

(4) The open door during flight would not create aerodynamic interference that could preclude safe flight and landing.

(5) The airplane would meet the structural design requirements with the door open. This assessment must include the aeroelastic stability requirements of § 25.629, as well as the strength requirements of subpart C of this part.

(6) The unlatching or opening of the door must not preclude safe flight and landing as a result of interaction with other systems or structures.

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§ 25.785 Seats, berths, safety belts, and harnesses.

(a) A seat (or berth for a nonambulant 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 airplane at each station designated as occupiable during takeoff 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 §§ 25.561 and 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 airplane centerline 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 § 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 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 § 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 § 25.395.

(3) The inertia forces specified in § 25.561 must be multiplied by a factor of 1.33 (instead of the fitting factor prescribed in § 25.625) in determining the strength of the attachment of each seat to the structure and each belt or harness to the seat or structure.

(g) Each seat at a flight deck station must have a restraint system consisting of a combined safety belt and shoulder harness with a single-point release that permits the flight deck occupant, when seated with the restraint system fastened, to perform all of the occupant's necessary flight deck functions. There must be a means to secure each combined restraint system when not in use to prevent interference with the operation of the airplane and with rapid egress in an emergency.