AMC to Appendix S, S25.10(d) and (e) Deactivation of existing Emergency Exits

ED Decision 2017/015/R

(1) General

S25.10(d)(3) requires to ensure that the distance from each passenger seat to at least one non-deactivated emergency exit on each side of the fuselage remains compatible with easy egress from the aeroplane.

For the purpose of this provision, a passenger seat distribution will be considered to meet this objective, provided that each passenger seat approved for use during taxiing, take-off, or landing is located such that:

(a) It is within 9.14 m (30 ft) from the nearest emergency exit on one side of the fuselage on the same deck, and within 13.72 m (45 ft) from the nearest emergency exit on the other side of the fuselage on the same deck; and

(b) The occupant of that seat has the possibility to move to an emergency exit, on the left side, or the right side of the fuselage, whilst at all points along the way remaining within 9.14 m (30 ft) from an emergency exit on one side of the fuselage on the same deck and within 13.72 m (45 ft) from an emergency exit on the other side of the fuselage on the same deck.

When calculating the distance from a passenger seat, or from any point in the egress path of an occupant, to an emergency exit, this distance should be taken as the total longitudinal distance (i.e. as measured parallel to the aeroplane's longitudinal axis) that the escapee should cover in order to get to the emergency exit in question (i.e. the distance calculated should take into account all required changes in the direction of movement but measured only longitudinally). For the distance from a passenger seat, as starting point, the front edge of the seat bottom cushion at the seat centreline is to be taken (for forward, angled, side or aft-facing seats), and as end point, the nearest exit edge.

For aeroplanes with an approved passenger seating configuration of 19 or less, only one pair of emergency exits is required. However, such aeroplanes may have additional exits installed, which must then comply with CS 25.807(h) but not with the 18.3-m (60-feet) rule of CS 25.807(f)(4). The distance between each passenger seat and the nearest available emergency exit may be determined considering all available emergency exits, including the ones addressed by CS 25.807(h).

When deactivation of one or more emergency exits results in an emergency exit arrangement that is asymmetrical relative to the aeroplane centre line, the acceptable seating capacity for each cabin zone should be determined considering the emergency exits remaining available on each side of the fuselage separately, i.e. following a similar methodology as the one used in FAA AC 25.807-1, Uniform distribution of exits, 13 August 1990.

(2) Examples

The following examples illustrate the analysis method to be followed when examining the acceptability of various emergency exit deactivation schemes on an aeroplane that is originally type-certified with two pairs of Type C exits (rated at 55 passengers for each pair) at the forward and aft limits of the cabin, and a single pair of overwing Type III exits (rated at 35 passengers). In accordance with CS 25.807, this emergency exit layout will have a possible maximum

approved passenger capacity of 145 (55 + 35 + 55). It is assumed that the aeroplane manufacturer has received approval for this number of passengers.

The distance between the nearest exit edges of the two pairs of Type C exits is 20 m (65.7 ft). The overwing exits pair's forward edges are 8 m (26.3 ft) from the rear edges of the forward Type C exit pair.

The figures below provide additional clarification on the methodology to be used and the resultant limitations.

A cabin area that should not include any crew or passenger seats that can be occupied during taxiing, take-off, and landing is referred to as a 'stay-out zone', coloured pink in the illustrations below. The hatched/yellow areas in the illustrations below are referred to as 'additional stay-out zones' and should also not include any crew or passenger seats that can be occupied during taxiing, take-off, and landing. Seats located within these latter zones do meet the criteria of the above paragraph (1)(a) but do not meet the criteria of the above paragraph (1)(b). In other words, although these zones are located sufficiently close to emergency exits to meet the basic emergency exit egress distance requirements on both sides of the fuselage, an occupant of one of these seats would be forced to traverse a cabin area that does not meet these requirements, i.e. a stay-out zone, in order to egress the aeroplane.

Example 1

In the first example, only the left hand (LH) overwing Type III exit is deactivated.

