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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-0132; Directorate Identifier 2009-NM-096-AD; Amendment 39-16355; AD 2010-14-10]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Model 747-100, -200B, and -200F Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD), which applies to certain Model 747-100, 747-200B, and -200F series airplanes. That AD currently requires inspections to detect cracking in the upper row of fasteners holes of the skin lap joints in the fuselage lower lobe, and repair if necessary. This new AD reduces the maximum interval of the post-modification inspections. This AD results from reports of fatigue cracking on modified airplanes. We are issuing this AD to detect and correct fatigue cracking in the longitudinal lap joints of the fuselage lower lobe, which could lead to the rapid decompression of the airplane and the inability of the structure to carry fail-safe loads.

DATES: This AD is effective August 6, 2010.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of August 6, 2010.

ADDRESSES: 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 address for the Docket Office (telephone 800-647-5527) is the Document

Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Ivan Li, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6437; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that supersedes AD 94-17-01, Amendment 39-8996 (59 FR 41653, August 15, 1994). The existing AD applies to certain Model 747 airplanes. That NPRM was published in the Federal Register on February 25, 2010 (75 FR 8554). That NPRM proposed to continue to require inspections for cracking in the upper row of fasteners holes of the skin lap joints in the fuselage lower lobe, and repair, if necessary. The NPRM proposed to reduce the maximum interval of the post-modification inspections.

Comments

We gave the public the opportunity to participate in developing this AD. We considered the comments received from the sole commenter.

Request To Clarify Term in Paragraph (i)(2) of the NPRM

Boeing requests that we add a note below paragraph (i)(2) of the NPRM to clarify the term "remove" to mean "to trim out all three fastener rows of the overlapping skin common to the lap joint." Boeing states that the term "remove" is not specific enough in this context, and it is inconsistent with the terminology used in the structural repair manual and Boeing Alert Service Bulletin 747-53A2267, Revision 4, dated March 26, 2009.

We agree that clarification is necessary for the reasons provided by the commenter. We have added this information to paragraph (i)(2) of this final rule.

Request To Add an Exception Clause to Paragraph (k)(4) of the NPRM

Boeing requests that we add an exception clause to paragraph (k)(4) that states "AMOCs approved previously in accordance with AD 94-17-01 are approved as AMOCs for the corresponding provisions of this AD, with the exception of paragraphs (h) and (i) of this AD." Boeing states that the exception ensures that operators meet the intent of the requirement to lower the repetitive inspection intervals from 3,000 flight cycles to 1,000 flight cycles, as required by paragraphs (h) and (i) of this AD.

We agree with the request. We have revised paragraph (k)(4) of this final rule accordingly.

Request To Revise Paragraphs (g)(1), (g)(2), and (g)(3) of the NPRM

Boeing requests that we add "locations on" before the word "airplanes" in paragraphs (g)(1), (g)(2), and (g)(3) of the NPRM. Boeing states that the current phrasing in the NPRM does not allow an operator to differentiate inspection thresholds between lap joints with different installation times and types of modifications on the same airplane.

We agree with the request. We have revised paragraphs (g)(1), (g)(2), and (g)(3) of this final rule accordingly.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We also determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

Costs of Compliance

There are about 23 airplanes of the affected design in the worldwide fleet. The following table provides the estimated costs for U.S. operators to comply with this AD.

Estimated Costs

Action	Work hours	Average labor rate per hour	Parts	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
Inspection (required by AD 94-17-01)	244	\$85	\$0	\$20,740 per inspection cycle	7	\$145,180 per inspection cycle

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 Federal Aviation Administration (FAA) amends § 39.13 by removing Amendment 39-8996 (59 FR 41653, August 15, 1994) and by adding the following new airworthiness directive (AD):



2010-14-10 The Boeing Company: Amendment 39-16355. Docket No. FAA-2010-0132; Directorate Identifier 2009-NM-096-AD.

Effective Date

(a) This airworthiness directive (AD) is effective August 6, 2010.

Affected ADs

(b) This AD supersedes AD 94-17-01, Amendment 39-8996.

Applicability

(c) This AD applies to The Boeing Company Model 747-100, 747-200B, and 747-200F series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 747-53A2267, Revision 4, dated March 26, 2009.

Subject

(d) Air Transport Association (ATA) of America Code 53: Fuselage.

Unsafe Condition

(e) This AD results from reports of fatigue cracking. The Federal Aviation Administration is issuing this AD to detect and correct fatigue cracking in the fuselage lower lobe longitudinal lap joints, which could lead to the rapid decompression of the airplane and the inability of the structure to carry fail-safe loads.

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.

