



[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA-2017-0862; Special Conditions No. 25-703-SC]

Special Conditions: Boeing Model 777-300ER Airplanes; Passenger-Cabin

High-Wall Suites

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for Boeing Model 777-300ER airplanes with high-wall suites installed in the passenger cabin. This installation is novel or unusual, and the applicable airworthiness regulations do not contain adequate or appropriate safety standards for this interior configuration. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: This action is effective on Boeing on **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Send your comments by **[INSERT DATE 45 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Send comments identified by docket number FAA-2017-0862 using any of the following methods:

- sFederal eRegulations Portal:* Go to <http://www.regulations.gov/> and follow the online instructions for sending your comments electronically.

- *GMail*: Send comments to Docket Operations, M-30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE., Room W12-140, West Building Ground Floor, Washington, DC, 20590-0001.
- *SHand Delivery or Courier*: Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- *TFax*: Fax comments to Docket Operations at 202-493-2251.

Privacy: The FAA will post all comments it receives, without change, to <http://www.regulations.gov/>, including any personal information the commenter provides. Using the search function of the docket Web site, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the **Federal Register** published on April 11, 2000 (65 FR 19477-19478).

Docket: Background documents or comments received may be read at <http://www.regulations.gov/> at any time. Follow the online instructions for accessing the docket or go to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: John Shelden, Airframe and Cabin Safety Section, AIR-675, Transport Standards Branch, Policy and Innovation Division, Aircraft Certification Service, 1601 Lind Avenue SW, Renton, Washington 98057-3356; telephone 425-227-2785; facsimile 425-227-1232; email john.shelden@faa.gov.

SUPPLEMENTARY INFORMATION:

The substance of these special conditions has been subject to the notice and comment period in several prior instances and has been derived without substantive change from those previously issued. It is unlikely that prior public comment would result in a significant change from the substance contained herein. Therefore, because a delay would significantly affect the certification of the airplane, the FAA has determined that prior public notice and comment are unnecessary and impracticable.

In addition, since the substance of these special conditions has been subject to the public comment process in several prior instances with no substantive comments received, the FAA finds it unnecessary to delay the effective date and finds that good cause exists for adopting these special conditions upon publication in the **Federal Register**.

Comments Invited

We invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data.

We will consider all comments we receive by the closing date for comments. We may change these special conditions based on the comments we receive.

Background

On December 19, 2014, Boeing applied for a type certificate design change to Type Certificate (TC) No. T00001SE to install high-wall suites in the passenger compartment of Boeing Model 777-300ER airplanes.

The Model 777 series airplane is a swept-wing, conventional-tail, twin-engine, turbofan-powered, transport-category airplane. The airplane has seating for 365 passengers and a maximum takeoff weight of 775,000 pounds.

Type Certification Basis

Under the provisions of title 14, Code of Federal Regulations (14 CFR) 21.101, Boeing must show that the Model 777-300ER airplane, as changed, continues to meet the applicable provisions of the regulations listed in Type Certificate No. T00001SE or the applicable regulations in effect on the date of application for the change, except for earlier amendments as agreed upon by the FAA.

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 25) do not contain adequate or appropriate safety standards for the Boeing Model 777-300ER airplane because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature, or should any other model already included on the same type certificate be modified to incorporate the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Boeing Model 777-300ER airplane must comply with the fuel-vent and exhaust-emission requirements of 14 CFR part 34, and the noise-certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type-certification basis under § 21.101.

Novel or Unusual Design Features

The Boeing Model 777-300ER airplane will incorporate the following novel or unusual design features:

A passenger cabin with six high-wall suites arranged in two rows of three suites each.

Discussion

The Boeing Model 777-300ER airplane will include, as a customer option, a passenger cabin with six high-wall suites arranged in two rows of three suites each, in a 1-1-1 configuration. The suites have doors and walls that are taller than has been previously certified by the FAA on Boeing 777 series airplanes. The walls extend from the floor to the ceiling or close to the ceiling.

