

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:

(a) A visual indication in the flight deck within one minute after the start of a fire.

(b) An aural warning in the OFAR compartment.

(c) A warning in the main passenger cabin. This warning must be readily detectable by a flight attendant, taking into consideration the positioning of flight attendants throughout the main passenger compartment during various phases of flight.

³ *Liner*

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 25-93, 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 ft³ in interior volume but less than 57 ft³ in interior volume. For all enclosed stowage compartments equal to or greater than 57 ft³ in interior volume but less than or equal to 200 ft³, a liner must be provided that meets the requirements of § 25.855 for a Class B cargo compartment.

⁴ *Fire Location Detector*

If an OFAR compartment has enclosed stowage compartments exceeding 25 ft³ interior volume that are located separately from the other stowage compartments (for example, away from one central location, such as the entry to the OFAR compartment or a common area within the OFAR compartment) that compartment would require additional fire protection features and/or devices to assist the firefighter in determining the location of a fire.

Issued in Renton, Washington, on May 3, 2011.

KC Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM455; Notice No. 25-11-12-SC]

Special Conditions: Boeing, Model 747-8 Series Airplanes; Door 1 Extendable Length Escape Slide

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed special conditions.

SUMMARY: This action proposes special conditions for the Boeing Model 747-8 airplane. This airplane will have a novel or unusual design feature(s) associated with an extendable length escape slide. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. 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. **DATES:** We must receive your comments by May 31, 2011.

ADDRESSES: You must mail two copies of your comments to: Federal Aviation Administration, Transport Airplane Directorate, Attn: Rules Docket (ANM-113), Docket No. NM455, 1601 Lind Avenue, SW., Renton, Washington, 98057-3356. You may deliver two copies to the Transport Airplane Directorate at the above address. You must mark your comments: Docket No. NM455. You can inspect comments in the Rules Docket weekdays, except Federal holidays, between 7:30 a.m. and 4 p.m.

FOR FURTHER INFORMATION CONTACT: Jayson Claar, FAA, Airframe and Cabin Safety Branch, ANM-115, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington, 98057-3356; telephone (425) 227-2194; facsimile (425) 227-1232.

SUPPLEMENTARY INFORMATION:

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 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 special conditions. You can inspect the docket 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 preamble 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 these special conditions based on the comments we receive.

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

Background

On November 4, 2005, The Boeing Company applied for an amendment to Type Certificate Number A20WE to include the Model 747-8 series passenger airplane. The Model 747-8 is a derivative of the 747-400. The Model 747-8 is a four-engine jet transport airplane that will have a maximum takeoff weight of 975,000 pounds, new General Electric GENx-2B67 engines, and the capacity to carry 605 passengers.

Type Certification Basis

Under the provisions of Title 14, Code of Federal Regulations (14 CFR) 21.17, Boeing must show that the Model 747-8 (hereafter referred as 747-8) meets the applicable provisions of part 25, as amended by Amendments 25-1 through 25-120 plus Amendment 25-127 for § 25.765(a), except for earlier amendments as agreed upon by the FAA. These regulations will be incorporated into Type Certificate No. A20WE after type certification approval of the 747-8.

In addition, the certification basis includes other regulations, special conditions, and exemptions that are not relevant to these proposed special conditions. Type Certificate No. A20WE will be updated to include a complete description of the certification basis for these airplanes.

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 747-8 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 the model be amended later to include any other model or series that incorporates the same design feature, or should any other model or series already included on the same type certificate be modified to incorporate the same or similar novel or unusual design feature, the special conditions would also apply to other model or series under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the 747–8 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.

Special conditions, as defined in § 11.19, are issued under § 11.38, and become part of the type certification basis under § 21.101.

