

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98057-3356

In the matter of the petition of

Airbus

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

Regulatory Docket No. FAA-2009-1053

GRANT OF EXEMPTION

By letter LR2510M09015452 , dated April 2, 2009, Mssrs. Jean Francois Petit, Certification Manager, and Jean-Claude NANCHE, A350 Chief Airworthiness Engineer, Airbus, 1 Rond-Point Maurice Bellonte 31707 Blagnac Cedex, France, 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 flight deck seats on Airbus Model A350 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 all seats occupiable for takeoff and landing.

The petitioner supports its request with the following information:

This information is quoted from Airbus' petition, with minor edits for clarity.

Airbus seeks exemption from the requirement to demonstrate compliance by testing the flight deck seats. The reason Airbus seeks this relief is that FAA has determined that such testing is unnecessary. Since 1992 FAA has taken the

position (see, e.g. Docket 26649, Exemption Grant 5436 dated April 1, 1992) that ‘there has not been a problem with flight deck seat separations due to floor buckling on narrow body and larger airplanes which have a minimum of 40 inches of frangible structure between the flight deck 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.’

Since that position was first taken, FAA has granted numerous exemptions from the floor warpage testing requirements for flight deck seats to both U.S. and non-U.S. applicants. Airbus seeks the same relief that has been granted to other similarly situated applicants. (See, e.g., exemptions 6425, 6425A, 6600, 6819, 6887, and 6935, all granted to applicants seeking the same relief under similar circumstances.)

Airbus submits that granting this exemption is in the public interest because such action will:

1. Not adversely affect flight safety, as the FAA itself has stated;
2. Improve the efficiency of the Airbus A350;
3. Tend to reduce air transportation and air cargo fares for all users; and
4. Reduce the cost of the aircraft to U.S. operators.

FAA has analyzed past requests from numerous petitioners as noted above. These requests were similar in all material respects to the request of Airbus. Simply put, using FAA words (see Exemption 6887), ‘Subsequent to the adoption of this requirement by Amendment 25-64, it was determined that, although some cockpit floor distortions have occurred during accidents, there has not been a problem with flight deck seat separations due to floor buckling on ‘narrow body’ and larger airplanes having at least 40 inches of frangible structure between the flight deck floor and the extended lower fuselage contour [as does the A350]. Consequently, the FAA has concluded that requiring the testing of flight deck seats under conditions of floor warpage cannot be justified on airplanes of this minimum size.’

Although the A350 fuselage will be largely made of CFRP [carbon fiber reinforced plastic], the nose section and more especially the structure below the cockpit floor is mainly made of aluminum alloy like on traditional metallic fuselages. More specifically, circumferential frames, skin, nose landing gear bay box structure, and vertical rods are constructed of aluminum alloy material. The figure below shows the 40 inch reference of the frangible structure between the flight deck floor and the extended lower fuselage contour. Although a minor portion of the skin within the 40 inch zone below the observer seats are made of CFRP, this is non relevant compared to the aluminum nose landing gear bay structure and vertical rods.

Federal Register publication

The FAA determined that good cause existed for waiving the requirement for Federal Register publication. This action will not set a precedent, and we did not receive any comments on previous similar actions that were published in the Federal Register.

The FAA's analysis

The petitioner requests exemption from the requirement in § 25.562(b)(2) to conduct dynamic testing with the seat tracks misaligned. This request is limited to seats on the flight deck.

The petitioner notes that the FAA has previously granted numerous exemptions from this requirement. While such exemptions must be reviewed for precedent, the fact that other exemptions *have* been granted does not ensure that further exemptions *will* be granted. The conditions and rationale must be established in each case, in order to justify relief from a requirement.

The petitioner's request for relief from the requirement to misalign the seat tracks is limited to the Airbus Model A350 flight deck seats. These seats are individually mounted single seats with both floor and wall mounting, to accommodate both flightcrew and observers. Crew seats are required to be fairly rigid in order to withstand the pilot reaction forces from the flight controls. Wall mounted seats are generally not subject to floor misalignment requirements, no matter where installed, since they do not mount directly to the floor.

The FAA has reviewed the arguments presented by the petitioner and concluded that the service history of flight deck seats on larger airplanes supports the petitioner's request and it is in the interest of the public for the reasons given by the petitioner. The A350 is largely constructed from composite materials; however, the flight deck area is an exception. Thus, although the crashworthiness assessment of the A350 in total has not been completed, the behavior of the flight deck should be consistent with other airplanes of similar size. Although some flight deck floor distortions have been observed after accidents, there has not been a problem with flight deck seat separations due to floor buckling on narrow body and larger airplanes that have a minimum of 40 inches of frangible structure between the flight deck floor and the lower fuselage contour. As noted in the other exemptions referenced by the petitioner, the FAA is considering rulemaking to change the regulation relative to seats on the flight deck. However, because there are other safety initiatives that are more urgent, there is no schedule for this action at present.

The FAA's decision

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, Airbus is hereby granted an exemption from the floor warpage testing requirements of § 25.562(b)(2), Amendment 25-64, to the extent required to permit type certification of the Airbus Model A350 for seats mounted in the flight deck. The following limitations apply to this exemption:

1. This exemption is limited to the Airbus Model A350 series airplanes and applies only to the seats in the flight deck. The seats aft of the flight deck are not exempted.
2. The flight deck 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 January 22, 2010.

Signed by Ali Bahrami

Ali Bahrami
Manager, Transport Airplane Directorate
Aircraft Certification Service