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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2014-0283; Directorate Identifier 2012-NM-183-AD; Amendment 39-17980; AD 2014-20-07]

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) 2010-03-05 for all the Boeing Company Model 747-200C and -200F series airplanes. AD 2010-03-05 required, for the upper chords of the upper deck floor beam of section 41, an inspection for cracking of certain fastener holes, and corrective action if necessary; and repetitive replacements of the upper chords, straps (or angles), and radius fillers of certain upper deck floor beams and, for any replacement that is done, inspections for cracking, and corrective actions if necessary. This new AD adds repetitive inspections of the upper chords of the upper deck floor beam of Section 42, repetitive replacements of the upper chords, post-replacement inspections, and corrective actions if necessary. This new AD also adds post-replacement inspections for section 41 and reduces certain compliance times. This AD was prompted by a determination that the upper deck floor beams are subject to widespread fatigue damage (WFD), the existing inspection program is not sufficient to maintain an acceptable level of safety, and the upper chords of the upper deck floor beam of section 42 are subject to the unsafe condition. We are issuing this AD to detect and correct cracking of the upper chords and straps (or angles) of the floor beams, which could lead to failure of the floor beams and consequent loss of controllability, rapid decompression, and loss of structural integrity of the airplane.

DATES: This AD is effective November 7, 2014.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of November 7, 2014.

ADDRESSES: 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>. 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.

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-2014-0283; 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: Roger Caldwell, Aerospace Engineer, Technical Operations Center, ANM-100D, FAA, Denver Aircraft Certification Office (ACO), 26805 East 68th Avenue, Room 214, Denver, CO 80249; phone: 303-342-1086; fax: 303-342-1088; email: roger.caldwell@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2010-03-05, Amendment 39-16188 (75 FR 5692, February 4, 2010). AD 2010-03-05 applied to all The Boeing Company Model 747-200C and -200F series airplanes. The NPRM published in the Federal Register on May 28, 2014 (79 FR 30486). The NPRM was prompted by a determination that the upper deck floor beams are subject to WFD, the existing inspection program is not sufficient to maintain an acceptable level of safety, and the upper chords of the upper deck floor beams in section 42 are subject to the identified unsafe condition. The NPRM proposed to add post-replacement inspections for section 41 and reduce certain compliance times. The NPRM also proposed to add repetitive inspections of the upper chords of the upper deck floor beams in section 42, repetitive replacements of the upper chords, post-replacement inspections, and corrective action if necessary. We are issuing this AD to detect and correct cracking of the upper chords and straps (or angles) of the floor beams, which could lead to failure of the floor beams and consequent loss of controllability, rapid decompression, and loss of structural integrity of the airplane.

Comments

We gave the public the opportunity to participate in developing this AD. We have considered the comment received. Boeing stated that it concurs with the contents of the NPRM (79 FR 30486, May 28, 2014).

Conclusion

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

- Are consistent with the intent that was proposed in the NPRM (79 FR 30486, May 28, 2014) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (79 FR 30486, May 28, 2014).

Costs of Compliance

We estimate that this AD affects 25 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
Retained inspection and replacement (AD 2010-03-05, Amendment 39-16188 (75 FR 5692 , February 4, 2010))	663 work-hours × \$85 per hour = \$56,355	\$0	\$56,355 per inspection/replacement cycle	\$1,408,875 per inspection/replacement cycle.
New post-replacement inspections—section 41	Up to 525 work-hours × \$85 per hour = \$44,625 ¹	\$0	\$44,625	Up to \$1,115,625.
New inspections, replacement, and post-replacement inspections—section 42	Up to 525 work-hours × \$85 per hour = \$44,625 ¹	Manufacturer has not provided cost of parts	\$44,625	Up to \$1,115,625.

¹Includes time to manufacture parts.

We have received no definitive data that would enable us to provide cost estimates 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) 2010-03-05, Amendment 39-16188 (75 FR 5692, February 4, 2010), and adding the following new AD:



2014-20-07 The Boeing Company: Amendment 39-17980; Docket No. FAA-2014-0283; Directorate Identifier 2012-NM-183-AD.

(a) Effective Date

This AD is effective November 7, 2014.

(b) Affected ADs

This AD replaces AD 2010-03-05, Amendment 39-16188 (75 FR 5692, February 4, 2010).

(c) Applicability

This AD applies to all The Boeing Company Model 747-200C and -200F series airplanes, certificated in any category.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a determination that the upper deck floor beams are subject to widespread fatigue damage (WFD), the existing inspection program is not sufficient to maintain an acceptable level of safety, and upper chords of the upper deck floor beam of section 42 are subject to the unsafe condition. We are issuing this AD to detect and correct cracking of the upper chords and straps (or angles) of the floor beams, which could lead to failure of the floor beams and consequent loss of controllability, rapid decompression, and loss of structural integrity of the airplane.

