

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

In the matter of the petition of

**L-3 Communications Integrated
Systems, L.P.**

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

Regulatory Docket No. FAA-2012-0707

DENIAL OF AMENDED EXEMPTION

By letter dated February 12, 2014, Mr. Phillip T. Crawford, ODA-750154-SW Administrator, L-3 Communications Integrated Systems, L.P., 7601 Maehr Road, P.O. Box 154580, Waco, Texas, 76715-4580, petitioned the Federal Aviation Administration (FAA) for an amendment to exemption number 10686 and from section 25.813(e) of Title 14, Code of Federal Regulations (14 CFR). The proposed exemption, if granted, would permit relief from the requirements and limitations specified in exemption no. 10686 that permit the installation of interior doors between passenger compartments. Specifically, the petition requests removing the requirement that doors installed across the main aisle must open and close in a transverse direction. The proposed exemption is specifically for the installation of an executive interior on Boeing Model 747-8 airplanes designated as “private use, not for hire, not for common carriage.”

The petitioner requests relief from the following regulations:

Section 25.813(e) at Amendment 25-46 – Requires that no door may be installed in any partition between passenger compartments.

The petitioner supports their request with the following information.

This section quotes, in pertinent part, the relevant information from the petitioner’s request. The complete petition is available at the Department of Transportation’s Federal Docket Management System, on the Internet at <http://regulations.gov>, in Docket No. FAA-2012-0707.

Discussion

L-3 Communications Integrated Systems has been contracted by customers for interior completions of VVIP/Government/Head-of-State business interiors in more than one Boeing 747-8 airplane. The FAA has accepted L-3's STC application on one program and has authorized L-3 ODA-750154-SW to conduct the program under Project Number P-12-001. The certification basis for the Boeing Model 747-8 is 14 CFR 25, Amendment 25-1 through 25-120 with revisions, later amendments, Exemptions, and Special Conditions as shown in FAA Type Certificate Data Sheet A20WE.

14 CFR 25 governs Type Design certification requirements for transport category airplanes. The primary intent of the CFR, as applied to Transport Aircraft, is intended for US commercial or common-carriage applications. These regulations are to ensure that aircraft manufacturers provide the appropriate design features to meet the standards necessary to protect the traveling US public. These requirements define the normal public interest and safety level and provide regulatory guidelines to meet them. When the individual aircraft is to be used in private services (e.g., not for US hire or common carriage), it is appropriate to take into consideration the specific needs of a different population of more experienced users and the operations specific to those users.

Historically, the FAA has made adjustments to specific requirements based upon specific design and operational factors. As stated above, numerous exemptions and other regulatory changes have been granted to meet specific aircraft designs and applications. In like manner, L-3 proposes to use mitigating design requirements and operational limitations to justify similar exemptions to 747-8 aircraft modified for VVIP/Government/Head-of-State, not-for-hire or common-carriage service.

L-3 Communications Integrated Systems successfully petitioned for an Exemption from a number of 14 CFR 25 requirements. FAA Exemption 10686 was issued and among other items allows the use of doors that translate at right angles to the longitudinal aisle of the aircraft. L-3's latest customer's design contains a rotunda-type entryway that has multiple aisles to other parts of the aircraft. Those aisles are not necessarily longitudinal aisles but are aisles to other compartments. Relief is needed to allow the use of straight or curved pocket-type doors that translate across the direction of travel.

Basis for Exemption

The aircraft that are the subjects of this petition are Boeing Model 747-8 modified for non-commercial/non-common-carriage VVIP/Government use/Head-of-State service. They are typically in the service of foreign Heads-of-State friendly to US interests and will be operated under 14 CFR 91/14 CFR 125 regulations or equivalent foreign standard. For this reason the privileges of this proposed exemption will be exercised outside the United States.

The interior configurations typically installed result in a very small passenger population vis-à-vis for-hire or common-carriage standards. These passengers are typically very

experienced travelers. For this reason the crews and passengers who fly on this aircraft have a substantially higher familiarity with the aircraft and its systems than those envisioned by the writers of the original CFR.

