

Exemption No. 8269

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056**

In the matter of the petition of

The Boeing Company

Regulatory Docket No. FAA-2004-16974

for exemption from § 25.562(b)(2) of Title 14, Code
of Federal Regulations

GRANT OF EXEMPTION

By letter B-H320-2003-00768, dated December 15, 2003, Mr. Edgars A. Kupcis, Manager, Certification, Certification Programs, 66-ZB-H320, The Boeing Company, P.O. Box 3707, Seattle, Washington 98124-2207, petitioned for exemption from § 25.562(b)(2), Title 14, Code of Federal Regulations (14 CFR), as amended by Amendment 25-64. The proposed exemption, if granted, would permit relief from the floor warpage testing requirement for flightdeck seats on the Boeing Model 767-200C airplanes.

The petitioner requests relief from the following regulations:

Section 25.562(b)(2), Amendment 25-64, requires the floor tracks used to attach the seat to the floor be misaligned with respect to the adjacent seat tracks by at least 10 degrees vertically (i.e., out of parallel) with one rolled 10 degrees. The misalignment is used during the forward loading dynamic test condition and applies to both crew and passenger seats.

The petitioner supports its request with the following information:

“Request that the 767-400ER FAA Exemption Number 6935 be made applicable for the Boeing Model 767-200C airplane.

“References:

- (a) Regulatory Docket No. 26649, FAA Exemption No. 5436, April 1, 1992, Boeing 777-200 Floor Warpage for Flight Deck Seats, Exemption from FAR 25.562(b)(2).
- (b) Regulatory Docket No. 28452, FAA Exemption No. 6425, April 12, 1996, Boeing 737-600/-700/-800 Floor Warpage for Flight Deck Seats, Exemption from FAR 25.562(b)(2).
- (c) Regulatory Docket No. 28744, FAA Exemption No. 6600, April 8, 1997, Boeing 757-300 Floor Warpage for Flight Deck Seats, Exemption from FAR 25.562(b)(2).

- (d) Regulatory Docket No. 29451, FAA Exemption No. 6935, August 4, 1999, Boeing 767-400ER Floor Warpage for Flight Deck Seats, Exemption from FAR 25.562(b)(2).
- (e) Regulatory Docket No. 28452, FAA Exemption No. 6425A, August 20, 1999, Boeing 737-700C/-900 Floor Warpage for Flight Deck Seats, Exemption from FAR 25.562(b)(2).
- (f) Regulatory Docket No. 26649, FAA Exemption No. 5436B, November 15, 2000, Boeing 777 Series Airplanes, Floor Warpage for Flight Deck Seats, Exemption from FAR 25.562(b)(2).

“The Boeing Company requests that the reference (d) 767-400ER FAA Exemption Number 6935 from the Floor Pitch and Roll Requirement of FAR 25.562(b)(2) (Amendment 25-64) for Flight deck Seats also be made applicable for the Boeing Model 767-200C airplane.

“Justification

“The 767-200C is the next Boeing aircraft that will comply with the requirements of FAR 25.562, as agreed to in the G-1 Issue Paper. Accordingly, there are provisions for FAR 25.562 which previous Boeing models (references (a)-(f)) were not required to meet, specifically the floor warpage testing requirements.

“The precedent has been set for the approval of this exemption based on the following justification: FAR 25.562(b)(2) states that, “. . .Where rails or floor fittings are used to attach the seating devices to the test fixture, the rails or fittings must be misaligned with respect to the adjacent set of rails or fittings by at least 10 degrees vertically (i.e. out of parallel) with one rolled 10 degrees.” The preamble to Amendment 25-64 states that, “Crash investigations have shown that localized cabin floor deformation can occur in survivable crashes. This has been confirmed by the controlled impact demonstration and drop tests involving transport category airplanes. The inability of some seats to accommodate such deformations, remain in place, and restrain the occupants can contribute significantly to degree of injury during a crash. The simulated floor deformation used in the dynamic tests will demonstrate the tolerance of the seat and its attachments to deformations that could occur in an actual crash.” The preamble also states the benefit of this amendment is believed to be that, “. . .some lives are expected to be saved that otherwise may not have been.