Identification of stay-out zones

No stay-out zone needs to be identified in the cabin, if any possible passenger seat location will be no more than 9.14 m (30 ft) from the nearest exit on one side of thefuselage, and no more than 13.72 m (45 ft) from the nearest exit on the other side of the fuselage, i.e. in compliance with the above paragraph 1.(i).

Calculation of the basic passenger seating configuration limitations set by S25.1(a).

In the case of non-commercial operations, in accordance with S25.1(a), the passenger capacity will have an upper possible limit of 73 passengers (1/2 of 145 (55 + 35 + 55) rounded up), i.e. one half of the maximum passenger seating capacity of the type-certified aeroplane having all exits functional.

In the case of commercial operations, in accordance with S25.1(a), the passenger capacity will have an upper possible limit of 48 passengers (1/3 of 145 (55 + 35 + 55) rounded down), i.e. one third of the maximum passenger seating capacity of the type-certified aeroplane having all exits functional. Additionally, there will be an upper possible limit of 30 passengers seated forward or aft of the overwing exits (1/3 of 90 (55 + 35)), i.e. one third of the maximum passenger seating capacity for each cabin zone of the type-certified aeroplane having all exits functional.

Calculation of additional passenger seating limitations due to exit deactivation

Firstly, a zonal analysis is conducted on the right side of the fuselage in accordance with S25.10(d). Two zones are represented by the exits on this side (all original emergency exits remain functional).

The allowable number of seats between the forward Type C exit and the overwing exit is limited to one half of the sum of the ratings of the exits that bound the zone: 1/2 of 90 (55 + 35) = 45.

The same limit is valid also for the zone between the overwing exit and the rearmost Type C exit.

Secondly, a zonal analysis is conducted on the left side of the fuselage in accordance with S25.10(d). There is only one zone represented by the remaining functional exits on this side. The allowable number of passenger seats between the forward and aft Type C exits is again limited to one half of the sum of the exit ratings that bound the zone: 1/2 of 110 (55 + 55) = 55.

The passenger seating locations for taxiing, take-off, and landing should simultaneously satisfy all basic limitations set by S25.1(a) and both of the zonal analyses in accordance with S25.10(d).

In the case of non-commercial operations, this means that the passenger seating configuration is limited to 55 (i.e. in this case, the limitation resulting from the left-side fuselage zonal analysis is most constraining and defines the maximum seating capacity of the aeroplane) and a maximum of 45 passenger seats located either forward or aft of the remaining functional overwing exit may be occupied for taxiing, take-off, and landing.

However, for commercial operations, an overriding consideration applies due to the fact that there is a non-compliance with CS 25.807(f)(4) on the left side of the fuselage, andthe provisions of S25.10(d) only apply to non-commercial operations. The seating capacity of the example aeroplane in commercial operation will thus be limited to 19 seats because CS 25.807(f)(4) only applies to aeroplanes for which more than one exit pair is required. However, there will be no limitation on the passenger seating location for taxiing, take-off, and landing, as explained in AMC 25.807.

Example 2

In the second example, both left hand (LH) and right hand (RH) overwing Type III exits are deactivated. The aeroplane has thus only two pairs of remaining functional Type C exits located at either end of the cabin.

Identification of stay-out zones

A stay-out zone is identified in the middle of the cabin, where a passenger seat that can be occupied during taxiing, take-off, and landing would not be in compliance with the above paragraph 1.(i), i.e. would be further than 9.14 m (30 ft) from the nearest exit, on both sides of the fuselage. The exact limitation on the seat installation location in order to respect the stay-out zone should be calculated using the longitudinal measurement method as explained in AMC 25.807.

Calculation of the basic passenger seating configuration limitation set by S25.1(a)

In the case of non-commercial operations, in accordance with S25.1(a), the passenger capacity will have an upper possible limit of 73 passengers (1/2 of 145 (55 + 35 + 55) rounded up), i.e. one half of the maximum passenger seating capacity of the type-certified aeroplane having all exits functional.

