CS 25.785 Seats, berths, safety belts and harnesses

ED Decision 2017/015/R

(See AMC 25.785)

(a) A seat (or berth for a non-ambulant person) must be provided for each occupant who has reached his or her second birthday.

(b) Each seat, berth, safety belt, harness, and adjacent part of the aeroplane at each station designated as occupiable during take-off and landing must be designed so that a person making proper use of these facilities will not suffer serious injury in an emergency landing as a result of the inertia forces specified in CS 25.561 and CS 25.562. However, berths intended only for the carriage of medical patients (e.g. stretchers) need not comply with the requirements of CS 25.562.

(c) Each seat or berth must be approved.

(d) Each occupant of a seat that makes more than an 18-degree angle with the vertical plane containing the aeroplane centre line must be protected from head injury by a safety belt and an energy absorbing rest that will support the arms, shoulders, head and spine, or by a safety belt and shoulder harness that will prevent the head from contacting any injurious object. Each occupant of any other seat must be protected from head injury by a safety belt and, as appropriate to the type, location, and angle of facing of each seat, by one or more of the following:

(1) A shoulder harness that will prevent the head from contacting any injurious object.

(2) The elimination of any injurious object within striking radius of the head.

(3) An energy absorbing rest that will support the arms, shoulders, head and spine.

(e) Each berth must be designed so that the forward part has a padded end board, canvas diaphragm, or equivalent means, that can withstand the static load reaction of the occupant when subjected to the forward inertia force specified in CS 25.561. Berths must be free from corners and protuberances likely to cause injury to a person occupying the berth during emergency conditions.

(f) Each seat or berth, and its supporting structure, and each safety belt or harness and its anchorage must be designed for an occupant weight of 77 kg (170 pounds), considering the maximum load factors, inertia forces, and reactions among the occupant, seat, safety belt, and harness for each relevant flight and ground load condition (including the emergency landing conditions prescribed in CS 25.561). In addition –

(1) The structural analysis and testing of the seats, berths, and their supporting structures may be determined by assuming that the critical load in the forward, sideward, downward, upward, and rearward directions (as determined from the

prescribed flight, ground, and emergency landing conditions) acts separately or using selected combinations of loads if the required strength in each specified direction is substantiated. The forward load factor need not be applied to safety belts for berths.

(2) Each pilot seat must be designed for the reactions resulting from the application of the pilot forces prescribed in CS 25.395.

(3) For the determination of the strength of the local attachments of –

(i) Each seat to the structure; and

(ii) Each belt or harness to the seat or structure; a multiplication factor of 1·33 instead of the fitting factor as defined in CS 25.625 should be used for the inertia forces specified in CS 25.561. (For the lateral forces according to CS 25.561(b)(3) 1·33 times 3·0 g should be used.)

(g) Each crewmember seat at a flight-deck station must have a shoulder harness. These seats must meet the strength requirements of sub-paragraph (f) of this paragraph, except that where a seat forms part of the load path, the safety belt or shoulder harness attachments need only be proved to be not less strong than the actual strength of the seat. (See AMC 25.785(g).)

(h) Each seat located in the passenger compartment and designated for use during take-off and landing by a cabin crewmember required by the Operating Rules must be:

(1) Near a required floor level emergency exit, except that another location is acceptable if the emergency egress of passengers would be enhanced with that location. A cabin crewmember seat must be located adjacent to each Type A or B emergency exit. Other cabin crewmember seats must be evenly distributed among the required floor level emergency exits to the extent feasible.

(2) To the extent possible, without compromising proximity to a required floor level emergency exit, located to provide a direct view of the cabin area for which the cabin crewmember is responsible. (See AMC 25.785(h)(2))

(3) Positioned so that the seat will not interfere with the use of a passageway or exit when the seat is not in use.

(4) Located to minimise the probability that occupants would suffer injury by being struck by items dislodged from service areas, stowage compartments, or service equipment.

(5) Either forward or rearward facing with an energy absorbing rest that is designed to support the arms, shoulders, head and spine.

(6) Equipped with a restraint system consisting of a combined safety belt and shoulder harness unit with a single point release. There must be means to secure each restraint system when not in use to prevent interference with rapid egress in an emergency.

(i) Each safety belt must be equipped with a metal-to-metal latching device.

(j) If the seat backs do not provide a firm handhold, there must be a handgrip or rail along each aisle to enable persons to steady themselves while using the aisles in moderately rough air.

(k) Each projecting object that would injure persons seated or moving about the aeroplane in normal flight must be padded.

(l) Each forward observer's seat required by the operating rules must be shown to be suitable for use in conducting the necessary en-route inspections.

[Amdt 25/11]

[Amdt 25/12]

[Amdt 25/13]

[Amdt 25/17]

[Amdt 25/19]

AMC 25.785 Seats, Berths, Safety Belts and Harnesses

ED Decision 2020/024/R

FAA Advisory Circular (AC) 25.785-1B, *Flight Attendant Seat and Torso Restraint System Installations*, dated 11.5.2010, and the relevant parts of FAA AC 25-17A Change 1, *Transport Airplane Cabin Interiors Crashworthiness Handbook*, dated 24.5.2016, are accepted by the Agency as providing an acceptable means of compliance with CS 25.785.

Note: 'The relevant parts' means 'the parts of AC 25-17A Change 1 that address the applicable FAR/CS-25 paragraph'.

Beds, berths, or divans convertible into a bed should be equipped with a restraint device (e.g. a belt) for use by the occupant(s) when sleeping. Beds, berths, etc. that may be occupied by more than one occupant may be equipped with a single belt.

[Amdt 25/17]

[Amdt 25/19]

[Amdt 25/26]

AMC 25.785(g) Seats, berths, safety belts and harnesses

ED Decision 2003/2/RM

Where there is a risk that a safety belt or harness might, when not in use, foul the controls or impede the crew, suitable stowage should be provided, unless it can be shown that the risk can be avoided by the application of suitable crew drills.