Restatement of Requirements of AD 94-17-01, With Revised Compliance Times for Post-Modification Inspection and Revised Service Information

Initial External High Frequency Eddy Current Inspection

(g) Perform an external high frequency eddy current inspection to detect cracks in the upper row of fasteners in the modified lap joints in accordance with Boeing Service Bulletin 747-53A2267, Revision 3, dated March 26, 1992; or Boeing Alert Service Bulletin 747-53A2267, Revision 4, dated March 26, 2009; at the time specified in paragraph (g)(1) or (g)(2) or (g)(3) of this AD, as applicable. As of the effective date of this AD, only Revision 4 may be used.

(1) For locations on airplanes on which the full modification required by AD 90-06-06, Amendment 39-6490, has been accomplished in accordance with Revision 2 of Boeing Service Bulletin 747-53A2267, dated March 29, 1990; or Revision 3, dated March 26, 1992; or Boeing Alert Service Bulletin 747-53A2267, Revision 4, dated March 26, 2009: Prior to the accumulation of 10,000 flight cycles after accomplishment of the full modification.

(2) For locations on airplanes on which the full modification required by AD 90-06-06 has been accomplished in accordance with Boeing Service Bulletin 747-53A2267, dated March 28, 1986; or Revision 1, dated September 25, 1986: Prior to the accumulation of 7,000 flight cycles after accomplishment of the full modification.

(3) For locations on airplanes on which the optional modification has been accomplished in accordance with Boeing Service Bulletin 747-53A2267, Revision 2, dated March 29, 1990, or Revision 3, dated March 26, 1992; or Boeing Alert Service Bulletin 747-53A2267, Revision 4, dated March 26, 2009: Prior to the accumulation of 7,000 flight cycles after accomplishment of the optional modification.

Repetitive External High Frequency Eddy Current Inspections

(h) If no cracking is detected during the inspection required by paragraph (g) of this AD, repeat the inspection required by paragraph (g) of this AD at the earlier of the times specified in paragraphs (h)(1) and (h)(2) of this AD, and thereafter at intervals not to exceed 1,000 flight cycles.

(1) Within 3,000 flight cycles after the last inspection required by paragraph (g) of this AD.

(2) Within 1,000 flight cycles after the last inspection required by paragraph (g) of this AD or 500 flight cycles after the effective date of this AD, whichever occurs later.

Repair

(i) If any cracking is detected during any inspection required by paragraph (g) of this AD, prior to further flight, repair in accordance with Section 53-30-03 of the Boeing 747 Structural Repair Manual (SRM); or Boeing Alert Service Bulletin 747-53A2267, Revision 4, dated March 26, 2009; except as required by paragraph (j) of this AD; and repeat the inspection required by paragraph (g) of this AD at the times specified in paragraph (i)(1) of this AD. As of the effective date of this AD, use only Boeing Alert Service Bulletin 747-53A2267, Revision 4, dated March 26, 2009.

(1) As of the effective date of this AD: If the repair specified in the Boeing 747 SRM does not include removing the lap joint and the upper row of countersunk fasteners, repeat the inspection required by paragraph (g) of this AD at the earlier of the times specified in paragraphs (i)(1)(i) and (i)(1)(ii) of this AD, and thereafter at intervals not to exceed 1,000 flight cycles.

(i) Within 3,000 flight cycles after the last inspection required by paragraph (g) of this AD.

(ii) Within 1,000 flight cycles after the last inspection required by paragraph (g) of this AD, or within 500 flight cycles after the effective date of this AD, whichever occurs later.

(2) If the repair specified in the Boeing 747 SRM includes removing the lap joint and the upper row of countersunk fasteners, such repair constitutes terminating action for the inspection requirements of this AD. To "remove" means to trim out all three fastener rows of the overlapping skin common to the lap joint.

Exception to the Service Bulletin

(j) If any cracking is found during any inspection required by this AD, and Boeing Alert Service Bulletin 747-53A2267, Revision 4, dated March 26, 2009, specifies contacting Boeing for appropriate action: Before further flight, repair the cracking using a method approved in accordance with the procedures specified in paragraph (k) of this AD. For a repair method to be approved by the

Manager, Seattle ACO, as required by this paragraph, the Manager's approval letter must specifically refer to this AD.

Alternative Methods of Compliance (AMOCs)

(k)(1) The Manager, Seattle Aircraft Certification Office, 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: Ivan Li, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6437; fax (425) 917-6590. Or, e-mail information 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.

(4) AMOCs approved previously in accordance with AD 94-17-01 are approved as AMOCs for the corresponding provisions of this AD, with the exception of paragraphs (h) and (i)(1) of this AD.

Material Incorporated by Reference

(1) You must use Boeing Alert Service Bulletin 747-53A2267, Revision 4, dated March 26, 2009, 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 23, 2010.

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