In the case of commercial operations, in accordance with S25.1(a), the passenger capacity will have an upper possible limit of 48 passengers (1/3 of 145 (55 + 35 + 55) rounded down), i.e. one third of the maximum passenger seating capacity of the type-certified aeroplane having all exits functional. Additionally, there will be an upper possible limit of 30 passengers seated forward or aft of the overwing exits (1/3 of 90 (55+35)), i.e. one third of the maximum passenger seating capacity for each cabin zone of the type-certified aeroplane having all exits functional.

Calculation of additional passenger seating limitations due to exit deactivation

In this example, the arrangement of the remaining functional exit is symmetrical on either side of the aeroplane centre line, hence, no separate LH and RH zonal analyses are required, and only one cabin zone remains.

The zonal analysis, in accordance with S25.10(d), results in the number of seats that may be occupied during taxiing, take-off, and landing between the forward and aft Type C exits, limited to one half of the sum of the ratings of the exits that bound the zone: i.e. 1/2 of 110 (55 + 55) = 55.

The passenger seating locations for taxiing, take-off, and landing should simultaneously satisfy all basic limitations set by S25.1(a) and the zonal analysis in accordance with S25.10(d). Therefore, for non-commercial operations, a maximum total of 55 passenger seats may be occupied during taxiing, take-off, and landing, in any combination of individual locations forward or aft of the identified stay-out zone.

For commercial operations, as in Example 1, the seating capacity of the aeroplane will be limited to 19, due to non-compliance with CS 25.807(f)(4), on both sides of the fuselage this time. However, as also explained in Example 1, the total of 19 passenger seats that can be occupied during taxiing, take-off, and landing may be in any combination of locations forward or aft of the identified stay-out zone.

Example 3

In the third example, the rearmost LH Type C exit is deactivated. The aeroplane has, thus, one pair of functional forward Type C emergency exits and one pair of functional overwing Type III emergency exits, and a functional aft Type C emergency exit on the RH side only.

Identification of stay-out zones

No stay-out zone can be identified in the cabin, i.e. any possible passenger seat location will be no more than 9.14 m (30 ft) from the nearest exit on one side of the fuselage, and no more than 13.72 m (45 ft) from the nearest exit on the other side of the fuselage.

Calculation of the basic passenger seating configuration limitations set by S25.1(a)

In the case of non-commercial operation, in accordance with S25.1(a), the passenger capacity will be limited to 73 passengers (1/2 of 145 (55+35+55) rounded up), i.e. one half the maximum passenger seating capacity of the type certified aeroplane with all exits functional.

In the case of commercial operation, in accordance with S25.1(a), the passenger capacity will have an upper possible limit of 48 passengers (1/3 of 145 (55+35+55) rounded down), i.e. one third the maximum passenger seating capacity of the type certified aeroplane with all exits functional. Additionally, there will be an upper possible limit of 30 passengers seated forward or aft of the overwing exits (1/3 of 90 (55+35)), i.e. one third of the maximum passenger seating capacity for each cabin zone of the type certified aeroplane with all exits functional.

Calculation of additional passenger seating limitations due to exit deactivation

Firstly, a zonal analysis is conducted on the right side of the fuselage, in accordance with S25.10(d). Two zones are represented by the remaining functional exits on this side (all original emergency exits remain functional).

The allowable number of seats for installation between the forward Type C and the overwing exit is limited to one half of the sum of the ratings of the exits that bound the zone: 1/2 of 90 (55 + 35) = 45.

The same limit is also valid for the zone between the overwing emergency exit and the rearmost Type C exit. Secondly, a zonal analysis is conducted on the left side of the fuselage. Again, two zones are represented by the remaining functional emergency exits on this side, but this time, one zone is a so-called dead end zone.

As for the right side, it is acceptable to install 45 seats between the forward Type C and the overwing exit: 1/2 of 90 (55 + 35) = 45.

In the dead end zone aft of the overwing exit, it is acceptable to install a maximum of 18 seats (1/2 of 35 rounded up).

The passenger seating locations for taxiing, take-off, and landing should simultaneously satisfy all basic limitations set by S25.1(a) and both of the zonal analyses in accordance with S25.10(d).

