airplane vertical descent velocities up to 30 ft/sec.

The FAA is proposing this special condition to maintain the level of safety envisioned in the existing airworthiness standards under foreseeable survivable impact events.

Discussion of Proposed Special Condition

In order to provide the same level of safety as exists with conventional airplane construction, Boeing must demonstrate that the 787 has sufficient crashworthiness capabilities under foreseeable survivable impact events. To demonstrate this, Boeing would have to evaluate the impact response characteristics of the 787 to ensure that its crashworthiness characteristics are not significantly different from those of a similarly sized airplane fabricated from traditionally used metals. If the evaluation shows that the 787 impact response characteristics are significantly different, Boeing would have to make design changes to bring the different impact response characteristics in line with those of a similarly sized metal construction airplane, or incorporate mitigating design features.

Factors in crash survivability are retention of items of mass, maintenance of occupant emergency egress paths, maintenance of acceptable acceleration and loads experienced by the occupants, and maintenance of a survivable volume. In reviewing available data from accidents, tests simulating crash conditions, and analytical modeling of a range of crash conditions, the FAA has concluded that the airplane performance should be evaluated over a range of airplane level vertical impact velocities up to 30 ft/sec.

If the 787 impact characteristics differ significantly from those of a previously certificated wide body transport, this would result in a need to meet load factors higher than those defined in 14 CFR 25.561 in order to maintain the same level of safety for the occupants, in terms of retention of items of mass. In the cases of acceleration and loads experienced by the occupants, means would have to be incorporated to reduce load levels experienced by those occupants to the injury criteria levels of § 25.562, or load levels of a previously certificated comparable airplane, in order to maintain the same level of safety for the occupants.

Applicability

As discussed above, these proposed special conditions are applicable to the 787 airplane. 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 features, these proposed special conditions would apply to that model as well under the provisions of § 21.101.

Conclusion

This action affects only certain novel or unusual design features of the 787 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 Proposed Special Conditions

Accordingly, the Administrator of the Federal Aviation Administration (FAA) proposes the following special conditions as part of the type certification basis for the Boeing Model 787–8 airplane.

The Boeing Model 787–8 must provide an equivalent level of occupant safety and survivability to that provided by previously certificated wide-body transports of similar size under foreseeable survivable impact events for the following four criteria. In order to demonstrate an equivalent level of occupant safety and survivability, the applicant must demonstrate that the Model 787–8 meets the following criteria for a range of airplane vertical descent velocities up to 30 ft/sec.

1. Retention of items of mass. The occupants, i.e., passengers, flight attendants and flightcrew, must be protected during the impact event from release of seats, overhead bins, and other items of mass due to the impact loads and resultant structural deformation of the supporting airframe and floor structures. The applicant must show that loads due to the impact event and resultant structural deformation of the supporting airframe and floor structure at the interface of the airplane structure to seats, overhead bins, and other items of mass are comparable to those of previously certificated wide-body transports of similar size for the range of descent velocities stated above. The attachments of these items need not be designed for static emergency landing loads in excess of those defined in § 25.561 if impact response characteristics of the Boeing Model 787–8 yield load factors at the attach points that are comparable to those for a previously certificated wide-body transport category airplane.

2. Maintenance of acceptable acceleration and loads experienced by the occupants. The applicant must show that the impact response characteristics of the 787, specifically the vertical acceleration levels experienced at the seat/floor interface and loads experienced by the occupants during the impact events, are consistent with those found in § 25.562(b) or with levels expected for a previously certificated wide-body transport category airplane for the conditions stated above.

3. Maintenance of a survivable volume. For the conditions stated above, the applicant must show that all areas of the airplane occupied for takeoff and landing provide a survivable volume comparable to that of previously certificated wide-body transports of similar size during and after the impact event. This means that structural deformation will not result in infringement of the occupants' normal living space so that passenger survivability will not be significantly affected.

