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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-0641; Directorate Identifier 2010-NM-130-AD; Amendment 39-16354; AD 2010-14-09]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Model 747-100B, 747-200B, 747-200F, 747-300, 747-400, 747-400F, and 747SP Series Airplanes Equipped with Rolls-Royce RB211-524 Series Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Model 747-100B, 747-200B, 747-200F, 747-300, 747-400, 747-400F, and 747SP series airplanes. This AD requires repetitive detailed and high frequency eddy current inspections of the forward and aft sides of the strut front spar chord for cracks and fractures at each strut location, and corrective actions if necessary. This AD results from reports of cracks and fractures in the nacelle strut front spar chord assembly. We are issuing this AD to detect and correct cracks and fractures of the nacelle strut front spar chord assembly. Fracture of the front spar chord assembly could lead to loss of the strut upper link load path and consequent fracture of the diagonal brace, which could result in in-flight separation of the strut and engine from the airplane.

DATES: This AD is effective July 19, 2010.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of July 19, 2010.

We must receive comments on this AD by August 16, 2010.

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 AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

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 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: Ken Paoletti, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6434; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Discussion

We have received a report that an operator found a cracked strut number 2 upper chord on a Rolls-Royce-powered airplane while accomplishing the actions specified in Boeing Service Bulletin 747-54-2213. The upper chord was 50 percent cracked and had to be replaced. The airplane had accumulated approximately 10,500 total flight cycles and 83,700 total flight hours.

In addition, two other operators reported finding two cracks on two Rolls-Royce RB211-powered airplanes on the strut number 1 upper chord. Both cracks were repaired and neither upper chord had to be replaced. The upper chords on these two airplanes had accumulated approximately 9,300 and 16,100 total flight cycles and 78,100 and 56,700 total flight hours respectively.

This condition, if not corrected, could result in the loss of the strut upper link load path. Continued operation without the strut upper link load path could result in the fracture of the diagonal brace, and subsequent separation of the strut and engine from the airplane during flight.

Relevant Service Information

We reviewed Boeing Alert Service Bulletin 747-54A2224, Revision 3, dated May 20, 2010. Revision 3 of this service bulletin was issued, among other reasons, to add Model 747-100B, 747-200B, 747-200F, 747-300, 747-400, 747-400F, and 747SP equipped with Rolls-Royce RB211-524 series engines. This service bulletin describes procedures for repetitive detailed inspections and high frequency eddy current (HFEC) inspections of the forward and aft sides of the strut front spar chord assemblies for cracks and fractures at each strut location, and corrective actions if necessary. Corrective actions include contacting Boeing for additional instructions if any crack or fracture is found, and repairing any cracks and fractures.

Other Related Rulemaking

On December 30, 2009, we issued AD 2010-01-10, Amendment 39-16168 (75 FR 3150, January 20, 2010), applicable to certain Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes equipped with General Electric (GE) CF6-45

or -50 series engines, or equipped with Pratt & Whitney JT9D-3 or -7 (excluding -70) series engines. That AD currently requires repetitive inspections to detect cracks and fractures of the strut front spar chord assembly (including the forward side) at each strut location, and repair if necessary. That AD requires a one-time inspection for cracking of the forward side of the front spar chord assembly on the inboard and outboard struts, installation of a cap skin doubler for certain airplanes, and repair if necessary. Certain actions provided in that AD terminate the repetitive inspections of the forward side of the strut front spar chord assembly; the inspections of the aft side assembly are not terminated and continue to be required. That AD referred to Boeing Alert Service Bulletin 747-54A2224, Revision 1, dated November 16, 2006, to address the identified unsafe condition on Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes equipped with GE CF6-45 or -50 series engines, or equipped with Pratt & Whitney JT9D-3 or -7 (excluding -70) series engines.

FAA's Determination and Requirements of This AD

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of these same type designs. This AD requires accomplishing the actions specified in the service information described previously, except as discussed under "Differences Between the AD and the Service Information."

Differences Between the AD and the Service Information

Boeing Alert Service Bulletin 747-54A2224, Revision 3, dated May 20, 2010, specifies to contact the manufacturer for instructions on how to repair certain conditions, but this AD would require repairing those conditions in one of the following ways:

- In accordance with a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

Interim Action

We consider this AD interim action. If final action is later identified, we might consider further rulemaking then.

FAA's Justification and Determination of the Effective Date

Continued operation without the strut upper link load path could result in the fracture of the diagonal brace, and subsequent separation of the strut and engine from the airplane during flight. Because of our requirement to promote safe flight of civil aircraft and thus, the critical need to assure structural integrity of the engine support structure and the short compliance time involved with this action, this AD must be issued immediately.

Because an unsafe condition exists that requires the immediate adoption of this AD, we find that notice and opportunity for prior public comment hereon are impracticable and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not provide you with notice and an opportunity to provide your comments before it becomes effective. However, we invite you to send any written data, views, or arguments about this AD. Send your comments to

an address listed under the ADDRESSES section. Include "Docket No. FAA-2010-0641; Directorate Identifier 2010-NM-130-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this 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 AD.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979), and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

You can find our regulatory evaluation and the estimated costs of compliance in the AD Docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

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

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new AD:



2010-14-09 The Boeing Company: Amendment 39-16354. Docket No. FAA-2010-0641; Directorate Identifier 2010-NM-130-AD.

Effective Date

(a) This airworthiness directive (AD) is effective July 19, 2010.

Affected ADs

(b) None.

Applicability

(c) This AD applies to The Boeing Company Model 747-100B, 747-200B, 747-200F, 747-300, 747-400, 747-400F, and 747SP series airplanes; certificated in any category; equipped with Rolls-Royce RB211-524 series engines; as identified in Boeing Alert Service Bulletin 747-54A2224, Revision 3, dated May 20, 2010.

Subject

(d) Air Transport Association (ATA) of America Code 54: Nacelles/Pylons.

Unsafe Condition

(e) This AD results from reports of cracks and fractures in the nacelle strut front spar chord assembly. The Federal Aviation Administration is issuing this AD to detect and correct cracks and fractures of the nacelle strut front spar chord assembly. Fracture of the front spar chord assembly could lead to loss of the strut upper link load path and consequent fracture of the diagonal brace, which could result in in-flight separation of the strut and engine from the airplane.

Compliance

(f) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

Inspections of the Forward and Aft Sides of the Strut Front Spar Chord Assemblies

(g) Before the accumulation of 8,000 total flight cycles, or within 90 days after the effective date of this AD, whichever occurs later: Perform a detailed inspection and a high frequency eddy current (HFEC) inspection for cracking or fracturing in the forward and aft sides of the strut front spar chord, in accordance with Parts 1 and 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2224, Revision 3, dated May 20, 2010. If no cracking or fracturing is found, repeat the inspections thereafter at intervals not to exceed 1,500 flight cycles.

Corrective Actions

(h) If any crack or fracture is found during any inspection required by this AD: Before further flight, repair the crack or fracture using a method approved in accordance with the procedures specified in paragraph (i) of this AD.

Alternative Methods of Compliance (AMOCs)

(i)(1) The Manager, Seattle ACO, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Ken Paoletti, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6434; fax (425) 917-6590. Information may be e-mailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office. The AMOC approval letter must specifically reference this AD.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

Material Incorporated by Reference

(j) You must use Boeing Alert Service Bulletin 747-54A2224, Revision 3, dated May 20, 2010, to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of this service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(4) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on June 21, 2010.

Ali Bahrami,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.