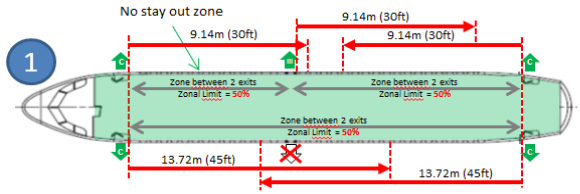
Therefore, for non-commercial operations, this results in a maximum total seating capacity of 63 when it simultaneously satisfies the upper limit for each zone, i.e. 45 for the forward zone and 18 for the aft zone.

In case of commercial operations, the total capacity of the aeroplane will be limited to 48 passengers, not exceeding 30 passengers forward of and 18 aft of the overwing exits.

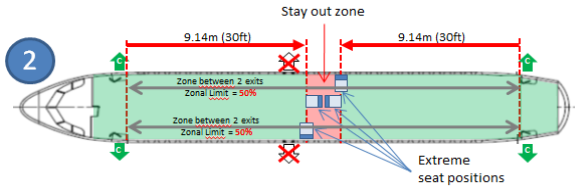
Further examples

In addition to Examples 1, 2 and 3 above, further examples of exit deactivation for the same basic aeroplane are illustrated, and the resultant allowable passenger seating restrictions are summarised.

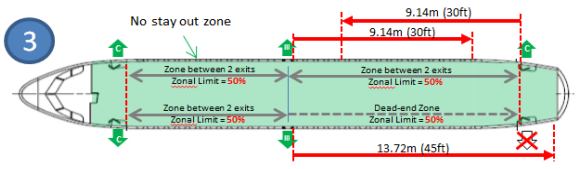
The principles evident from these examples can be used to determine zonal capacities and stay-out zones for any aeroplane.



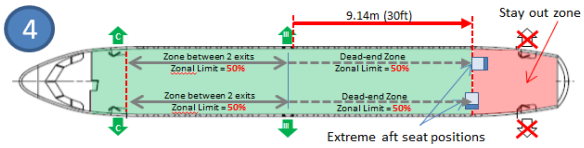
	Operations	Eligibility limit	Zonal limits	Total Limit
1	Non-Commercial	1/2 TC = 73	RH: 50% [90+90] = 90 LH: 50% [110] = 55	55
2	Commercial Low occupancy	1/3 TC = 48 1/3 per zone	Distance>60ft: No zonal analysis required	19 (Distance>60ft)
3	Commercial (>1/3 TC + per zone)	Not Authorized	Not Authorized	Not Authorized



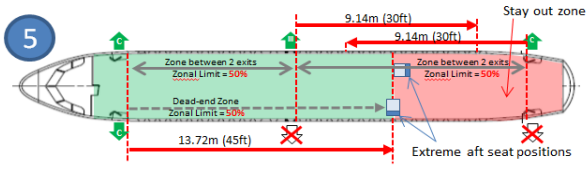
	Operations	Eligibility limit	Zonal limits	Total Limit
1	Non-Commercial	1/2 TC = 73	RH: 50% [110] = 55 LH: 50% [110] = 55	55
2	Commercial Low occupancy	1/3 TC = 48 1/3 per zone	Distance>60ft: No zonal analysis required	19 (Distance>60ft)
3	Commercial (>1/3 TC + per zone)	Not Authorized	Not Authorized	Not Authorized



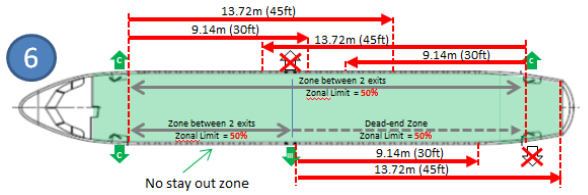
	Operations	Eligibility limit	Zonal limits	Total Limit
1	Non-Commercial	1/2 TC = 73	RH: 50% [90+90] = 90 LH: 50% [90+35] = 63	63
2	Commercial Low occupancy	1/3 TC = 48 1/3 per zone	RH: 50% [90+90] = 90 LH: 50% [90+35] = 45+18 1/3* [55+35] = 30 / zone	48 (30+18)
3	Commercial (>1/3 TC + per zone)	Not Authorized	Not Authorized	Not Authorized



