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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-2460; Directorate Identifier 2014-NM-163-AD; Amendment 39-18396; AD 2016-04-02]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are superseding Airworthiness Directive (AD) 2010-26-10, which applied to certain The Boeing Company Model 747-200C, -200F, -400, -400D, and -400F series airplanes. AD 2010-26-10 required repetitive inspections for cracking of the lap joints, modification of certain lap joints, and certain post-repair inspections of the lap joints. This new AD adds new repetitive post-modification inspections for cracking in the lap joints, and repair if necessary. This AD was prompted by an evaluation by the design approval holder (DAH) which indicated that certain lap joints are subject to widespread fatigue damage (WFD). We are issuing this AD to detect and correct fatigue cracking in certain lap joints, which could result in rapid depressurization and consequent reduced structural integrity of the airplane.

DATES: This AD is effective March 24, 2016.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of March 24, 2016.

ADDRESSES: For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-2460.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-2460; 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 (phone: 800-647-5527) is Docket 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: Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6428; fax: 425-917-6590; email: nathan.p.weigand@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2010-26-10, Amendment 39-16549 (75 FR 81427, December 28, 2010). AD 2010-26-10 applied to certain The Boeing Company Model 747-200C, -200F, -400, -400D, and -400F series airplanes. The NPRM published in the Federal Register on July 9, 2015 (80 FR 39394). The NPRM was prompted by an evaluation by the DAH that indicated that certain lap joints are subject to WFD. The NPRM proposed to continue to require repetitive inspections for cracking of the lap joints, modification of certain lap joints, and certain post-repair inspections of the lap joints. The NPRM also proposed to require new repetitive post-modification inspections for cracking in the lap joints, and repair if necessary. We are issuing this AD to detect and correct fatigue cracking in certain lap joints, which could result in rapid depressurization and consequent reduced structural integrity of the airplane.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM (80 FR 39394, July 9, 2015) and the FAA's response to each comment. United Airlines concurred with the NPRM.

Request To Correct Typographical Error

Boeing asked that we correct the reference in the "Related Service Information under 1 CFR part 51" from "... sections 41, 42, and 43" to "... sections 41, 42, and 46." Boeing stated that section 43 should be section 46, and noted that this is a typographical error.

We agree with the commenter's request for the reason provided. We have corrected this typographical error in "Related Service Information under 1 CFR part 51" accordingly.

Request To Clarify Certain Requirements

Boeing asked that we clarify paragraph (i)(1) of the proposed AD (80 FR 39394, July 9, 2015) by including "per Table 7" in that paragraph. Boeing also asked that we clarify paragraph (i)(3) of the proposed AD by including "per Table 10" in that paragraph.

We agree that clarification is necessary but we do not agree to change paragraphs (i)(1) and (i)(3) of this AD. Paragraph (i) of this AD specifies doing the applicable inspections in paragraphs (i)(1), (i)(2), or (i)(3) of this AD, in accordance with the Accomplishment Instructions of the referenced service information; and repeating the applicable inspections at the applicable times specified in

Tables 7, 8, 9, and 10 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014. In each of these tables the applicable groups are identified and match the groups identified in paragraphs (i)(1), (i)(2), and (i)(3) of this AD. We refer to the tables in paragraph 1.E., "Compliance," of service information for the applicable compliance times and not for how to accomplish the required actions. Therefore, we have not changed this AD in this regard.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD as proposed, with minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (80 FR 39394, July 9, 2015) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (80 FR 39394, July 9, 2015).

Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014. The service information describes procedures for body skin lap joint inspections and modifications in sections 41, 42, and 46. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

We estimate that this AD affects 120 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated Costs				
Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Pre-modification inspections [retained action from AD 2010-26-10, Amendment 39-16549 (75 FR 81427 , December 28, 2010)]	Up to 675 work-hours × \$85 per hour = up to \$57,375	\$0	Up to \$57,375 per inspection cycle	Up to \$6,885,000 per inspection cycle.
Modification [retained action from AD 2010-26-10, Amendment 39-16549 (75 FR 81427 , December 28, 2010)]	Up to 5,819 work-hours × \$85 per hour = up to \$494,615	0	Up to \$494,615	Up to \$59,353,800.
New proposed post-modification inspections	Up to 105 work-hours × \$85 per hour = up to \$8,925	0	Up to \$8,925 per inspection cycle	Up to \$1,071,000 per inspection cycle.

