Proposed Rules

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This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM403 Special Conditions No. 25–09–05–SC]

Special Conditions: Boeing Model 747–8/–8F Airplanes, Structural Design Requirements for Four-Post Main Landing Gear System

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed special conditions.

SUMMARY: This action proposes special conditions for the Boeing Model 747–8/–8F airplane. This airplane will have novel or unusual design features associated with a four-post main landing gear system. 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: Comments must be received on or before June 11, 2009.

ADDRESSES: Comments on this proposal may be mailed in duplicate to: Federal Aviation Administration, Transport Airplane Directorate, Attention: Rules Docket (ANM–113), Docket No. NM403, 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. NM403. 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: Mark Freisthler, FAA, Airframe & Cabin Safety Branch, ANM–115, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98057–3356; telephone (425) 227–1119; facsimile (425) 227–1149.

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 November 4, 2005, The Boeing Company, PO Box 3707, Seattle, WA 98124, applied for an amendment to Type Certificate Number A20WE to include the new Model 747–8 passenger airplane and the new Model 747–8F freighter airplane. The Model 747–8 and the Model 747–8F are derivatives of the 747–400 and the 747–400F, respectively. Both the Model 747–8 and the Model 747–8F are four-engine jet transport airplanes that will have a maximum takeoff weight of 970,000 pounds and new General Electric GEnx–2B67 engines. The Model 747–8 will have two flight crew and the capacity to carry 660 passengers. The Model 747–8F will have two flight crew and a zero passenger capacity, although Boeing has submitted a petition for exemption to allow the carriage of supernumeraries.

Type Certification Basis

Under the provisions of 14 CFR 21.101, Boeing must show that the Model 747–8 and 747–8F (hereafter referred as 747–8/–8F) meet the applicable provisions of part 25, as amended by Amendments 25–1 through 25–117, 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/–8F.

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 model 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/–8F because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

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

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, or should any other model 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 the other model under § 21.101.

Novel or Unusual Design Features

The Boeing Model 747–8/–8F airplane will incorporate the following novel or unusual design features: a four-post main landing gear system with two wing

main landing gears and two body main landing gears.

Discussion

The Boeing Model 747–8/–8F airplane will retain the landing gear arrangement which is unique to the 747 family of airplanes. The conventional arrangement for the main landing gear of transport category airplanes is two-underwing posts. The 747 was the first to introduce a four-post main landing gear arrangement, two underwing posts supplemented by two body posts. This arrangement was adopted to accommodate the then unprecedented increased weight and size of the Model 747 airplane.

Existing regulations are written to address the conventional landing gear configuration commonly found on transport category airplanes. This being the case, they are not appropriate to address the unique features of the Boeing 747 design. The increased number of posts alters the load distribution between the gear units during landing and ground handling conditions addressed by the regulations. This arrangement also loads the airframe differently than conventional landing gear designs. The FAA determined that, while the general conditions addressed by §§ 25.473 and 25.479 through 25.485 were still applicable, specific details contained in these regulations may not be directly relatable to the four-post arrangement.

In 1968 the FAA issued Special Condition A–4 to address the ground load requirements for the main landing gear system for Boeing Model 747–100 series airplanes. That special condition provided clarification on the applicability of §§ 25.473 and 25.479 through 25.485 to the Model 747 airplane. In 1971 Special Condition A–4 was amended to address Boeing Model 747 airplanes with the landing gear load evener system deleted or made inoperable.

The FAA has determined that Special Condition A–4 is applicable to the 747–8/8F series airplanes, provided that all the applicable part 25 regulations cited in Special Condition A–4 (recorded as an enclosure to FAA Letter WE–120/8110 (CT3488WE–D) to the Boeing Company, dated May 12, 1971) are upgraded to the latest amendment level (*i.e.*, 25–117). Furthermore, as several of these regulations have been updated or consolidated, and acceptable methods of compliance have been described for some of these regulations via advisory circular (AC), new special conditions are needed to clarify the applicable requirements. By updating these special conditions, we are ensuring that the Boeing design provides an equivalent level of safety to conventional landing gear meeting these regulations.