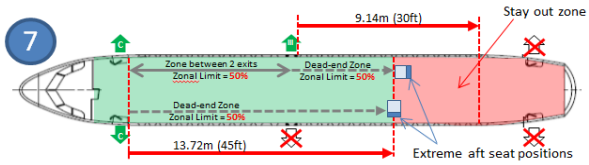
	Operations	Eligibility limit	Zonal limits	Total Limit
1	Non-Commercial	1/2 TC = 73	RH: 50% [90+35] = 63 LH: 50% [90+35] = 63	63
2	Commercial Low occupancy	1/3 TC = 48 1/3 per zone	RH: 50% [90+35] = 45+18 LH: 50% [90+35] = 45+18 1/3* [55+35] = 30 / zone	48 (30+18)
3	Commercial (>1/3 TC + per zone)	Not Authorized	Not Authorized	Not Authorized



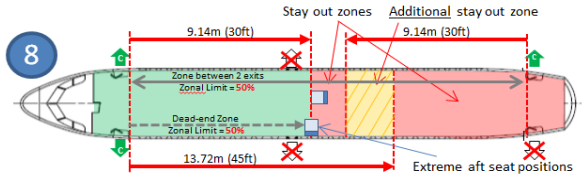
Operations		Eligibility limit	Zonal limits	Total Limit
1	Non-Commercial	1/2 TC = 73	Only one pair of exits: No zonal analysis required	19 (25.807 limit with only one pair)
2	Commercial Low occupancy	1/3 TC = 48 1/3 per zone	Only one pair of exits: No zonal analysis required	
3	Commercial (>1/3 TC + per zone)	Not Authorized	Not Authorized	Not Authorized



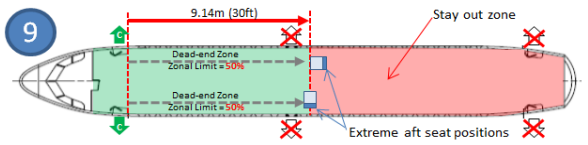
Operations		Eligibility limit	Zonal limits	Total Limit
1	Non-Commercial	1/2 TC = 73	RH: 50% [110] = 55 LH: 50% [90+35] = 63	55
2	Commercial Low occupancy	1/3 TC = 48 1/3 per zone	Distance>60ft: No zonal analysis required	19 (Distance>60ft)
3	Commercial (>1/3 TC + per zone)	Not Authorized	Not Authorized	Not Authorized



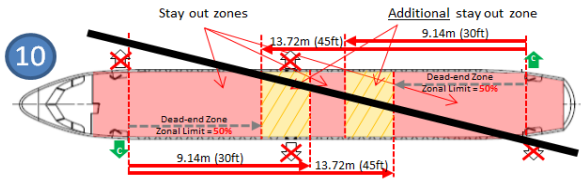
Operations		Eligibility limit	Zonal limits	Total Limit
1	Non-Commercial	1/2 TC = 73	Only one pair of exits: No zonal analysis required	19 (25.807 limit with only one pair)
2	Commercial Low occupancy	1/3 TC = 48 1/3 per zone	Only one pair of exits: No zonal analysis required	
3	Commercial (>1/3 TC + per zone)	Not Authorized	Not Authorized	Not Authorized



Operations		Eligibility limit	Zonal limits	Total Limit
1	Non-Commercial	1/2 TC = 73	Only one pair of exits: No zonal analysis required	19 (25.807 limit with only one pair)
2	Commercial Low occupancy	1/3 TC = 48 1/3 per zone	Only one pair of exits: No zonal analysis required	
3	Commercial (>1/3 TC + per zone)	Not Authorized	Not Authorized	Not Authorized



