

Exemption No. 9700

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

In the matter of the petition of

Jet Aviation Engineering Services L.P.

for an exemption from § 25.813(e) of Title 14,
Code of Federal Regulations

Regulatory Docket No. FAA-2008-0020

GRANT OF EXEMPTION

By letter dated January 4, 2008, Mr. Mark W. Creager, Director of Certification, Jet Aviation Engineering Services L.P., 116 Kestrel Drive, Spring Branch, Texas 78070, petitioned for exemption from the requirements of § 25.813(e) of Title 14, Code of Federal Regulations (14 CFR). The petitioner has requested the exemption in order to permit installation of interior doors between passenger compartments on a Boeing Model 747-400 airplane, serial number 28343, which would be designated as private use, not-for-hire, not-for-common-carriage.

The petitioner requests relief from the following regulation:

Section 25.813(e), which prohibits installation of doors between passenger compartments.

The petitioner's supporting information is summarized below:¹

The 14 CFR part 25 regulations govern design certification of transport category airplanes. Their primary intent is to protect the traveling public. There is a requirement in the public interest and in the interest of safety to provide regulatory guidelines for certification. But it is clear these regulations are intended to regulate certification of “commercial” airplanes,

¹ The complete petition submitted by Jet Aviation Engineering Services L.P. is available in the Federal Docket Management System on the Internet at <http://regulations.gov>. The docket number is FAA-2008-0020.

which are “for hire” to the general public. A few of these regulations are not appropriate for private use, head-of-state airplanes. These airplanes are operated under 14 CFR parts 91 and/or 125 as private use, not-for-hire, not-for-common-carriage. The FAA recognizes these differences, as evidenced by the issuance of many exemptions for private use airplanes.

Jet Aviation Engineering Services is currently working on a head-of-state interior installation for this airplane. The seating configuration has 137 takeoff and landing passenger seats and 15 cabin crew seats. It has only three pairs of Type A exits active on the main deck of the airplane (exit doors 1, 4, and 5 are active). This exit configuration has a maximum passenger seat capacity of 330.

There are 6 pocket sliding doors installed between passenger compartments. The doors are installed in the Forward Lounge (FS 365), Majlis (FS 580), the Dining/Conference Room (FS 1080 and 1360), and in the aft Service Hallway (FS 1515). The doors have dual latches and flight deck annunciation, and they are designed to be frangible in the event that they become stuck in the closed position. Each of the two latches of each door is capable of restraining the door in the open position under § 25.561 loading conditions.

Public Interest

Jet Aviation states that granting its petition would be in the public interest because:

- It would result in no degradation of safety and therefore no detrimental impact to the public.
- It would enable U.S. manufacturers greater flexibility to compete in the expanding market for executive configurations of transport airplanes.
- Additional sales of such executive configured transport airplanes, outside the traditional airline market, will increase profitability of airplane manufacturers and give greater job stability to their workers.
- Greater stability of the workforce will help stabilize the U.S. economy.
- Stability and increased performance of U.S. airframe manufacturers will result in increased orders and stability in supporting manufacturing organizations.
- Increased sales of executive configured transport airplanes will result in some portion of those aircraft being completed at U.S.-owned or -operated aircraft completion facilities.
- Improved performance of U.S.-owned or -operated corporations will result in continued and improved tax revenues.
- Improved sales allow U.S. companies to continue to invest in research and development, thus allowing the U.S. to maintain or improve its competitive position in the world economy.
- Many of these sales can be predicted to be to overseas clients, thus improving the U.S. balance of trade.

Waiver of Notice and Public Procedure

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 Jet Aviation Engineering Services L.P.

The FAA's analysis/summary is as follows:

As more and more transport category airplanes have been configured (or re-configured) for private use, the FAA has given considerable attention to the issue of appropriate regulation of such airplanes. Some of the current regulations governing design certification of transport category airplanes are not compatible with private use of such airplanes. Because of this, we have received a number of petitions for exemption from certain regulations. We have granted such exemptions when we find that to do so is in the public interest and does not adversely affect the level of safety provided by the regulations. We recently published a notice of proposed rulemaking, Notice No. 07-13, Special Requirements for Private Use Transport Category Airplanes (72 FR 38732, July 13, 2007), which, if promulgated, would obviate the need for case-by-case review of individual petitions for exemption for private use airplanes.

The FAA considers the petitioner's proposal to be in the public interest. The use of doors to create separate "rooms" within the passenger cabin allows sensitive and important meetings to be conducted during air travel. Such rooms allow efficient and safe carriage of executives in an environment that would not be possible otherwise. In addition, the smaller number of passengers and the familiarity of the flight and cabin crews with this airplane and its interior ensure that there is an adequate level of safety. For these reasons, there is considerable demand for this configuration of the passenger cabin for private use airplanes. The FAA acknowledges the desirability of these features from the operator's point of view.

When the regulations pertaining to interior doors were adopted, they did not necessarily consider rooms. They considered two possible types of interior doors in a passenger compartment. The first is an interior door between passenger compartments. The second is an interior door between the passenger compartment and an exit.

Until recently, only the first type of door (between passenger compartments) was prohibited (reference § 25.813(e)). However, part 25, as amended by Amendment 25-116, now also prohibits interior doors between an exit and the passenger compartment. In addition,

Amendment 121-306 prohibits these doors in airplanes operated under 14 CFR part 121 that were manufactured after November 27, 2006. Amendments 25-116 and 121-306, titled “Miscellaneous Cabin Safety Changes,” were published in the Federal Register on October 27, 2004 (69 FR 62778).