We have received no definitive data that would enable us to provide a cost estimate for the on-condition actions specified in 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

We have determined that 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),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

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 removing Airworthiness Directive (AD) 2010-26-10, Amendment 39-16549 (75 FR 81427, December 28, 2010), and adding the following new AD:



2016-04-02 The Boeing Company: Amendment 39-18396; Docket No. FAA-2015-2460; Directorate Identifier 2014-NM-163-AD.

(a) Effective Date

This AD is effective March 24, 2016.

(b) Affected ADs

This AD replaces AD 2010-26-10, Amendment 39-16549 (75 FR 81427, December 28, 2010).

(c) Applicability

This AD applies to The Boeing Company Model 747-200C, -200F, -400, -400D, and -400F series airplanes; certificated in any category; as identified in Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by an evaluation by the design approval holder indicating that certain lap joints are subject to widespread fatigue damage. We are issuing this AD to detect and correct fatigue cracking in certain lap joints, which could result in rapid depressurization and consequent reduced structural integrity of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Repetitive Lap Joint Inspections

At the applicable time specified in Table 1 and Table 3 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014, except as required by paragraph (j)(1) of this AD: Do eddy current inspections for cracks in the skin of the lap joints, and do all applicable repairs, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014, except as required by paragraph (j)(2) of this AD. Do all applicable repairs before further flight. Repeat the applicable inspections thereafter at intervals not to exceed those specified in Table 1 and Table 3 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014.

(h) Lap Joint Modification

At the applicable time specified in Tables 2, 4, 5, and 6 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014, except as required by paragraph (j)(1) of this AD: Modify the applicable lap joints, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014, except as required by paragraph (j)(2) of this AD. Accomplishment of the modification required by this paragraph terminates the repetitive inspections required by paragraph (g) of this AD for the length of the modified lap joint.

(i) Lap Joint Post-Modification Inspections

At the applicable time specified in Tables 7, 8, 9, and 10 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014, except as required by paragraph (j)(1) of this AD: Do the applicable inspections specified in paragraph (i)(1), (i)(2), or (i)(3) of this AD, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014. Repeat the applicable inspections thereafter at the applicable times specified in Tables 7, 8, 9, and 10 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014. If any crack is found during any inspection, repair before further flight using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(1) For airplanes identified as Groups 2 through 5 and 8 through 10 in Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014: Internal detailed and surface high frequency eddy current (HFEC) inspections for any crack in the skin or internal doubler.

(2) For airplanes identified as Groups 6, 11, and 19 in Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014: External detailed and low frequency eddy current inspections of the upper and lower skin panels for cracking, external detailed and HFEC inspections of the doubler for cracking, and internal detailed and HFEC inspections of the upper and lower skin panels for cracking (for airplanes with a stringer 6 lap joint modification installed between STA 340 and STA 400 as specified in Boeing Service Bulletin 747-53-2272); or internal detailed and surface HFEC inspections for any crack in the skin or internal doubler (for airplanes with lap joints modified as specified in Boeing Alert Service Bulletin 747-53A2499.)

(3) For airplanes identified as Groups 1, 7, and 12 through 18 in Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014: Internal detailed and surface HFEC inspections for any crack in the skin or internal doubler.

(j) Exceptions to Service Bulletin Procedures

(1) Where Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014, specifies a compliance time "after the Revision 3 date of this service bulletin," this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) Where Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014, specifies to contact Boeing for repair instructions: Before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(k) Credit for Previous Actions

Actions done before the effective date of this AD using the service information identified in paragraph (k)(1) or (k)(2) of this AD are acceptable for compliance with the corresponding requirements of paragraphs (g) and (h) of this AD.

(1) Boeing Alert Service Bulletin 747-53A2499, Revision 1, dated October 30, 2008, which is not incorporated by reference in this AD.

(2) Boeing Alert Service Bulletin 747-53A2499, Revision 2, dated August 12, 2010, which was incorporated by reference in AD 2010-26-10, Amendment 39-16549 (75 FR 81427, December 28, 2010).

(l) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (m)(1) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration 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. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane and the approval must specifically refer to this AD.

(4) AMOCs approved for AD 2010-26-10, Amendment 39-16549 (75 FR 81427, December 28, 2010), are approved as AMOCs for the corresponding provisions of paragraphs (g) and (h) this AD.

(m) Related Information

(1) For more information about this AD, contact Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6428; fax: 425-917-6590; email: nathan.p.weigand@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (n)(3) and (n)(4) of this AD.

(n) Material Incorporated by Reference

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

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Service Bulletin 747-53A2499, Revision 3, dated July 15, 2014.

(ii) Reserved.

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

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

(5) You may view this 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/cfr/ibr-locations.html>.

Issued in Renton, Washington, on February 7, 2016.
Michael Kaszycki,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.