Operations		Eligibility limit	Zonal limits	Total Limit
1	Non-Commercial	1/2 TC = 73	Only one pair of exits: No zonal analysis required	19 (25.807 limit with only one pair)
2	Commercial Low occupancy	1/3 TC = 48 1/3 per zone	Only one pair of exits: No zonal analysis required	
3	Commercial (>1/3 TC + per zone)	Not Authorized	Not Authorized	Not Authorized



Operations		Eligibility limit	Zonal limits	Total Limit
1	Non-Commercial	1/2 TC = 73	Only one pair of exits: No zonal analysis required	0 Only stay out zones
2	Commercial Low occupancy	1/3 TC = 48 1/3 per zone	Only one pair of exits: No zonal analysis required	
3	Commercial (>1/3 TC + per zone)	Not Authorized	Not Authorized	Not Authorized

[Amdt 25/19]

S25.20 Emergency Evacuation

ED Decision 2017/015/R

(a) *Flammability Requirements*

(1) Mattresses of permanent bed installations that are located in compartments isolated from the main passenger cabin by doors or equivalent means that would normally be closed during taxiing, take-off, and landing do not need to meet the 'Oil Burner Test' requirement of Appendix F, Part II as required by CS 25.853(c) (See AMC to Appendix S, S25.20(a)(1)).

(2) On non-commercially operated aeroplanes only, compliance with CS 25.853(d) does not need to be demonstrated if it can be shown by test or a combination of test and analysis

under the conditions specified in Appendix J that the maximum time for evacuation of all occupants does not exceed 45 sec.

(b) *Access to Type III and IV Emergency Exits*: low-occupancy aeroplanes that have a passenger seating configuration of 19 or less and non-commercially operated aeroplanes may have an item deployable into the region defined by CS 25.813 (c)(4)(i) or CS 25.813 (c)(1), (2) or (3) which creates an obstruction and, therefore, leads to non-compliance with one or more of the aforementioned requirements, provided that:

(1) it is ensured that the item will be safely stowed before entering any of the taxiing, take-off, approach, and landing phases, by means of a position monitoring and alerting system that, in a timely manner, notifies the flight crew and compels the passengers to stow the item if it is in a position that creates an obstruction (See AMC to Appendix S, S25.20(b)(1)). It must be substantiated that, with the item in its most adverse position(s), the remaining exit is at least as effective as a Type IV emergency exit, unless it can be shown that following any single failure, an exit at least as effective as a Type IV emergency exit can be obtained by simple and obvious means; or

(2) the approved passenger configuration is such that this number of passengers can be evacuated through the exit in question, with the obstruction in its most adverse position and under the conditions of Appendix J, at least as quickly as the maximum number of passengers allowed by CS 25.807(g) without the obstruction. It must be substantiated that, with the obstruction in place, the remaining exit is at least as effective as a Type IV emergency exit; or

(3) for aeroplanes required to have at least one cabin crew member on board, the item is intended for use only by a cabin crew member that has direct view of the deployable item and can confirm that it is correctly stowed and secured, while they are seated during taxiing, take-off, and landing.

[Amdt 25/19]

AMC to Appendix S, S25.20(a)(1) Flammability of Bed Mattresses

ED Decision 2017/015/R

Mattresses of beds that are convertible to/from seats, regardless of their location in the aeroplane, and irrespective of whether or not the seat configuration is approved for occupancy during taxiing, take-off, and landing, should meet the criteria of CS-25, Appendix F, Part II.

As required by CS-25, Appendix F, mattress foam shall be tested for 12,7-mm (1/2-in.) thickness. If the mattress consists of two or more foams glued together, the foam specimen should consist of two 6.34-mm (1/4-in.) (three layers of 4.2 mm (1/6 in.), etc.) pieces glued together. Three specimens should be made for each combination of foams that are glued together in the production mattress. Any other production mattress components that are glued together should also be tested together.

If such specimens do not meet the test criteria of CS-25, Appendix F, Part I, it is acceptable to test each production mattress component separately, including a sheet of glue, using the test criteria of Appendix F, Part I.

