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AC 25.785-1

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ADVISORY CIRCULAR



DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
Washington, D.C.

FAR GUIDANCE MATERIAL

Subject: FLIGHT ATTENDANT SEAT REQUIREMENTS

1. PURPOSE. This advisory circular (AC) provides information and guidance regarding acceptable means of compliance with §§ 25.785 and 121.311 of the Federal Aviation Regulations (FAR) and explains the approach to be used by the FAA in establishing design criteria for flight attendant seats and galley equipment.

2. RELATED FEDERAL AVIATION REGULATIONS AND STANDARDS.

- a. Section 25.785, Seats, berths, safety belts, and harnesses.
- b. Section 121.311, Seats, safety belts, and shoulder harnesses.
- c. Technical Standard Order (TSO) C39, Aircraft seats and berths.

3. BACKGROUND.

a. On January 29, 1980, the FAA issued Amendments 25-51 and 121-155 (45 FR 7750; February 4, 1980). These amendments were the portion of Airworthiness Review Program Amendment 8 which dealt with cabin safety and flight attendant proposals from Notice 75-10 (40 FR 10802; March 7, 1975) and Notice 75-31 (40 FR 29410; July 11, 1975).

b. Amendment 25-51 revised § 25.785(g) and added a new § 25.785(k) dealing with forward observer and flight deck station seats, and revised § 25.785(h) and added a new § 25.785(j) dealing with flight attendant seats.

c. Amendment 121-155 revised § 121.311(e) and added new §§ 121.311(f), (g), (h), (i), and (j). Amendment 121-170 (46 FR 15480; March 15, 1981) extended the compliance date for §§ 121.311(e), (f), (g), and (h) to March 6,

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1982, and deleted § 121.311(j). Of significance to this issue is the fact that after March 6, 1982, § 121.311(f) retroactively applies the requirements of § 25.785 to Part 121 operators.

4. FAA POLICY ON FLIGHT ATTENDANT SEATS.

a. In addition to the guidance contained in this AC, the FAA plans to develop dimensional and energy absorption criteria for flight attendant seats in close coordination with airplane manufacturers, airplane operators, and flight attendants. A proposed revision of TSO-C39 to incorporate these criteria will be published in the Federal Register for public comment. Should the FAA deem it appropriate to require a cutoff date for manufacture of flight attendant seats to the present TSO, it will propose such a date in the revision to TSO-C39.

b. Until specific flight attendant seat dimensional and energy absorption criteria can be developed, the FAA recommends that flight attendant seat backs on new airplanes type certificated after December 31, 1981, be at least 15.5 inches wide for single seats and 31.0 inches wide for double seats, and that 36.5 inches of vertical energy absorbing support be provided for the arms, head, shoulders and spine. Unpadded bulkheads do not provide adequate energy absorbing support for arms, shoulders, head, and spine as required under § 25.785(h)(2)(i).

c. Upon completion of the revision to TSO-C39 and any associated amendments to Part 25, this AC will be revised to reflect their content.

5. DISCUSSION OF TERMS USED IN §§ 25.785 AND 121.311.

a. Near. As used in § 25.785(h), "near" means sufficiently close to the exit to permit flight attendants to reach required floor level emergency exits in a timely manner to execute their emergency evacuation duties. A longitudinal distance measured fore or aft from each seat to its associated exit equal to not more than three rows of seats is acceptable. When approved flight attendant seats are installed at more than one location within a three-row longitudinal distance from a required floor level emergency exit, and the operating rules require the location of a flight attendant(s) in the vicinity of that exit, the required flight attendant(s) should first be located in the seat(s) closest to that exit, unless the design of the seat(s) furthest from the exit has increased occupant protection features over the seat(s) closest to the exit.

b. Extent Possible. As used in § 25.785(h)(1), with respect to "direct view" of the cabin area for which the flight attendant is individually responsible, "extent possible" means to the degree practicable without compromising proximity to required floor level emergency exits. In the current fleet, the intent is not to require changes to existing approved designs to increase direct view only; however, during any cabin alterations to existing airplanes in the current fleet, every practical effort should be made to eliminate obstructions to direct view.

c. Shoulder Harness. This should be a double strap design, with one strap over each shoulder.

d. Direct View. As used in § 25.785(h)(1), "direct view" means direct (line of sight) visual contact which enables the flight attendant to be made aware of passenger needs for his/her services, when the flight attendant is seated with safety belt and shoulder harness fastened. Mirrors or other devices are not acceptable equivalents to direct view, except in those cases where the floor level emergency exit proximity takes precedence over direct view.

e. Means to Secure. As used in § 25.785(h), this term requires that methods be provided to stow the shoulder harness and safety belt when not in use. Such methods include an automatic retractor, a pocket near the seat, and a design which permits the straps to be held out of the way by a folding seat. In any case, the safety belt and harness, when released quickly, should not impede rapid egress during an emergency.

f. Required Floor Level Emergency Exits. As used in § 25.785(h)(1), this term refers to the type and location of exits which were used to establish approved seating configurations for type certification of an airplane.

