title 12 of the Code of Federal Regulations to read as follows:

## PART 627—TITLE IV CONSERVATORS, RECEIVERS, AND VOLUNTARY LIQUIDATIONS

■ 1. The authority citation for part 627 continues to read as follows:

**Authority:** Secs. 4.2, 5.9, 5.10, 5.17, 5.51, 5.58, 5.61 of the Farm Credit Act (12 U.S.C. 2183, 2243, 2244, 2252, 2277a, 2277a–7, 2277a–10).

### Subpart B—Receivers and Receiverships

■ 2. Revise § 627.2750(h) to read as follows:

**§ 627.2750 Priority of claims—banks.**

* * * * *

(h) All claims of holders of consolidated and System-wide bonds and all claims of the other Farm Credit banks arising from their payments on consolidated and System-wide bonds pursuant to 12 U.S.C. 2155 or pursuant to an agreement among the banks to reallocate the payments, provided the agreement is in writing and approved by the Farm Credit Administration.

* * * * *

**§ 627.2755 [Amended]**

■ 3. Amend § 627.2755(a) by removing the words ''described in § 627.2745'' in the last sentence.

Dated: September 20, 2007.

**Roland E. Smith,**

*Secretary, Farm Credit Administration Board.*

[FR Doc. E7–18968 Filed 9–25–07; 8:45 am]

BILLING CODE 6705–01–P

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

### 14 CFR Part 25

**[Docket No. NM367 Special Conditions No. 25–363–SC]**

## Special Conditions: Boeing Model 787–8 Airplane; Tire Debris Penetration of Fuel Tank Structure

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for the Boeing Model 787–8 airplane. This airplane will have novel or unusual design features when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. These novel or unusual design features include wing fuel tanks constructed of carbon fiber composite materials. For these design features, the applicable airworthiness regulations do not contain adequate or appropriate safety standards. 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 standards. Additional special conditions will be issued for other novel or unusual design features of the Boeing Model 787–8 airplanes.

**DATES:** *Effective Date:* October 26, 2007.

**FOR FURTHER INFORMATION CONTACT:** Mike Dostert, FAA, Propulsion/Mechanical Systems, ANM–112, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98057–3356; telephone (425) 227–2132; facsimile (425) 227–1320.

**SUPPLEMENTARY INFORMATION:**

### Background

On March 28, 2003, Boeing applied for an FAA type certificate for its new Boeing Model 787–8 passenger airplane. The Boeing Model 787–8 airplane will be an all-new, two-engine jet transport airplane with a two-aisle cabin. The maximum takeoff weight will be 476,000 pounds, with a maximum passenger count of 381 passengers.

### Type Certification Basis

Under provisions of Title 14 Code of Federal Regulations (CFR) 21.17, Boeing must show that Boeing Model 787–8 airplanes (hereafter referred to as ''the 787'') meet the applicable provisions of 14 CFR part 25, as amended by Amendments 25–1 through 25–117, except §§ 25.809(a) and 25.812, which will remain at Amendment 25–115. If the Administrator finds that the applicable airworthiness regulations do not contain adequate or appropriate safety standards for the 787 because of a novel or unusual design feature, special conditions are prescribed under provisions of 14 CFR 21.16.

In addition to the applicable airworthiness regulations and special conditions, the 787 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 must also issue a finding of regulatory adequacy pursuant to section 611 of Public Law 92–574, the ''Noise Control Act of 1972.''

The FAA issues special conditions, as defined in 14 CFR 11.19, under § 11.38, and they become part of the type certification basis under § 21.17(a)(2).

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 or similar novel or unusual design feature, the special conditions would also apply to the other model under § 21.101.

### Novel or Unusual Design Features

The 787 will incorporate a number of novel or unusual design features. Because of rapid improvements in airplane technology, the applicable airworthiness regulations do not contain adequate or appropriate safety standards for these design features. These special conditions for the 787 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.

The 787 will use carbon fiber composite materials for most of the wing fuel tank structure. The ability of aluminum wing skins, as has been conventionally used, to resist penetration or rupture when impacted by tire debris is understood from extensive experience. The ability of carbon fiber composite material to resist these hazards has not been established. There are no current airworthiness standards specifically addressing this hazard for all the exposed wing surfaces.

The FAA issues these special conditions to maintain the level of safety envisioned in the existing airworthiness standards by establishing a standard for resistance to potential tire debris impacts to the 787 contiguous wing surfaces.

### Discussion

Historically, accidents have resulted from uncontrolled fires caused by fuel leaks following penetration or rupture of the lower wing by fragments of tires or from uncontained engine failure.

In one incident, in Honolulu, Hawaii, a tire on a Boeing Model 747 burst and tire debris penetrated a fuel tank access cover, causing a substantial fuel leak. Takeoff was aborted and passengers were evacuated down the emergency chutes into pools of fuel which fortunately had not ignited. This accident highlighted deficiencies in the then-existing title 14 CFR part 25 regulations pertaining to fuel retention following impact to fuel tanks by tire fragments.