(f) Compliance

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

(g) Inspection and Replacement for the Upper Chords of the Upper Deck Floor Beam of Section 41

At the applicable time specified in Table 1 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012: At stations (STA) 340 through STA 440, STA 500, and STA 520, do an open-hole high frequency eddy current (HFEC) inspection at all accessed fastener holes to detect cracking; and install new upper deck floor beam upper chords, straps, angles, and radius fillers; in accordance with Part 2 and Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012.

(h) Post-Replacement Inspections and Replacements for the Upper Chords of the Upper Deck Floor Beam of Section 41

At the applicable time specified in Table 2 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012; or within 1,500 flight cycles after March 11, 2010 (the effective date of AD 2010-03-05, Amendment 39-16188 (75 FR 5692, February 4, 2010)); whichever occurs later: Do detailed and HFEC inspections to detect cracking of the replaced upper deck floor beam chords, the floor panel attachment holes, and the permanent fastener locations of the replaced upper deck floor beam chords, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012. If no cracking is found, do the actions specified in paragraphs (h)(1) and (h)(2) of this AD.

(1) Do the detailed and HFEC inspections of the replaced upper deck floor beam chords within 3,000 flight cycles after the most recent inspection, or within 300 flight cycles after the effective date of this AD, whichever occurs later, and repeat thereafter at the applicable time specified in Table 2 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012.

(2) Do the open-hole HFEC inspection and chord replacement required by paragraph (g) of this AD at the applicable time specified in Table 2 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012, or within 240 flight cycles after the effective date of this AD, whichever occurs later. Repeat the inspections and replacement specified in paragraph (h) of this AD at the applicable time specified in Table 2 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012.

(i) Inspection and Replacement for the Upper Chords of the Upper Deck Floor Beam of Section 42

At the applicable time specified in Tables 3 and 4 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012, except as required by paragraph (l) of this AD: Do the actions specified in paragraph (i)(1) or (i)(2) of this AD as applicable.

(1) At STA 540 through STA 740 for Group 1 airplanes identified in Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012: Do an open-hole HFEC inspection to detect cracking, and install new upper deck floor beam upper chord replacements, in accordance with Part 7 and Part 8 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012.

(2) At STA 540 through STA 780 for Group 2 airplanes identified in Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012: Do an open-hole HFEC inspection to detect cracking, and install new upper deck floor beam upper chord replacements, in accordance with Part 7 and Part 8 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012.

(j) Post-Replacement Inspections and Replacement for the Upper Chords of the Upper Deck Floor Beam of Section 42

At the applicable time specified in Table 5 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012; or within 1,500 flight cycles after March 11, 2010 (the effective date of AD 2010-03-05, Amendment 39-16188 (75 FR 5692, February 4, 2010)); whichever occurs later: Do HFEC inspections to detect cracking of the replaced upper deck floor beam chords, in accordance with Part 9 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012. If no crack is found, do the actions specified in paragraphs (j)(1) and (j)(2) of this AD.

(1) Repeat the HFEC inspections of the replaced upper deck floor beam chords thereafter at the applicable time specified Table 5 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012.

(2) Do the open-hole HFEC inspection and chord replacement required by paragraph (i) of this AD at the applicable time specified in Table 5 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012. Repeat the inspections and replacement, as specified in paragraph (j) of this AD, at the applicable time specified in Table 5 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012.

(k) Corrective Actions

If any cracking is found during any inspection required by this AD, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (o) of this AD.

(l) Exception to Service Information Specifications

Where Boeing Alert Service Bulletin 747-53A2696, Revision 1, dated April 12, 2012, specifies a compliance time "after the revision 1 date on this service bulletin," this AD requires compliance within the specified compliance time "after the effective date of this AD."

(m) Credit for Previous Actions

This paragraph provides credit for the installation of floor beam replacements required by this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 747-53A2696, dated October 16, 2008. (This service bulletin was incorporated by reference in AD 2010-03-05, Amendment 39-16188 (75 FR 5692, February 4, 2010)).

(n) Special Flight Permit

Special flight permits, as described in Section 21.197 and Section 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199), are not allowed.

(o) 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 persons identified in paragraph (p)(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 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.

(p) Related Information

(1) For more information about this AD, contact Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, Washington 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 (q)(3) and (q)(4) of this AD.

(q) 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 747-53A2696, Revision 1, dated April 12, 2012.

(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 September 20, 2014.

Michael Kaszycki,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.