The characteristics of the suite design are unique such that the suites are not fully open to the cabin, as are conventional mini-suites with partial-height surrounds, and they are not remote from the main cabin, as are overhead crew rests. Likewise, unique but suitable fire-protection requirements for smoke detection and firefighting are needed for this configuration. Furthermore, the proposed suite design necessitates the development of additional conditions that do not currently exist within associated airworthiness standards, including, but not limited to, alerting and lighting when oxygen masks are needed, crew procedures for managing hazards and suite occupants, and maintaining cabin-egress route dimensions after deformations of the walls and seats.

These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

Applicability

As discussed above, these special conditions are applicable to the Boeing Model 777-300ER airplane with high-wall, single-occupant suites with doors installed. Should Boeing apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well.

Conclusion

This action affects only certain novel or unusual design features on one model series of airplane. It is not a rule of general applicability.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for Boeing Model 777-300ER airplanes.

Note: In these special conditions, “suite” means high-wall suite.

1. Where suites are installed, a supplemental oxygen system must provide the following:
 - a. The supplemental oxygen system for each suite must include a minimum of two oxygen masks and meet the same 14 CFR part 25 regulations as do the supplemental oxygen system for the main passenger-cabin occupants.

- b. An aural alert to warn occupants and to indicate the need to don oxygen masks in the event of decompression. The aural alert must activate concurrently with deployment of the oxygen masks in the main passenger cabin.
 - c. The illumination level of the normal suite lighting system must be activated automatically and must be sufficient for each occupant to locate a deployed oxygen mask.
 - d. If a chemical oxygen generator is used as the oxygen supply source, the suite oxygen installation must meet §§ 25.795(d) and 25.1450.
- 2. A smoke-detection or fire-detection system (or systems) must be provided that monitors each occupiable space within the suite. Flight tests must be conducted to show compliance with this requirement. If a fire occurs, each system (or systems) in the affected suite must provide:
 - a. A visual indication to the flight deck within one minute after the start of a fire.
 - b. An aural warning in the suite area where detection has occurred.
 - c. A warning in the main passenger cabin. This warning must be readily detectable by a flight attendant, taking into consideration the locations of flight attendants throughout the main passenger compartment during various phases of flight.
- 3. Passenger-management procedures must be provided should occupants need to be moved in the event of smoke detection, or firefighting within the suite or where suites are installed:
 - a. A limitation must be included in the airplane flight manual (AFM) or other suitable means requiring that crewmembers be trained in the suite passenger-management procedures.

- b. Approved procedures describing methods for suite passenger management must be established. These procedures must be transmitted to the operator for incorporation into its training programs and appropriate operational manuals.
- 4. The design of each suite, and the location of the firefighting equipment where suites are installed, must allow the crewmembers to conduct effective firefighting in the suite. For a manual, hand-held extinguishing system (designed as the sole means to fight a fire) for the suite:
 - a. A limitation must be included in the AFM or other suitable means requiring that crewmembers be trained in the firefighting procedures.
 - b. Each suite design must allow crewmembers equipped for firefighting to have unrestricted access to all parts of the suite compartment.
 - c. The time for a crewmember in the main passenger cabin to react to the fire alarm and gain access to the suite must not exceed the time it would take for the compartment to become filled with smoke, thus making it difficult to locate the fire source(s).
 - d. Approved procedures describing methods for searching the suite compartment for fire source(s) must be established. These procedures must be transmitted to the operator for incorporation into its training programs and appropriate operational manuals.
- 5. A means must be provided to prevent hazardous quantities of smoke or extinguishing agent originating in each suite from entering any other occupiable compartment.
 - a. Small quantities of smoke may penetrate from the suite into other occupied areas during the one-minute smoke detection time.