Novel or Unusual Design Features

The Boeing Model 747–8 will incorporate the following novel or unusual design features: The 747–8 design offers seating capacity on two separate decks, the main deck with a maximum passenger capacity of 495 and the upper deck with a maximum passenger capacity of 110. Section 25.810(a)(1)(iii) requires that after full deployment the emergency escape system assist means must be long enough so that the lower end is self-supporting on the ground and provides safe evacuation of occupants to the ground after collapse of one or more legs of the landing gear. Typically, airplanes have fixed-length slides that meet the above requirements. However, it was not possible to use fixed-length slides for the 747–8 Door 1 because of the difference between normal sill height and the high-sill height associated with collapse of some of the landing gear in an emergency. Some combinations of landing gear collapse could cause the airplane to tip back on its tail. The 747–8 Door 1 escape slide is an extendable length design to meet the gear collapse and tail tip conditions. The regulations do not adequately address the certification requirements for an extended length escape slide.

Discussion

The regulations governing the certification of the 747–8 do not adequately address the certification requirements for an extendable length escape slide. The only reference to extendable length escape slides in Technical Standard Order (TSO) C69c, Emergency Evacuation Slides, Ramps, Ramp/Slides, and Slide/Rafts, is in the

inflation time requirement section. The requirements of § 25.801(a)(1)(iii) for other airplanes has been addressed by a single length escape slide. However, for the 747–8 Door 1, it was not possible to have a single length escape slide because of the extreme difference in sill heights between normal sill height and high-sill height associated with collapse of some of the landing gear, and the additional case of the airplane tipping back on its tail. For Door 1, the normal sill height is approximately 187 inches, and the high-sill height is approximately 346 inches.

The proposed design of the extendable length escape system has an approximately 12 foot long extension packed at the toe end of the escape slide. During normal operation, the extension portion remains packed at the toe end. The airplane is equipped with an electronic sensor that evaluates the attitude of the airplane, and determines if the extendable portion is needed. When the extended length is needed, the system sends a signal to an electronic sign on the door to indicate to the flight attendant that the extendable length of the slide needs to be inflated. The extendable length inflation system is activated by pulling on a separate inflation handle located on the right side of the slide girt.

The Airbus A380 airplane has an extendable length slide and the FAA issued Special Conditions Number 25–323–SC to address the installation of the extendable length escape slide in that airplane. These previously issued special conditions provide a starting point for developing special conditions for the 747–8 airplane, which consider and evaluate the unique aspects of this airplane's design.

The extension is intended only for use at high-sill heights. A typical fixed-length slide operating at high-sill height does not satisfy all of the performance requirements of § 25.810, but its variations in performance are understood and largely predictable. Certain performance criteria are valid regardless of sill height, while other aspects of performance can be expected to decline at higher sill heights. With an extendable slide, there is a step change in configuration and potentially a change in performance. Therefore, special conditions are needed to ensure acceptable performance in the extended mode.

Section 25.810 specifies the basic performance requirements for escape slides, including wind testing, repeatability testing, and testing at adverse sill heights. Section 25.1309(a) requires systems to perform under foreseeable operating conditions, such

as extreme temperatures, and demonstrate that the system design is appropriate for its intended function. Standards for the equipment itself are in TSO–C69c and contribute to a satisfactory installation.

Typically, wind tests are only conducted on fixed-length slides at normal sill height. Since the regulations require that the escape slides have the capability of being deployed in 25-knot winds directed from the most critical angle, escape slides usually exceed 25 knot performance at other than the critical angle. The same is expected to be true of the slide in its extended mode, but some reduction in the required wind velocity is appropriate since the slide will be in an abnormal condition. Available data indicate that the capability of being deployed in 22-knot winds is appropriate to cover the slide in its extended mode at normal sill height. This corresponds to roughly 75% of the wind energy required for the slide in its normal attitude and will ensure that the slide can function in its extended mode at least as well as a fixed-length slide under similar abnormal conditions.

These special conditions also specify a rate for passenger evacuation that is consistent with that of fixed-length escape slides.