Applicability

As discussed above, these proposed special conditions are applicable to Boeing Model 747–8/–8F airplanes. 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 Boeing Model 747–8/–8F airplanes. 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/–8F airplanes.

The requirements of §§ 25.471, 25.473, and 25.479 through 25.485 apply as follows:

1. *General.* The general design criteria of § 25.471 are directly applicable. The basic landing gear dimensional data must be expanded to include the additional main landing gear units.

2. *Ground Load Conditions and Assumptions.* The criteria specified in § 25.473 are applicable for the design landing conditions except as noted in paragraph 6 of these special conditions.

3. *Landing Gear Arrangement.* The multiple oleo main landing gear configuration does not meet the ''conventional arrangement'' criterion of § 25.477, with respect to the application of paragraphs 4 through 7 of this special condition. Nevertheless, the landing impact design conditions must meet the intent of §§ 25.473 through 25.485.

4. *Level Landing Conditions.* The level landing criteria of § 25.479 are directly applicable. The four main landing gear units must be assumed to contact the ground with the airplane longitudinal axis in a horizontal attitude.

5. *Tail-Down Landing Conditions.* The airplane must be assumed to contact the ground in any tail down attitude between level and the maximum tail down attitude allowing clearance with the ground of each part of the airplane other than the main landing gear wheels. The airplane forward velocity component must be the most critical value from V_{L1} to 1.25 V_{L2} where V_{L1} and V_{L2} are defined in § 25.481. Each main landing gear unit must be designed for its most critical combination of vertical load and drag load. All other criteria in § 25.481, not superseded by the above criteria shall be directly applicable. The distribution of loads between the gear units for the effects of critical combinations of spin-up and spring-back loadings on the main landing gear units must be considered for the gear units and their supporting structure.

6. *One-Wheel Landing Conditions.* Unless the airplane and landing gears are designed for equivalent or more critical conditions, the airplane will be assumed to land in a level pitch attitude at design landing weight with a descent velocity of 7 fps at the maximum roll angle attainable within the geometric limitations of the airplane with the contact velocities and gear landing conditions of §§ 25.479(a), (c) and (d).

Note: This condition need not be coupled with either a 6 fps landing at maximum take off weight or a 12 fps reserve energy drop test.

7. *Side Load Conditions.* On the main landing gear units, side loads of 80% of the vertical reaction (on one side) acting inward and 60% of the vertical reaction (on the other side) acting outward must be combined with one-half of the maximum vertical ground reactions obtained in the level landing, tail-down landing, or rolled attitude landing conditions. These loads shall be assumed applied at the ground contact point and to be resisted by the inertia of the airplane. Drag loads may be assumed to be zero.

8. *Rebound Landing Condition.* The criteria of § 25.487 are directly applicable.

9. *Ground Handling Conditions.* The criteria of § 25.489 are directly applicable. The effects of runway crown as defined in § 25.511(b)(4) shall be considered in distributing the loads to the individual main landing gear units. The ground reactions must be distributed to the individual landing gear units in a rational or conservative manner, accounting for airframe flexibility and shock strut and tire stiffness.

10. *Take-Off Run.* The criteria of § 25.491 are directly applicable. Compliance may be shown in accordance with Advisory Circular (AC) 25.491–1.

11. *Braked Roll Conditions.* The criteria of §§ 25.493(b), (c), and (d) shall be directly applicable. The formula in § 25.493(e) is not applicable to the B747 due to the 4-post gear arrangement.

12. *Turning.* The criteria of § 25.495 are directly applicable.

13. *Nose-Wheel Yaw.* The criteria of § 25.499 are directly applicable. The criteria are interpreted to apply braking to all main landing gear wheels on one side of the airplane centerline.