Additionally, the Bunsen burner is then to be applied at three separate corners of the production mattress with all its components. The three-corner test does not need to be conducted if the cushion passes the tests of CS-25, Appendix F, Part II.

[Amdt 25/19]

AMC to Appendix S, S25.20(b) Exit as effective as a Type IV exit

ED Decision 2017/015/R

An acceptable means of compliance with the requirement that the remaining exit resulting from an obstruction shall be as effective as a Type IV emergency exit (S25.20(b)(1) and (b)(2)), is to demonstrate that:

(1) the dimensions of the remaining exit opening are equivalent to or greater than those of a Type IV emergency exit; and

(2) the obstructing item does not protrude into the horizontally projected opening of the remaining exit.

In the assessment of the effectiveness of the remaining exit, the requirements of CS 25.807(a)(4), CS 25.809(b) and CS 25.813(c)(1) should also be considered.

[Amdt 25/19]

AMC to Appendix S, S25.20(b)(1) Ensuring removal of in-flight obstructions before take-off and landing

ED Decision 2017/015/R

This paragraph provides guidelines regarding the criteria under which an item, although constituting an obstruction that does not comply to CS 25.813(c), may be considered acceptable because per design and procedure, there can be high confidence that the obstruction will be removed when needed for safety (S25.20(b)(1)).

In addition to the exceptions set in Section 2 — Deployable features of AMC 25.813(c), an item which can be deployed by a crew member or passenger into the region defined by CS 25.813 (c)(4)(i) or into the passageway required by CS 25.813 (c)(1), (2) or (3), but which, when stowed, is no longer in either of these areas, is acceptable if there is enough assurance that the item will be stowed when needed. Such assurance may be assumed when all following conditions are met:

(1) A position monitoring system is installed, which detects that the item is not properly stowed, and triggers both alerts in the passenger cabin and a visual indication to the flight crew if the item is not properly stowed before entering any of the taxiing, take-off, approach, and landing phases.

(2) The alerts in the cabin, required in paragraph (1), include an aural device which sounds continuously in all areas of the passenger cabin (it should be loud enough to clearly act as an irritant, thus assuring that occupants will stow the obstruction, but not so loud as to distract the flight crew), as well as a conspicuous electrically illuminated sign showing an appropriate text message or pictogram, in the immediate proximity of the relevant emergency exit.

(3) The alerts described in paragraph (2), are triggered without delay if the deployable item is moved away from the safe position during any of the taxiing, take-off, approach, and landing flight phases, or, if upon entering these phases, the item is not stowed in the safe position. When preparing for landing, the alerts are triggered at a point that allows ample time for a cabin occupant to re-stow the deployable item before landing. It should be considered that the cabin occupant needs to move within the cabin to reach the deployable item, therefore, the alerts should be triggered during descent, allowing enough time prior to entering the approach phase, unless the aeroplane is required to

have at least one cabin crew member on board; The aural and visual alerts should both remain on until the obstacle is properly stowed.

(4) The visual indication provided to the flight crew, described in paragraph (1), is triggered without delay if the deployable item is moved away from the safe position during any of the taxiing, take-off, approach, and landing flight phases, or, if upon entering these phases, the deployable item is not stowed in the safe position. When preparing for landing, the visual indication is triggered during the descent phase, early enough to enable the crew to take appropriate action before entering the approach phase.

(5) The failure to alert in the cabin or cockpit that an item is not properly stowed is demonstrated to have an average probability per flight hour of the order of 1 x 10-3 or less.

(6) Instructions are given to the passengers and cabin crew (if any), by means of appropriate placards and a pre-flight briefing, that the obstacle should be stowed before entering any of the taxiing, take-off, approach, and landing phases. The pre-flight briefing (which could be part of a regular briefing) should describe the position monitoring and alerting system, as well as the necessary response by the passengers. The requirement for this briefing should be part of the AFM.