Applicability

As discussed above, these special conditions are applicable to the Boeing Model 747–8 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 feature, the special conditions would apply to that model as well under the provisions of § 21.101.

Certification of the Boeing Model 747–8 is currently scheduled for November 2011. The substance of these special conditions has been subject to the notice and public-comment procedure in several prior instances. Therefore, because a delay would significantly affect both the applicant's installation of the system and certification of the airplane, we are shortening the public-comment period to 20 days.

Conclusion

This action affects only certain novel or unusual design features of the Boeing Model 747–8 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 Federal Aviation Administration (FAA) proposes the following special conditions as part of the type certification basis for the Boeing Model 747-8 airplanes.

In addition to the provisions of 14 CFR part 25, the following special conditions are proposed:

1. The extendable escape slide must receive TSO-C69c or latest TSO authorization published at the time of TSO application for the Door 1 Slide.

2. In addition to the requirements of § 25.810(a)(1)(iii) for usability in conditions of landing gear collapse, the deployed escape slide in the extended mode must demonstrate an evacuation rate of 45 persons per minute per lane at the sill height corresponding to activation of the extension.

3. In lieu of the requirements of § 25.810(a)(1)(iv), the escape slide with the extendable section activated must be capable of being deployed in 22-knot winds directed from the critical angle, with the airplane on all its landing gear, with the assistance of one person on the ground. Two deployment scenarios must be addressed as follows:

(a) Extendable section is activated during the inflation time of the basic slide and,

(b) Extendable section is activated after the basic slide is completely inflated.

4. Pitch sensor tolerances and accuracy must be taken into account when demonstrating compliance with § 25.1309(a) for the escape slide in both extended and unextended modes.

5.(a) There must be a "slide extension" warning such that the cabin crew is immediately made aware of the need to deploy the extendable section of the slide. The ability to provide such a warning must be available for ten minutes after the airplane is immobilized on the ground.

(b) There must be a positive means for the cabin crew to determine that the extendable portion of the slide has been fully erected.

6. Whenever passengers are carried on the main deck of the airplane, there must be a cabin crewmember stationed on each side of the airplane located near each Door 1 Exit. This special condition must be included in the airplane flight manual as a limitation.

Issued in Renton, Washington, on May 3, 2011.

KC Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0088; Directorate Identifier 2010-CE-072-AD]

RIN 2120-AA64

Airworthiness Directives; Embraer—Embraer—Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model EMB-500 Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Supplemental notice of proposed rulemaking (NPRM); extension of the comment period.

SUMMARY: We are revising an earlier NPRM 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:

It has been found that moisture may accumulate and freeze, under certain conditions, in the gap between the AOA vane base assembly and the stationary ring of the sensor's body. If freezing occurs both AOA sensors may get stuck and the Stall Warning Protection System (SWPS) will be no longer effective without alerting. This may result in inadvertent aerodynamic stall and loss of controllability of the airplane.

The proposed AD would require actions that are intended to address the unsafe condition described in the MCAI.

DATES: We must receive comments on this proposed AD by June 24, 2011.

ADDRESSES: You may send comments by any of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- *Fax:* (202) 493-2251.
- *Mail:* U.S. Department of

Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

- *Hand Delivery:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room

W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact EMBRAER Empresa Brasileira de Aeronautica S.A., Phenom Maintenance Support, Av. Brig. Faria Lima, 2170, Sao Jose dos Campos—SP, CEP: 12227-901—PO Box: 36/2, Brasil; *telephone:* ++55 12 3927-5383; *fax:* ++55 12 3927-2619; *E-mail:* phenom.reliability@embraer.com.br; Internet: <http://www.embraer.com.br>.

You may review copies of the referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone (800) 647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Jim Rutherford, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; *telephone:* (816) 329-4165; *fax:* (816) 329-4090.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include "Docket No. FAA-2011-0088; Directorate Identifier 2010-CE-072-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.