- b. Hazardous quantities of smoke may not enter any occupied compartment during access to manually fight a fire in the suite. A small amount of smoke may enter the occupied compartments while a firefighter enters and exits the suite, and is not considered hazardous provided the smoke dissipates quickly.
 - c. Flight tests must be conducted to show compliance with this requirement.
6. If waste-disposal receptacles are fitted in the suite, the suite must be equipped with an automatic fire-extinguishing system that meets the performance requirements of § 25.854(b).
7. Each stowage compartment in the suite must be completely enclosed. All enclosed stowage compartments within the suite compartment that are not limited to stowage of emergency equipment or airplane-supplied equipment (i.e., bedding) must meet the design criteria described in the table below. Enclosed stowage compartments greater than 57 feet 3 inches cubic interior volume are not permitted by these special conditions.

Design Criteria for Enclosed Stowage Compartments Not Limited to Stowage of Emergency or Airplane-Supplied Equipment

| Fire Protection Features | Applicability of Fire-Protection Requirements by Interior Volume | | |
|--|--|--|---------------|
| | Less than 25 Cubic Feet | 25 Cubic Feet to Less than 57 Cubic Feet | 57 Cubic Feet |
| Compliant Materials of Construction ¹ | Yes | Yes | Yes |
| Smoke or Fire Detectors ² | No | Yes | Yes |
| Liner ³ | No | Conditional | Yes |
| Fire Location | No | Yes | Yes |

| | | | |
|-----------------------|--|--|--|
| Detector ⁴ | | | |
|-----------------------|--|--|--|

¹Compliant Materials of Construction: The material used in constructing each enclosed stowage compartment must at least be fire resistant and must meet the flammability standards established for interior components (i.e., 14 CFR part 25 Appendix F, Parts I, IV, and V) per the requirements of § 25.853. For compartments less than 25 ft.³ in interior volume, the design must ensure the ability to contain a fire likely to occur within the compartment under normal use.

²Smoke or Fire Detectors: Enclosed stowage compartments equal to or exceeding 25 ft.³ in interior volume must be provided with a smoke- or fire-detection system to ensure that a fire can be detected within a one-minute detection time. Flight tests must be conducted to show compliance with this requirement. Each system (or systems) must provide:

- mA visual indication in the flight deck within one minute after the start of a fire.
- An aural warning in the suite compartment.
- cA warning in the main passenger cabin. This warning must be readily detectable by a flight attendant, taking into consideration the locations of flight attendants throughout the main passenger compartment during various phases of flight.

³Liner: If material used in constructing the stowage compartment can be shown to meet the flammability requirements of a liner for a Class B cargo compartment (i.e., § 25.855 at Amendment 25-116, and Appendix F, part I, paragraph (a)(2)(ii)), then no liner would be required for enclosed stowage compartments equal to or greater than 25 ft.³ but less than 57 ft.³ in interior volume. For all enclosed stowage compartments equal to 57 ft.³ in interior volume, a liner must be provided that meets the requirements of § 25.855 for a Class B cargo compartment.

⁴Fire Location Detector: If a suite compartment has enclosed stowage compartments exceeding 25 ft.³ interior volume that are located separately from the other stowage compartments (located, for example, away from one central location, such as the entry to the suite compartment or a common area within the suite compartment, where the other stowage compartments are), that suite compartment would require additional fire-protection features and/or devices to assist the firefighter in determining the location of a fire.

8. Where suites are installed, the design of each suite must:
 - a. Maintain minimum main aisle(s), cross aisle(s), and passageway(s) requirements of § 25.815 when subjected to the ultimate inertia forces listed in § 25.561(d).
 - b. Prevent structural failure or deformation of components that could block access to the available evacuation routes (e.g., seats, doors, contents of stowage compartments, etc.).

9.

In addition to the requirements of § 25.562 for seat systems, which are occupiable during taxi, takeoff, and landing, the suite structure must be designed for the additional loads imposed by the seats as a result of the conditions specified in § 25.562(b).

Issued in Renton, Washington, on October 19, 2017.

Suzanne Masterson

Acting Manager, Transport Standards Branch

Policy and Innovation Division

Aircraft Certification Service

[FR Doc. 2017-23256 Filed: 10/25/2017 8:45 am; Publication Date: 10/26/2017]