The exemption proposed herein are justified based upon the following facts:

- This aircraft is intended for VVIP/Government/Head-of-State use and is not appropriately configured for or intended for use for hire or common carriage.
- Depending on the interior layout, these aircraft typically carry a low fraction of the originally Type-Approved passenger load.
- SFAR 109, *Special Requirements for Private Use Transport Category Aircraft*, was issued in 2009 to address these issues among others. This SFAR is limited to aircraft with passenger counts of 60 or less. This exemption will apply similar requirements and basis to the slightly larger aircraft.
- The Petitioner proposes mitigating requirements and conditions that establish acceptable safety levels for the occupants consistent with previous grants.

With these justifications in mind, L-3 Communications Integrated Systems requests relief from and proposes a petition for exemption from the listed regulations.

14 CFR 25.813(e): Doors Between Passenger Compartments

Discussion

This discussion covers doors that separate passenger compartments throughout the aircraft. This discussion does not include doors or folding partitions that separate non-passenger compartments and these doors do not apply to this exemption request. Door[s] between passenger compartments will have the following design features: dual latches (each of which are able to withstand the forces defined by 14 CFR 25.561) to secure them in the open position, cockpit annunciation of the door position for taxi, take-off, and landing, and the doors will be frangible to allow egress in the event that they should become stuck in the closed position.

Occupant Safety Considerations

The risk for occupants due to the use of doors between passenger compartments should be considered acceptable for the following reasons:

- Any door between passenger compartments will have dual means to retain them in the open position for take-off and landing, each of which will be capable of withstanding the inertia loads specified in 14 CFR 25.561,

- Doors to compartments that are unoccupied during Taxi/Take-off/Landing operations will be closed. Door position will be indicated in the cockpit when the door is in the wrong position for take-off and landing,
- All doors between passenger compartments will be frangible,
- The airplane will be operated under 14 CFR 91/14 CFR 125 or foreign equivalent and will not be operated for hire or offered for common carriage.
- The airplane flight manuals (AFMs) will provide procedures and limitations to ensure that the doors are in the proper position for take-off and landing.

Requested Relief

L-3 proposes to meet the requirements as stated in SFAR 109 and various Exemptions as:

- In lieu of the requirements of Sec. 25.813(e), interior doors may be installed between passenger seats and exits, provided the following requirements are met:
 - Each door between any passenger seat, occupiable for taxi, take-off, and landing, and any emergency exit must have a means to signal to the flightcrew, at the flightdeck, that the door is in the open position for taxi, take-off, and landing.
 - Appropriate procedures/limitations must be established in the AFM to ensure that any such door is in the open configuration for take-off and landing.
 - Each door between any passenger seat and any exit must have a dual means to retain it in the open position, each of which is capable of reacting the inertia loads specified in Sec. 25.561.
 - The direction of motion of any straight or curved doors installed across an aisle must be across the direction of motion of the occupant, e.g., pocket doors are one example of such a design.
 - Each door between any passenger seat and any exit must be frangible in either direction. A frangibility test will be performed on each type of inter-compartment door installation in the aircraft using a 5th percentile female subject.
 - Each door between any passenger seat and any exit must be openable from either side, and if a locking mechanism is installed, it must be capable of being unlocked from either side without the use of special tools.
- When the aircraft is equipped with interior doors under this Exemption:

- The airplane flight manual (AFM) must include an appropriate limitation that the airplane must be staffed with at least the number of flight attendants required by 14 CFR 91.533(a) who meet the requirements of 14 CFR 91.533(b).
- The AFM must include appropriate limitation(s) to require a preflight passenger briefing describing the appropriate functions to be performed by the passengers and the relevant features of the airplane to ensure the safety of the passengers and crew.