6. ADEQUACY OF EXISTING FLIGHT ATTENDANT SEATS.

a. Existing flight attendant seats in service are considered to comply with § 25.785(h)(2)(i) with respect to width and energy absorption characteristics of the rest to support arms, shoulders, head, and spine.

b. Design changes to interiors of an inservice airplane or newly manufactured airplane of an existing model should not result in flight attendant seats narrower than the seats presently approved as part of the airplane type design.

c. With regard to aft facing seat back heights, TSO-C39 specifies that the seat back be sufficient to provide 36.5 inches of support for the occupant, as measured from the point of maximum seat cushion depression to the top of the seat back. Section 25.785(h)(2)(i) requires that forward and aft facing seats be designed to provide the same occupant support. Thus, all flight attendant seats providing at least 36.5 inches of vertical energy absorbing support for the occupant will meet § 121.311(f) after March 6, 1982. This support need not be continuous and either a single seat back or a segmented seat back plus headrest complies with the requirement. Unpadded bulkheads do not provide adequate energy absorbing support for arms, shoulders, head and spine as required under § 25.785(h)(2)(i).

d. After March 6, 1982, in accordance with § 121.311(f), each seat occupied by a flight attendant required by § 121.391(a) must have a combined safety belt and double strap shoulder harness with a single point release that meets the requirements of § 25.785, except that any combined safety belt and shoulder harness approved and installed before March 6, 1980, may continue to be used.

e. As specified in § 121.311(f)(2), the combined safety belt and shoulder harness restraint system with a single point release may be designed to the crash inertia loads established by the certification basis of the airplane. This means that for airplanes whose type certification basis includes Civil Air Regulations (CAR) 4b in effect prior to March 5, 1952, a forward crash load factor as low as 6g's may be used. Safety belt and shoulder harness installations on airplanes whose type certification basis includes CAR Part 04 or Aeronautics Bulletin No. 7A should be designed to a forward crash load factor of no less than 6g's. Load factors in all other directions should be as specified in § 25.561, which contains load factors identical to those of CAR 4b.260.

f. After March 6, 1982, passenger seats occupied by flight attendants required by § 121.391(a) must fully comply with § 25.785(h), as outlined in this AC. Passenger seats occupied by flight attendants in excess of the number required by § 121.391(a) need not comply with § 25.785(h).

7. GALLEY RESTRAINT REQUIREMENTS.

a. Section 25.785(j) requires that each flight attendant seat must be located to minimize the probability of its occupant suffering injury by being struck by items dislodged from a galley, stowage compartment, or serving cart. Service experience with galleys, stowage compartments, and serving carts has shown that some of the presently designed latches or locks, of themselves, do not adequately minimize the probability of items being dislodged under operational and emergency load conditions.

b. Flight attendant seats that are located within a longitudinal distance equal to three rows of seats measured fore or aft from the center of a galley or stowage compartment area, with the exception of underseat and overhead stowage bins, are not in compliance with § 25.785(j) unless additional restraint devices (dual latching devices or equivalent) are incorporated to retain all items of mass in the galley or stowage compartment under the crash inertia loads specified as part of the airplane type certification basis.

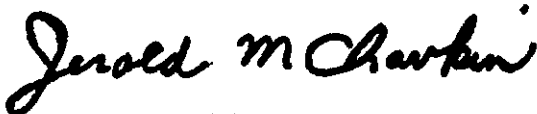
c. Doors on galleys, stowage compartments, or serving carts located near flight attendant seats as defined in paragraph 7.b should incorporate additional restraint devices that are demonstrated to be reliable and that secure in a positive manner. If the primary latching devices fail, the additional restraint devices should be designed to retain all items of mass under the crash inertia loads specified as part of the airplane type certification basis.

d. Nets, straps, bars, thumb latches on individual doors, and doors completely closing off galleys or stowage compartments are examples of acceptable additional restraint devices, provided they are demonstrated to be reliable and are designed for easy verification of engagement. A thumb latch having a colored stripe on a door at the latch locked position is an example of

a design which will enable the flight attendant to determine quickly when the door is properly secured. As used herein, a thumb latch is a bar, not completely traversing a door, mounted externally to structure between a galley or stowage compartment door, which can be rotated over the galley or compartment door and locked in place, usually by spring loading the latch, to retain the door or items of mass.

e. Each air carrier should assure that its FAA approved maintenance/inspection program includes adequate procedures and standards for maintaining galleys and service units with special emphasis placed on restraint devices.

f. Where a serving cart is secured during takeoff and landing outside of a galley or within a compartment in a galley, without additional doors closing off the cart, the criteria in paragraphs 7.c through e applicable to doors are also applicable to the serving cart itself, if the location is near a flight attendant seat as defined in paragraph 7.b.



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