In airplanes configured for private use, there are four different categories of doors in the passenger cabins. For all four categories, the room may be occupied during takeoff and landing.

Category 1 — A door in a room that is less than the full width of the airplane. There will be an aisle on the outside of the room. Only the occupants of the room must use the door to reach an exit.

Category 2 — A door in a room less than the full width of the airplane and the same as a Category 1 door except there is a single emergency exit or pair of emergency exits within the room.

Category 3 — A door or doors in a room that is the full width of the airplane. There are passengers seated on both sides of the door(s) and the main aisle leads out of or passes through the room. The room does not have any emergency exits.

Category 4 — A door in a room the full width of the airplane and the same as a Category 3 door except there is a pair of emergency exits at one end of the room.

Because not all interior doors between passenger compartments are equivalent, the FAA has determined that the following requirements will produce an adequate level of safety:

1. In order to maintain an acceptable level of safety, doors in Categories 2, 3, or 4 installed across the main cabin aisle must open and close in a transverse direction. The direction of motion of the door must be at a right angle to the longitudinal axis of the airplane. This will tend to minimize the chance that the inertia forces of an accident could force the door closed. A “pocket door” is one example of such a design.
2. Redundant means are necessary to latch doors open for takeoff and landing. Each latching means must be capable of retaining the door in the takeoff and landing position under the inertia forces of § 25.561.

3. Each interior door must be frangible, in case it is jammed in the closed position in flight or during taxi, takeoff, or landing. Frangibility is intended to ensure that if a door is jammed closed, occupants can break it open and escape in either direction and emergency equipment can be moved. Frangibility may be demonstrated in either of the following ways:

- A 5th percentile female can break through the door, creating a large enough opening that a 95th percentile (or larger) male can pass through. (See Advisory Circular 25-17, “Transport Airplane Cabin Interiors Crashworthiness Handbook,” paragraph 43b(2)).
- A 5th percentile female can break a hinge on the door or a hinge on a smaller door within the door so that the door can swing enough to allow a 95th (or larger) percentile male to pass through the opening with the door swung open. This evaluation must be made with any cabin furnishing or equipment that could limit the swing arc of the door installed and then placed in the most adverse position. In using this approach, one must consider the possibility that the door is physically jammed in the closed position by distortion of the fuselage or furnishings. This possibility must be considered even if the door normally translates into the open and closed positions.

4. Doors which fall into Category 1 must be in the open position during taxi, takeoff, and landing only when the room is occupied.

5. Doors which fall into Categories 2, 3, or 4 must be in the open position during taxi, takeoff, and landing, regardless of occupancy.

6. The FAA has determined that a higher level of awareness is required to ensure that no door remains closed when it should not be. Because the cabin interior is relatively complex, inspection by flight attendants before takeoff and landing is not sufficient to verify that interior doors are in the proper position. Some type of remote indication is considered necessary. The petitioner’s proposal to provide remote indication to the flightcrew is considered adequate.

The petitioner, in its public interest statement, maintains that there would be no degradation of safety. While this grant of exemption cannot be said to provide the same level of safety as would be afforded by strict compliance with the regulations, the resultant level of safety is consistent with that in other private use airplanes. The level of safety that results from this exemption is specifically requested and desired by that segment

of the public that will fly on these airplanes—the owners. The FAA considers that granting the petition is in the public interest for the reasons stated by the petitioner.

After considerable deliberation, the FAA has concluded that installation of interior doors, with certain limitations, can be accepted. In order to maximize the level of safety, we will require that certain limitations, including some proposed by the petitioner, be made mandatory to permit such installations. As noted previously, there are precedents for this decision involving other private use airplanes.

The Grant of Exemption

In consideration of the foregoing, I find that a grant of exemption is in the public interest and will not adversely affect the level of safety provided by the regulations. Therefore, pursuant to the authority contained in 49 U.S.C. 40113 and 44701, delegated to me by the Administrator, I grant the petition of Jet Aviation Engineering Services L.P. for an exemption from the requirements of 14 CFR 25.813(e) to allow installation of interior doors between passenger compartments on a Boeing Model 747-400 airplane, serial number 28343. This exemption is subject to the following conditions. Provisions 1, 3, 4, and 5 must be documented as operating limitations in the Limitations section of the Airplane Flight Manual (AFM).

1. The airplane must not be operated for hire or offered for common carriage. This provision does not preclude the operator from receiving remuneration to the extent consistent with 14 CFR parts 125 and 91, subpart F, as applicable.
2. Each door between passenger compartments must be frangible.
3. Doors that fall into Category 1 must be in the open position during taxi, takeoff, and landing only when the room is occupied or when passengers must pass through the room to reach an emergency exit.
4. Doors that fall into Categories 2, 3, or 4 must be in the open position during taxi, takeoff and landing, regardless of occupancy.
5. Each door between passenger compartments must have a means to signal to the flightcrew when the door is closed. Appropriate procedures/limitations must be established to ensure that takeoff and landing is prohibited when such compartments are occupied and the door is closed.
6. Doors between passenger compartments must have dual means to retain them in the open position and each means must be capable of withstanding the inertia loads specified in § 25.561.

7. Doors in Categories 2, 3, or 4 which are installed across a longitudinal aisle must translate laterally to open and close.

Issued in Renton Washington, on May 29, 2008.

/s/Ali Bahrami
Ali Bahrami
Manager
Transport Airplane Directorate
Aircraft Certification Service