possible stable position of moveable or deployable items should be evaluated. Any non-self-supporting position does not need to be considered. For example, armrest covers which need to be lifted only during deployment/stowage of in-armrest table and which are then spring loaded closed do not need to be considered.

For the dimensional check cylinders of 51 cm (20") and 38 cm (15") diameter can be used. An aisle width fully compliant to CS 25.815 will allow a 51 cm (20") diameter cylinder placed above a 38 cm (15") diameter cylinder with an height equal to 63 cm (25"), to slide along the aisle. In doing so the lower cylinder may move relative to the upper one but should always remain entirely within the vertical projection of the upper cylinder.

The necessity to provide the occupants of seats with design features, such as tray tables and monitors, may result in minor encroachments into the minimum required aisle width. EASA considers that such minor encroachments can be considered negligible during phases of flight other than Taxi, Take-Off and Landing (TT&L), and thus are not to be considered non-compliances to CS 25.815, provided that the criteria specified in the present Certification Memorandum are met.

EASA would like to highlight that it should always be a design objective to minimize the encroachment into the aisle of such deployable items.

The criteria for the identification of acceptable encroachments of seat deployable items into the aisle width envelope required by CS 25.815 are the following:

- 1) Encroachment into the dimensional aisle width limits of CS 25.815 is allowed:
 - a. Only in phases of flight other than TT&L.
 - b. Only for deployable video monitors and tables that are not electrically operated, under the limitations specified in points 2 respectively 3 below.
- 2) Video monitors
 - a. Encroaching into the minimum aisle width envelope defined by CS 25.815 is allowed only for video monitors mounted on front row seats. It is not allowed on repetitive seat rows, except when a seat abreast change occurs.
 - b. If a deployable video monitor encroaches into the minimum aisle width envelope required by CS 25.815, all the following conditions should be met:
 - i) a minimum aisle width equal to 38 cm (15") from floor to ceiling should be maintained in every stable position that the video monitor may assume. Encroachment in the 38 cm (15") aisle width envelope is acceptable if the minimum 38 cm (15") aisle width can be achieved by rotating the video monitor around its tilt axis, i.e. an axis parallel to the lower edge of the viewing surface.
 - ii) In the event of any encroachment allowed by i) above, it should be possible to restore the minimum aisle width envelope required by CS 25.815 through the application of a force on the video monitor not greater than 45 N (10 lbf) in at least one direction. The application of the load should be intuitive and should be possible with one hand and with a single action. For example, opening an armrest cover to stow the video monitor is not allowed. Movement around the video monitor's tilt axis does not count as an action.

iii) During the transition from the stowed position to the in-use position, the supporting arm of the video monitor should move parallel to the centreline of the aisle.

iv) In any position after deployment, regardless if stable or not, monitors installed on different seats should not come in contact with each other.

3) Tables

- a. Encroachment into the minimum aisle width envelope defined by CS 25.815 is considered acceptable on all seat rows.
- b. If a deployable table encroaches into the minimum aisle width envelope required by 25.815, all the following conditions should be met:
 - i) The hinge mechanism of a deployed in-armrest table may have a length up to 102 mm (4") and a height up to 51 mm (2"), measured from the top of the seat armrest, but should not protrude into the aisle beyond the armrest.
 - ii) A table leaf with a thickness of maximum 25 mm (1") may rest on an armrest but should not protrude into the aisle beyond the armrest.

3.2. WHO THIS CERTIFICATION MEMORANDUM AFFECTS

This Certification Memorandum affects all organisations that design cabin interiors for which the Certification Basis includes CS 25.815 at Amendment 14 or the equivalent requirements included in JAR/CS-25 at previous Changes/Amendments.

4. REMARKS

1. This EASA Proposed Certification Memorandum will be closed for public consultation on the **8th of May 2014**. Comments received after the indicated closing date for consultation might not be taken into account.
2. Comments regarding this EASA Proposed Certification Memorandum should be referred to the Certification Policy and Planning Department, Certification Directorate, EASA. E-mail CM@easa.europa.eu or fax +49 (0)221 89990 4459.
3. For any question concerning the technical content of this EASA Proposed Certification Memorandum, please contact:

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