14. *Pivoting.* The criteria of § 25.503 are applied individually to each wing main landing gear unit. In addition, all main landing gear units must be designed for the scrubbing and/or torsion loads induced by pivoting about the most critical point consistent with the available main gear braking on one side of the airplane and the available thrust and torque on the airplane. Maximum static engine thrust must be considered only on the engines on the opposite side of the airplane centerline from the pivot point.

15. *Reversed Braking.* The criteria of § 25.507 are directly applicable, except that the phrase ''three point'' is expanded to include ''five point.''

16. *Towing Loads.* The criteria of § 25.509 are directly applicable.

17. *Fatigue Evaluation of Landing Gear.* The criteria of § 25.573 at Amendment 25–0 are directly applicable to main landing gear units.

18. *Shock Absorption Tests.* The criteria of § 25.723 are directly applicable. Compliance may be shown in accordance with AC 25.723–1.

19. Substantiation of the design criteria must include a dynamic taxi and landing analysis.

Issued in Renton, Washington, on April 14, 2009.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E9–9529 Filed 4–24–09; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2009–1369; Directorate Identifier 2003–NE–03–AD]

RIN 2120–AA64

Airworthiness Directives; Rolls-Royce plc RB211 Trent 800 Series Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede an existing airworthiness directive (AD) for Rolls-Royce plc RB211 Trent 875–17, Trent 877–17, Trent 884–17, Trent 892–17, Trent 892B–17, and Trent 895–17 turbofan engines with high pressure (HP) compressor rotor rear stage 5 and 6 discs and cone shafts, part numbers (P/Ns) FK25230 and FK27899 installed. This proposed AD would require removing these parts at new reduced cycle limits. This proposed AD results from Rolls-Royce plc reducing the lives of these parts and changing the life calculating method to use ''Standard Duty Cycles'' with ''Multiple Flight Profile Monitoring'' and ''Flight Cycles'' with ''Heavy Flight Profile Monitoring''. We are proposing this AD to prevent stage 5 and 6 disc crack initiation and propagation that might lead to uncontained disc failure and damage to the airplane.

DATES: We must receive any comments on this proposed AD by June 26, 2009.

ADDRESSES: Use one of the following addresses to comment on this proposed AD.

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov* and follow the instructions for sending your comments electronically.
- *Mail:* Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12–140, Washington, DC 20590–0001.
- *Hand Delivery:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- *Fax:* (202) 493–2251.

FOR FURTHER INFORMATION CONTACT: James Lawrence, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803, e-mail *james.lawrence@faa.gov*; telephone (781) 238–7176; fax (781) 238–7199.

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–2009–1369; Directorate Identifier 2003–NE–03–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 based on 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 with FAA personnel concerning this proposed AD. Using the search function of the Web site, anyone can find and read the comments in any of our dockets, including, if provided, the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477–78).

Examining the AD Docket

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

Discussion

On July 23, 2003, we issued AD 2003–15–06, Amendment 39–13249 (68 FR 44610, July 30, 2003). That AD requires removal from service of HP compressor rotor rear stage 5 and 6 discs and cone shafts, P/Ns FK25230 and FK27899, before reaching newly reduced life limits. The Civil Aviation Authority (CAA), which is the airworthiness authority for the United Kingdom (U.K.), had notified the FAA that an unsafe condition may exist on Rolls-Royce plc RB211 Trent 875, Trent 877, Trent 884, Trent 892, Trent 892B, and Trent 895 turbofan engines. The CAA advised that three HP compressor rotor rear stage 5 and 6 discs and cone shafts, P/Ns FK25230 and FK27899, were found with crack indications in the stage 5 and 6 blade loading slots, during overhaul inspection. The manufacturer's analysis had not yet been able to identify the root cause of these cracks, or to fully explain the crack propagation rate. As a result of the analysis, a new lower life limit of 7,500 cycles-since-new had been assigned by the manufacturer to these HP compressor rotor rear stage 5 and 6 discs and cone shafts. This condition, if not corrected,