4. Maintenance of occupant emergency egress paths. The evacuation of occupants must be comparable to that from a previously certificated wide-body transport of similar size. To show this, the applicant must show that the suitability of the egress paths, as determined following the vertical impact events, is comparable to the suitability of the egress paths of a comparable, certificated wide-body transport, as determined following the same vertical impact events.

Issued in Renton, Washington, on May 31, 2007.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E7–11153 Filed 6–8–07; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM367 Special Conditions No. 25–07–04–SC]

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

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed special conditions.

SUMMARY: This notice proposes special conditions 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 design features include wing fuel tanks constructed of carbon fiber composite materials. These proposed 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. Additional special conditions will be issued for other novel or unusual design features of the Boeing Model 787–8 airplanes.

DATES: Comments must be received on or before July 26, 2007.

ADDRESSES: Comments on this proposal may be mailed in duplicate to: Federal Aviation Administration, Transport Airplane Directorate, *Attention:* Rules Docket (ANM–113), Docket No. NM367, 1601 Lind Avenue, SW., Renton, Washington 98057–3356; or delivered in duplicate to the Transport Airplane Directorate at the above address. All comments must be marked Docket No. NM367. Comments may be inspected in the Rules Docket weekdays, except Federal holidays, between 7:30 a.m. and 4 p.m.

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:

Comments Invited

The FAA invites interested persons to participate in this rulemaking by submitting 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 ask that you send us two copies of written comments.

We will file in the docket all comments we receive as well as a report summarizing each substantive public contact with FAA personnel concerning these proposed special conditions. The docket is available for public inspection before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this notice between 7:30 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

We will consider all comments we receive on or before the closing date for comments. We will consider comments filed late if it is possible to do so without incurring expense or delay. We may change the proposed special conditions based on comments we receive.

If you want the FAA to acknowledge receipt of your comments on this proposal, include with your comments a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it back to you.

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 14 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 part 36. In addition, the FAA must issue a finding of regulatory adequacy pursuant to section 611 of Public Law 92–574, the "Noise Control Act of 1972."

Special conditions, as defined in § 11.19, are issued in accordance with § 11.38 and become part of the type certification basis in accordance with § 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 the provisions of § 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 proposed 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 construction to resist these hazards has not been established, and thus there are no current airworthiness standards specifically addressing this hazard for all the exposed wing surfaces.

The FAA is proposing these special conditions to maintain the level of safety envisioned in the existing airworthiness standards by proposing 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 title 14 CFR part 121 required operators to modify their existing fleets of airplanes with impact resistant access panels. The amendment only addressed fuel tank access covers 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 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. 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 14 CFR 25.963(e), these special conditions propose 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 will not necessarily yield debris resistance that has historically been shown as adequate. The proposed standard is based on the defined tire impact areas and tire fragment characteristics described in AC 25.963–1.

In addition, despite practical design considerations, some exceptional debris larger than that defined in paragraph (b) may cause a fuel leak within the defined area, so paragraph (c) of these proposed 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.

Applicability

As discussed above, these proposed 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 incorporating the same novel or unusual design features, these proposed special conditions would apply to that model as well under the provisions of § 21.101.

Conclusion

This action affects only certain novel or unusual design features of the 787. It is not a rule of general applicability, and it affects only the applicant that applied to the FAA for approval of these features on the airplane.

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 Proposed Special Conditions

Accordingly, the Administrator of the Federal Aviation Administration (FAA) proposes the following special conditions 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.

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 (VR 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 May 31, 2007.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E7–11150 Filed 6–8–07; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2007–28372; Directorate Identifier 2007–NM–080–AD]

RIN 2120–AA64

Airworthiness Directives; Airbus Model A300F4–605R and A300F4–622R Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for the products listed above. This proposed AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

Further to cases of parking brake loss at the gate, a pressure switch system had been introduced on some A300–600 aircraft. The aim of this modification was to recover pedals braking authority if parking brake is not efficient, without having to set the parking brake handle to OFF.