Exemption No. 8767

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

In the matter of the petition of

Cessna Aircraft Company

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

Regulatory Docket No. FAA-2006-25199

GRANT OF EXEMPTION

By letter L390-06-1808, dated June 1, 2006, Mr. Larry Menestrina, on behalf of Mr. Vasant Gondhalekar, Director of Airworthiness and Product Safety, Cessna Aircraft Company, One Cessna Boulevard, P.O. Box 7704, Wichita, Kansas 67277-7704, petitioned the Federal Aviation Administration (FAA) for an exemption from the requirements of § 25.813(e) of Title 14, Code of Federal Regulations (14 CFR). The proposed exemption, if granted, would permit relief from the requirement that prohibits the installation of interior doors between passenger compartments. The proposed exemption is specifically for the installation of an executive interior on Cessna Model 750 airplanes that will be designated as "private, not-for-hire."

The petitioner requests relief from the following regulation:

> **Section 25.813(e), Amendment 25-82 -** Prohibits installation of interior doors between passenger compartments.

The petitioner's supportive information is as follows:

> The Cessna Model 750 airplane is designed to the requirements of 14 CFR part 25, which address transport category airplanes. The part 25 regulations do not make any distinction between commercial airplanes used by airlines for fare paying passengers and private, not-for-hire, airplanes used for corporate operations.
>
> Cessna states that airplanes specifically designed for private use should be eligible for an exemption from certain portions of part 25, provided a similar level of safety is provided and can be demonstrated.

Cessna further states that the following factors are unique to private use airplanes and provide an initial level of safety that cannot be achieved on a commercial airplane flight:

- The crews of private use airplanes are intimately knowledgeable of the specific airplane they are operating.
- The passengers in private use airplanes are typically frequent fliers and familiar with the safety features of the specific airplane they are aboard.
- The crew of a private use airplane has regular contact with the "repeat" passengers, which has a positive influence on communicating safety issues.

Cessna also mentions that many customers who purchase and operate Cessna airplanes consider privacy to be crucial. Therefore, it is important that a portion of the cabin be configured with a private area that will prevent personnel who are not seated within the compartment from hearing conversations taking place inside the compartment. The only plausible method of providing such privacy is through the use of doors that separate passenger compartments. When a privacy area is created within the passenger cabin, the doors separating the private area from the rest of the cabin will be located between passenger compartments.

The cabin of the Cessna Model 750 is approximately 5.5 feet wide. It is necessary to divide the cabin full width laterally to produce a private area because a side corridor is impractical. The proposed doors for Cessna Model 750 will be comprised of left and right halves that slide laterally into recesses of the dividing bulkhead between the two passenger compartments. When the doors are open (i.e., stowed), an unobstructed opening is provided that complies with the dimensions of § 25.813 for the maximum possible passenger configuration. In addition, Cessna states that the doors will have the following additional safety features:

1. The doors will be placarded to be latched open during taxi, take-off, and landing.
2. When the doors are deployed (i.e., spanning across the aisle), there will not be a latching mechanism that keeps the doors in that position, obstructing the aisle. Only low strength magnets or equivalent non-latching parts will be used to keep the two doors secured together. This will allow occupants to access the opposite side of the door without the use of any tools.
3. Each door will feature a locking mechanism that is capable of supporting the inertia loads specified in § 25.561. The locking mechanism design minimizes the probability of the door unlocking due to fuselage distortion in an emergency landing.
4. The operator of the door will have an additional means of indicating the position of each door. Tactile feedback will be relayed to the operator by means of a

"clicking sound" when the door is fully retracted and latched. The operator will also feel the retract mechanisms of the latch as the door is latched open. This provides the operator with redundant means of identifying the doors' position.

5. The door will be designed to be frangible, with features that will allow a 5th percentile female to break the doors open in case of an emergency, resulting in an aperture large enough to allow for a 95th percentile male to escape.
6. Airplane flight manual limitations will be established to require the door to be secured open for taxi, takeoff, and landing. This is similar to the current lavatory door Equivalent Level of Safety.
7. Bulkhead emergency exit sign(s) will be installed to ensure that the level of passenger guidance required to find an exit will be provided.

Cessna also states that the following provision will be documented as an operating limitation in the Cessna 750 Airplane Flight Manual.

1. "The airplane must not be operated for hire or offered for common carriage. This does not preclude the operator from receiving remuneration to the extent consistent with 14 CFR part 125 and 14 CFR part 91, subpart F, as applicable."

Effect of the Exemption

Cessna states that the basic issues of a passenger finding and reaching an exit in an emergency are addressed by the above additional safety features and by the existing safety parameters inherent in the operation of private use airplanes. Cessna also states that even if some extreme condition should result in a door being closed or partially closed after an accident, there are simple means to get through the door to reach the exit(s). For this reason, the exemption, as requested, would provide a level of safety for passengers in the Cessna Model 750 that would be equal to that required for passengers of airplanes in commercial operation.