Public Interest

As in the cases of numerous already established Exemptions, granting this petition for exemption would be clearly in the public interest of the people of the United States of America for the following reasons:

1. Given the proliferation of VVIP/Government use/Head-of-State Configured Transport Category Airplanes, and anticipated in the near future, approval of these exemptions will enable the United States manufacturers of Transport Category Airplanes to effectively compete in this expanding market.
2. Additional sales of United States VVIP/Government use/Head-of-State Configured interiors outside of the traditional airline market will serve to increase manufacturer's profitability and that of 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 workforce stability translates into 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 foreign clients, improving the United States balance of trade.
7. This grant supports positive relations with the Heads-of-State of foreign countries operating US-built aircraft.

8. Foreign Heads-of-State operating US-manufactured aircraft strengthens the preeminent global position of the United States aircraft manufacturing, completion, and regulatory industry.
9. These aircraft will be operated under 14 CFR 91 or 14 CFR 125 or its foreign equivalent. These aircraft will not be operated for hire or offered for common carriage, therefore there is no safety impact on the US flying public.
10. The exemption request, if granted, allows the FAA to expend resources on this subject only this one time, not for each interior arrangement, and thereafter to concentrate resources on the FAA's highest priorities, including Continuing Operational Safety.

Future Use and Application of the Exemption

This Exemption is intended for use on current and future 747-8 interior programs by L-3 Communications and its subsidiaries. Use and applicability of the Exemption will be controlled in the Project Specific Certification planning submitted to the applicable FAA Certification Office.

Exemptions to specific rules and associated mitigating requirements are to be individually applied. There is no requirement that all portions of this Exemption be applied simultaneously. When the approved exemption to a specific rule or rules is not used then full compliance to that rule or rules is required.

In accordance with 14 CFR 11.81(h), we request to exercise the privilege of this exemption outside the United States since the operator of the first airplane is located in a foreign country.

***Federal Register* publication**

A summary of the petition was published in the *Federal Register* on April 28, 2014 [79 FR 23401]. No comments were received.

The FAA's analysis

The FAA has issued numerous exemptions for installation of interior doors on airplanes that are operated for private use only. We have been consistent with the requirement that the doors in category 2, 3, or 4, installed across the main cabin aisle, must open and close in a transverse direction. This is consistent also with SFAR 109 paragraph 10(d) which requires "Doors installed across a longitudinal aisle must translate laterally to open and close, e.g., pocket doors." That is, the direction of motion of the door must be at a right angle to the longitudinal axis of the airplane. This is a condition that was included in exemption no. 10686 and from which the petition requests an exemption. This condition, along with the other conditions and limitations in this exemption, produces an acceptable level of safety for these types of airplanes operated for private use only.

In a forward-crash event, the major loading force is in the forward direction along the longitudinal axis of the airplane. When the direction of motion of the door is at a right angle to the longitudinal axis of the airplane, this forward-crash loading condition does not tend to close the doors. For the configurations the petitioner proposes, a forward-crash loading condition would tend to close the entire door or one half of the door opening for the doors across the main-cabin aisle. The FAA considers this an important condition due to the possibility that, during a crash event, the doors could become unlatched as the result of fuselage deformations and/or structural failures.

The petitioner has not proposed any additional compensating features for the proposed design that are not already required by the exemption or the operating regulations for the airplane. The FAA was unable to develop any additional compensating features that could be added to the petitioner's proposal to restore the level of safety provided by the existing exemption conditions and limitations.

The FAA does not find this petition to be in the public interest because it does not provide the level of safety the FAA requires for these "private-use only" airplanes with curved interior doors installed across the main cabin.

The FAA's decision

In consideration of the foregoing, I find that a grant of amended exemption is not in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 40113 and 44701, delegated to me by the Administrator, I deny L-3 Communications Integrated System's petition for an exemption from § 25.813(e) that would have allowed installation of interior doors installed across the main-cabin aisle, such that the direction of motion of the door is not at a right angle to the longitudinal axis of the airplane, on Boeing Model 747-8 airplanes. Exemption no. 10686 remains in effect.

Issued in Renton, Washington, on August 22, 2014.

/s/ Kevin Hull

Kevin Hull
Acting Manager, Transport Airplane Directorate
Aircraft Certification Service