After a subsequent Boeing Model 737 accident in Manchester, England, in which a fuel tank access panel was penetrated by engine debris, the FAA

amended § 25.963 to require that fuel tank access panels be resistant to both tire and engine debris. An amendment to 14 CFR part 121 required operators to modify their existing fleets of airplanes with impact resistant fuel access panels. The amendment only addressed fuel tank access panels since service experience at the time indicated that the lower wing skin of a conventional, subsonic airplane provided adequate, inherent capability to resist tire and engine debris threats. Section 25.963(e) requires showing by analysis or tests that fuel tank access covers, ''* * *minimize penetration and deformation by tire fragments, low energy engine debris, or other likely debris.'' Advisory Circular (AC) 25.963–1 defines the region of the wing that is vulnerable to impact damage from these sources and provides a method to substantiate that the rule has been met for tire fragments. No specific requirements were established for the contiguous wing areas into which the access covers are installed because of the inherent ability of conventional aluminum wing skins to resist penetration by tire debris. AC 25.963–1 specifically notes, ''The access covers, however, need not be more impact resistant than the contiguous tank structure,'' highlighting the assumption that wing basic structures meet some higher standard.

However, in another event in 2000, on the Concorde airplane, an unanticipated failure mode occurred when tire debris impacted the fuel tank. The initial impact of the tire debris did not penetrate the fuel tank, but a pressure wave caused by the tire impact caused the fuel tank to rupture. Regulatory authorities subsequently required modifications to Concorde airplanes to add a means to retain fuel if the primary fuel retention means was damaged.

In order to maintain the level of safety envisioned by § 25.963(e), these special conditions establish a standard for resistance to potential tire debris impacts to the contiguous wing surfaces and require consideration of possible secondary effects of a tire impact, such as the induced pressure wave that was a factor in the Concorde accident. It takes into account that new construction methods and materials may not necessarily provide the resistance to debris impact that has historically been shown as adequate. These special conditions are based on the defined tire impact areas and tire fragment characteristics described in AC 25.963–1.

In addition, despite practical design considerations, some uncommon debris larger than that defined in paragraph (b) may cause a fuel leak within the defined area, so paragraph (c) of these special conditions also takes into consideration possible leakage paths. Fuel tank surfaces of typical transport airplanes have thick aluminum construction in the tire debris impact areas that is tolerant to tire debris larger than that defined in paragraph (b) of these special conditions. Consideration of leaks caused by larger tire fragments is needed to ensure that an adequate level of safety is provided.

**Note:** While § 25.963 includes consideration of uncontained engine debris, the effects of engine debris are not included in these special conditions because this hazard will be addressed on the 787 under the existing requirements of § 25.903(d). Section 25.903(d) requires minimizing the hazards from uncontained engine debris.

## Discussion of Comments

Notice of Proposed Special Conditions No. 25–07–04–SC for the 787 was published in the **Federal Register** on June 11, 2007 (72 FR 32023). One comment was received from Airbus. Airbus referred to the discussion of the Concorde airplane, in which we said, ''The skin on the unique delta wing design of this supersonic airplane is made of titanium, with a thickness much less than that of the skin on a conventional subsonic airplane.'' Airbus informed us that the wing skin of the Concorde is made of aluminum rather than titanium. We thank the commenter for that information. The difference in material on the Concorde does not affect these special conditions, however, and the commenter did not request a change. These special conditions are adopted as proposed.

## Applicability

As discussed above, these special conditions are applicable to the 787. Should Boeing apply at a later date for a change to the type certificate to include another model on the same type certificate incorporating the same novel or unusual design features, these special conditions would apply to that model as well.

## Conclusion

This action affects only certain novel or unusual design features of the 787. 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 the Boeing Model 787–8 airplane.

## Debris Impacts to Fuel Tanks

(a) Impacts by tire debris to any fuel tank or fuel system component located within 30 degrees to either side of wheel rotational planes may not result in penetration or otherwise induce fuel tank deformation, rupture (for example, through propagation of pressure waves), or cracking sufficient to allow a hazardous fuel leak. A hazardous fuel leak results if debris impact to a fuel tank surface causes—

1. A running leak,

2. A dripping leak, or

3. A leak that, 15 minutes after wiping dry, results in a wetted airplane surface exceeding 6 inches in length or diameter.

The leak must be evaluated under maximum fuel head pressure.

(b) Compliance with paragraph (a) must be shown by analysis or tests assuming all of the following.

1. The tire debris fragment size is 1 percent of the tire mass.

2. The tire debris fragment is propelled at a tangential speed that could be attained by a tire tread at the airplane flight manual airplane rotational speed ($V_R$ at maximum gross weight).

3. The tire debris fragment load is distributed over an area on the fuel tank surface equal to 1½ percent of the total tire tread area.

(c) Fuel leaks caused by impact from tire debris larger than that specified in paragraph (b), from any portion of a fuel tank located within the tire debris impact area, may not result in hazardous quantities of fuel entering any of the following areas of the airplane.

1. Engine inlet,

2. APU inlet, or

3. Cabin air inlet.

This must be shown by test or analysis, or a combination of both, for each approved engine forward thrust condition and each approved reverse thrust condition.

Issued in Renton, Washington, on September 14, 2007.

**Ali Bahrami,**

*Manager, Transport Airplane Directorate, Aircraft Certification Service.*

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