

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

In the matter of the petition of

**Associated Air Center**

For an exemption from §§ 25.785(d), and  
25.813(e) of Title 14,  
Code of Federal Regulations

**Regulatory Docket No.  
FAA-2004-18913**

**GRANT OF EXEMPTION**

By letter dated October 21, 2004, Richard McFadden, Certification Director, petitioned on behalf of Associated Air Center, 8321 Lemmon Ave., Love Field, Dallas, TX 75209, for an exemption from the requirements of §§ 25.785(d) and 25.813(e) of Title 14, Code of Federal Regulations (14 CFR). The proposed exemption, if granted, would permit relief from the requirement for firm handholds along each aisle and additional passenger areas and from prohibition of the installation of interior doors between passenger compartments in the executive interior of a Boeing Model 747-400 airplane having serial number 25880, in “private, not-for-hire” use.

**The petitioner requests relief from the following regulations:**

**Section 25.785(d), Amendment 25-32** – Requires a “firm handhold” along each aisle.

**Section 25.813(e), Amendment 25-46** - Prohibits installation of interior doors between passenger compartments.

**The petitioner's supportive information is as follows:**

Associated Air Center has submitted a Petition for Exemption from the requirements of 14 CFR 25.785(d) and 25.813(e) for a Boeing Model 747-400 airplane having serial number 25880. Section 25.785(d) requires that a “firm handhold” be provided along each aisle and in additional passenger areas. Section 25.813(e) prohibits the installation of interior doors between passenger compartments in the airplane. The petitioner requests exemption from these regulations, because the airplane will be configured for private use, rather than for commercial passenger operations.

In support of its petition, Associated Air Center makes the following points:

- The regulations pertaining to transport category airplanes are predicated on carriage of commercial passengers. They do not consider the situation of transport category airplanes in “private, not-for-hire” use.
- For airplanes in “private, not-for-hire” use, privacy can be provided only by means of doors. An exemption is needed to allow such use without compromising safety for those on board.
- The FAA has previously granted such exemptions to Boeing Model 777-200 and 767-200 airplanes.
- The airplane which Associated Air Center proposes to configure for “private, not-for-hire” use is similar to those airplanes in that all have approximately the same (wide body) cross section.
- Associated Air Center is proposing alternative requirements that provide an appropriate level of safety for the intended use of the airplane and for its occupants.
- Therefore, an exemption is appropriate for the Boeing Model 747-4J6 airplane.

The petitioner further states that, for the following reasons, the exemption will be in the public interest:

1. “Given the proliferation of Executive Configured Transport Category Airplanes currently taking place, and anticipated in the near future, approval of these exemptions will enable United States manufacturers of Transport Category Airplanes to effectively compete in this expanding market.
2. Additional sales of United States manufactured airplanes outside of the traditional airline market, and completion of many of them at United States owned and operated Aircraft Completion Facilities, will serve to increase profitability of these manufacturers and their supplying/supporting companies.

3. Stability and improved financial performance of these United States companies gives greater job stability to the workers employed by the companies, causing a stabilizing influence to the greater United States economy, due to the consumer pending activities associated with stable workers.
4. Improved financial performance of United States owned and operated corporations and increased work force stability translates to continued and improved local, state and federal tax revenues, which in turn adds to the stability of the total United States economy.
5. Improved financial performance allows United States corporations to continue to invest in Research and Development allowing the United States to maintain or improve its competitive position in the world economy.
6. A large number of these types of airplanes will probably be sold to “offshore” clients, improving the United States balance of trade.
7. Since the passengers aboard these airplanes will not be revenue paying customers of the airlines, there can be no degradation to airline passenger safety, and therefore no detrimental impact on the public at large. It is interesting to note the only commenters for the NPRMs were modification centers and customers who strongly supported the initial petition.”

A copy of the entire petition submitted by Associated Air Center is available on the Internet in the Department of Transportation’s Docket Management System (DMS). To view or print a copy, go to <http://dms.dot.gov/>. Select Simple Search, enter Docket Number 18913 and click on OK. This will bring up a list of documents. See the listing for a petition with a filing date of 10/20/2004 (the amended petition). Click on TIF or PDF to view a copy of the petition.

### **Public Comment**

A summary of this petition was not published in the Federal Register for public comment, because this exemption is similar to previous petitions for which no public comments were received.

### **The Federal Aviation Administration's analysis/summary is as follows:**

As more and more transport category airplanes have been configured (or re-configured) for “private, not-for-hire” 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, not-for-hire use of such airplanes. Given this situation, the FAA has received a number of petitions for exemption from certain regulations. The FAA has granted such exemptions when it finds that to do so is in the public interest and does not adversely affect the level of safety provided by the regulations. In the future, the FAA intends to propose regulations governing transport category airplanes in private use, obviating the need for case-by-case review of individual petitions for exemption.

### Firm Handhold

Specifically, the petitioner requests an exemption from the handhold requirements of § 25.785(d) for certain areas in the passenger cabin due to wide open spaces between individual seat backs, which typically provide an adequate handhold. This airplane is a wide open interior configuration with very few areas that have firm handholds spaced the appropriate distance apart.