“This test requirement makes no distinction between passenger and crew seats, while the evidence mentioned in the preamble is believed to be based on passenger seats only. There is evidence to suggest that floor warpage has not been a significant factor in flight deck seat during survivable crash conditions.

“The FAA acknowledged in the preamble to Amendment 25-64 the likelihood of seats designed to meet this amendment costing more to manufacture and therefore to purchase, as well as increasing the airplane operating cost due to weight increase. In order to justify the increase costs, it must be expected that some lives will be saved that otherwise may not have been. This does not appear to be the case for flight deck seats. These increased costs create an economic disadvantage for the 767-200C without a commensurate expectation of savings lives that otherwise may not have been lost.

“Granting of the applicability of the 767-400ER exemption to 767-200C

“1. will not adversely affect flight safety, and

“2. will improve the efficiency of the 767-200C

“Based on the justification and the precedent set on the reference (a)-(f) models, Boeing requests that the current Boeing Model 767-400ER exemption, Regulatory Docket No. 29451, FAA Exemption No. 6935, August 4, 1999, Boeing 767-400ER Floor Warpage for Flight Deck Seats, Exemption from FAR 25.562(b)(2) also be made applicable to the Boeing Model 767-200C airplane.”

The FAA has determined that good cause exists for waiving the requirement for Federal Register publication and comment because the exemption, if granted, would not set a precedent and any delay in acting on this petition would be detrimental to The Boeing Company.

The FAA's analysis/summary is as follows:

The petitioner requested Exemption No. 6935 be amended to include the Boeing Model 767-200C airplanes. The Boeing Model 767-200C airplanes include several different mission dependent interior configurations. The airplane can be configured as a passenger airplane, a combi (cargo and passengers on the main deck), freighter, and tanker airplane. In the freighter configuration supernumeraries can occupy the first and second observer seats on the proposed Boeing Model 767-200C airplanes. These supernumeraries are considered to be passengers for part 25 compliance findings. The limitations contained in Exemption No. 6935 could be confusing (i.e., are the occupants of the observer seat passengers or crew) if the exemption was amended to include the Boeing Model 767-200C airplanes. Therefore, the FAA has determined that a new exemption with reworded limitations should be considered.

The petitioner's request for relief from the requirement to misalign the seat tracks is limited to the Boeing Model 767-200C flightdeck seats. These seats are individually mounted single seats with both vertical and horizontal adjustments to accommodate the differences in the size of crewmembers. Crew seats are required to be fairly rigid in order to withstand the pilot reaction forces from the flight controls. While it is conceivable that too much flexibility in the seat mounting structure could interfere with the safe operation of the airplane, some flexibility in the seat attachment is considered necessary to conform to likely floor distortions during crash conditions.

The FAA has reviewed the arguments presented by the petitioner in support of the exemption and concludes that the service history of flightdeck seats on larger airplanes supports the petitioner's request. Although some cockpit floor distortions have been observed after accidents, there has not been a problem with flightdeck seat separations due to floor buckling on narrow body and larger airplanes, which have a minimum of 40 inches of frangible structure between the flightdeck floor and the lower fuselage contour. The FAA now considers that requiring testing of pilot seats with floor warpage cannot be justified on narrow body and larger airplanes. The FAA is currently developing a proposal to amend the regulations accordingly.

In consideration of the foregoing, I find that a grant of exemption is in the public interest, and will not adversely affect safety. Therefore, pursuant to the authority contained in 49 U.S.C. §§ 40113 and 44701, delegated to me by the Administrator (14 CFR § 11.53), The Boeing Company is hereby granted an exemption from the floor warpage testing requirements of 14 CFR § 25.562(b)(2), Amendment 25-64 to the extent required to permit type certification of the Boeing Model 767-200C for seats mounted in the flightdeck. The following limitations apply to this exemption:

1. This exemption is limited to the Boeing Model 767-200C airplanes and applies only to the seats in the flightdeck. The seats aft of the flightdeck are not exempted.

2. The flightdeck seats are exempted from compliance with the 10 degrees of track misalignment required under § 25.562(b)(2). Compliance with all other requirements of § 25.562 is required.

Issued in Renton, Washington, on March 12, 2004

/s/

Ali Bahrami
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service, ANM-100