(7) A description of the position monitoring and alerting system is made available to the flight crew. The AFM should also include the appropriate normal procedure ensuring that the cabin is ready (i.e. a check that no visual indication, as defined in paragraph (4), being present) prior to landing, and an instruction that the crew takes all necessary actions when the visual indication, as defined in paragraph (4), is triggered.

(8) The emergency exit provided when the obstruction in its most adverse position(s) is at least as effective as a Type IV emergency exit, unless it can be shown that following any single failure an exit at least as effective as a Type IV emergency exit can be obtained by simple and obvious means. If the obstructing item is a seat, the normal seat operating controls (e.g. track, swivel, recline etc.) may be considered as means meeting the simple and obvious requirement, provided that the controls remain visible to a person approaching the seat and are easily useable without sitting on the seat, when the seat is in any possible obstructing condition. If movement of the obstructing item to meet the above requires electrical power, it should be substantiated that the required power source(s) will remain available following an emergency landing.

[Amdt 25/19]

AMC to Appendix S, S25.20(b)(2) Comparative assessment of evacuation capability

ED Decision 2020/024/R

Use of the Latin square method as detailed in Appendix 4 to FAA Advisory Circular (AC) 25-17A Change 1 *Transport Airplane Cabin Interiors Crashworthiness Handbook*, dated 24.5.2016 is accepted by EASA as providing acceptable means of compliance with S25.20(b)(2).

[Amdt 25/19]
[Amdt 25/26]

S25.30 Circulation Inside Cabin During Flight

ED Decision 2017/015/R

(a) Width of Aisle: for low-occupancy aeroplanes that have a passenger seating configuration of 19 or less, and for non-commercially operated aeroplanes, the design must be such that the dimensional requirements of CS 25.815 can be achieved during all flight phases, except that the width of aisle may be reduced to 0 m during in-flight operations provided that compliance with the following additional requirements is shown (See AMC to Appendix S, S25.30(a)):

(1) all areas of the cabin must be easily accessible by passengers or crew in the event of an emergency situation (e.g. in-flight fire, depressurisation);

(2) placard instructions for restoring the aisle to the taxiing, take-off, and landing configuration must be provided at the locations where the width of the cabin aisle is reduced; and

(3) procedures must be established and documented in the AFM for restoring the aisle width for taxiing, take-off, and landing.

(b) Firm Handholds: in lieu of the requirements of CS 25.785(j), if the seat backs do not provide a firm handhold, there must be an acceptable means to enable persons to steady themselves while using the aisles in moderately rough air (See AMC to Appendix S, S25.30(b)).

[Amdt 25/19]

AMC to Appendix S, S25.30(a) Width of Aisle

ED Decision 2017/015/R

For compliance with the 'Width of Aisle' requirement, the following applies:

(1) An obstacle in the passageway is considered easily surmountable if the aisle width reduction it creates may be negotiated by a person anywhere in the size range from 5th percentile female to a 95th percentile male.

(2) Negotiating of an obstacle may require the removal and/or movement of more than one item.

(3) If an obstacle is stepped on, it should be capable of withstanding without failure a vertical step force of 222 daN (500 lbs) applied at the most adverse stepping location, without failure to the extent that it could unsteady a person trying to surmount that obstacle.

(4) When assessing compliance, the applicant should select the most adverse in-flight configuration(s). The selection should include all possibilities regardless of subjective issues, such as the likelihood that passengers may consider the configuration advantageous. If however, an applicant feels that one or more configurations, although possible, would only result from severely anomalous behaviour by cabin occupants, it/they may be justified for elimination from the assessment. The configuration(s) should be highlighted and their elimination justified in the assessment report, for Agency agreement. The possibility of entrapment (e.g. feet, hands etc.) during negotiating of the obstacle should be included in the assessment and selection of adverse in-flight configurations. Maintaining gaps of less than 3.5 cm (1.38 in.) is considered acceptable to eliminate the risk of entrapment. Items such as drawers or stowage doors do not need to be considered opened in the aisle. Each interior door may be considered open unless another position of the door might interact with the movement of an obstacle out of the