The FAA has considered the requirement for firm handholds in the context of private use airplanes. The arrangement for the interior arrangement that the petitioner has proposed provides an acceptable level of safety for a transport category airplane in private use.

### Interior Doors

The placement of interior doors is clearly quite significant for the owner/operator of the airplane. The flexibility to partition the airplane into individual rooms, such as private meeting rooms or bedrooms, is paramount to an acceptable interior. The availability of private meeting space and bedrooms is essential. 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 type is an interior door between passenger compartments. The second type is an interior door between the exit and the passenger compartment.

Until recently, only the first type of door was prohibited by § 25.813(e). However, Amendment 25-116, a recent amendment to the airworthiness standards for transport category airplanes, now prohibits interior doors between the exit and the passenger compartment. In addition, Amendment 121-306 will prohibit these doors in airplanes manufactured after November 27, 2006, operated under part 121. These amendments, entitled "Miscellaneous Cabin Safety Changes" were published in the *Federal Register* on October 27, 2004.

In terms of airplanes configured for "private, not-for-hire" use, there are three different categories of doors in these types of passenger cabins.

1. Category 1 is a door in a room which may be either the full width of the airplane or less than the full width. If it is less, there will be an aisle on the outside of the room. This type of room may be occupied during take-off and landing, and only the occupants of the room must use the door to reach an exit.
2. Category 2 is a door in a room which is less than the full width of the airplane. There is an aisle on the outside of the room. This type of room may be occupied during take-off and landing, and there is a single emergency exit or pair emergency exits within the compartment.

3. Category 3 is a door in a room which is the full width of the airplane. Passengers are seated on both sides of the door, and there is a pair of emergency exits at one end.

After considerable deliberation, the FAA has concluded that—in regard to the installation of interior doors between passenger compartments—not all interior doors are equivalent. With respect to such interior doors, the FAA has determined that the following requirements will produce an adequate level of safety:

1. In order to maximize the level of safety, doors in Category 2 or 3—installed across the main cabin aisle—must open and close in a transverse direction. That is, the direction of motion of the door must be at a right angle to the longitudinal axis of the airplane. A “pocket door” is one example of such a design. This will tend to minimize the chance that the inertia forces of an accident could force the door closed.
2. Redundant means are necessary to latch doors open for takeoff and landing. Each latching means must have the capability 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 the event that 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 escape in either direction and emergency equipment can be moved. Frangibility may be demonstrated in either of the following ways:
  - A 5<sup>th</sup> percentile female can break through the door, creating a large enough opening that a 95<sup>th</sup> percentile (or larger) male can pass through. (See Advisory Circular 25-17, Transport Airplane Cabin Interiors Crashworthiness Handbook, paragraph 43.b(2)).
  - A 5<sup>th</sup> percentile female can break a hinge on the door—or a hinge on a smaller door within the door—such that the door can swing, so as to allow a 95<sup>th</sup> (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, take-off and landing only when the room is occupied.
5. Doors which fall into Categories 2 or 3 must be in the open position during taxi, take-off and landing, regardless of occupancy.
6. With respect to the possibility that a door will remain closed when it should not be, the FAA believes that a higher level of awareness is required to address this issue. Due to the relative complexity of the cabin interior, the FAA does not believe that inspection by flight attendants prior to takeoff and landing is sufficient to verify that interior doors are in their

proper position. Consequently, some type of remote indication is considered necessary. The petitioner's proposal to provide remote indication to the flight crew is considered adequate.

The FAA has considered the petitioner's supporting information and finds that a grant of exemption is in the public interest and would not adversely affect safety. Therefore, pursuant to the authority contained in § 49 U.S.C. §§ 40113 and 44701, delegated to me by the Administrator, Associated Air Center is hereby granted an exemption from the requirements of §§ 25.785(d), Amendment 25-32, and 25.813(e), Amendment 25-46 for a Boeing Model 747-400 airplane having serial number 25880. Specifically, the exemption allows relief from the requirement to provide firm handholds in the aisle in the open areas and permits a door between passenger compartments. This exemption is subject to the following conditions:

1. The airplane is not 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. The maximum passenger capacity is 100.
2. Each door between passenger compartments must be frangible.
3. Doors which fall into Category 1 must be in the open position during taxi, take-off and landing only when the room is occupied.
4. Doors which fall into Categories 2 or 3 must be in the open position during taxi, take-off and landing, regardless of occupancy.

5. Appropriate procedures must be established to signal the flightcrew that a door between passenger compartments is closed and to prohibit takeoff or landing when a door between passenger compartments is not in the proper position.
6. Doors between passenger compartments must have dual means to retain them in the open position, each of which means must be capable of withstanding the inertia loads specified in 14 CFR § 25.561.
7. Doors in Categories 2 or 3 which are installed across a longitudinal aisle must translate laterally to open and close.

Issued in Renton Washington, on December 28, 2004.

/s/ Kevin Mullin  
Acting Manager  
Transport Airplane Directorate  
Aircraft Certification Service