Public Interest Statement

Cessna states the following:

"Cessna Aircraft Company is a major U.S. corporation, which manufactures, sells, and services business transport aircraft to the domestic and international markets. Its manufacturing facilities are mainly located in the United States and its sales and service facilities are located in the United States and other locations throughout the world. The company employs thousands of employees in the United States providing strong support to the local economies where these employees and facilities are located. "The company utilizes numerous products, such as avionics and environmental control systems, from scores of suppliers located throughout the world.

"Cessna competes for new business all over the world, and the corporate aircraft market is expected to grow. The owners and operators of Cessna business aircraft very often prefer to configure their aircraft interiors to facilitate use of interior space for in-flight conferences and other work not normally accomplished aboard airline aircraft. In order to satisfy the customer demands and maintain its marketing competitiveness, Cessna is seeking to accommodate mid cabin divider installations in its business aircraft. Doing this without compromising safety, can only increase the sales volume of these aircraft, benefiting Cessna, its employees, and the local and national economies they support. Due to the high demand for these business aircraft, it is important that Cessna be granted the regulatory relief requested. The stabilizing effect that Cessna has on the job market is significant and in the best interest of the public. Failure to achieve this goal will result in a significant loss of income for the local economy and will have a negative effect on both domestic and foreign trade for the United States.

"Private areas in corporate aircraft are being requested by an increasing number of prospective aircraft operators. These operators compare Cessna products with other products from other domestic and foreign aircraft manufacturers who are able to offer this feature. This differential creates an unfair competitive edge in this market. The exemption as proposed above is in essence only an alternative method of achieving an appropriate level of safety, while at the same time providing features attractive to prospective purchasers. Cessna believes that action on this petition should not be delayed by publication and comment procedures since the FAA has previously published other petitions for exemption on this same issue and has received no adverse comments. In addition, further delay on this petition could cause economic harm to Cessna and their suppliers whose material procurement decisions will be substantively affected by the decision on this petition."

Federal Register Publication

A summary of this petition was not published in the Federal Register. The nature of this exemption is effectively identical to those of previous petitions for which there were no public comments received.

The FAA's analysis/summary is as follows:

The FAA considers the petitioner's proposal to be in the public interest because reasons specified by the petitioner. There is a strong customer demand for this feature, which will only be installed on private use airplanes.

As 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.

Interior Doors

The placement of interior doors is clearly quite significant to 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 rooms 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, part 25, as amended by Amendment 25-116, prohibits interior doors between the exit and the passenger compartment. In addition, Amendment 121-306 prohibits these doors in airplanes manufactured after November 27, 2006, operated under 14 CFR part 121. Amendments 25-116 and 121-306, titled "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 four different categories of doors in the passenger cabins.

1. Category 1 is a door in a room and the room is less than the full width of the airplane. There will be an aisle on the outside of the room. This type of room may be occupied during takeoff 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 and is the same as Category 1, except there is a single emergency exit or pair of emergency exits within the room.

3. Category 3 is a door or doors in a compartment and the compartment 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 compartment. The compartment does not have any emergency exits. This type of compartment may be occupied during takeoff and landing.

4. Category 4 is a door in a room and the room 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. This type of room may be occupied during takeoff and landing.

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, 3, or 4 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^{th} percentile female can break through the door, creating a large enough opening that a 95^{th} percentile (or larger) male can pass through. (See Advisory Circular 25-17, "Transport Airplane Cabin Interiors Crashworthiness Handbook," paragraph 43b(2)).

    - A 5^{th} 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^{th} (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. With respect to the possibility that a door will remain closed when it should not be, the FAA has determined that a higher level of awareness is required to address this issue. Due to the relative complexity of the cabin interior, the FAA has

determined that inspection by flight attendants prior to takeoff and landing is sufficient to verify that interior doors are in the proper position. Consequently, some type of remote indication is considered necessary. The petitioner's proposal to provide remote indication to the flightcrew is considered adequate.

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in § 49 U.S.C. §§ 40113 and 44701, delegated to me by the Administrator, Cessna Aircraft Company is hereby granted an exemption from 14 CFR 25.813(e), Amendment 25-72. The petition is granted to the extent necessary to allow the Cessna Aircraft Company to install executive interiors on "private, not-for-hire" Cessna Model 750 airplanes. 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.

2. Each door between passenger compartments must be frangible.

3. Doors that fall into Categories 1 and 3 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 or 4 must be in the open position during taxi, takeoff 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 § 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 August 14, 2006.

Signed by
Ali Bahrami
Manager, Transport Airplane Directorate
Aircraft Certification Service