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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2009-0608; Directorate Identifier 2008-NM-215-AD; Amendment 39-16188; AD 2010-03-05]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Model 747-200C and -200F Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all Model 747-200C and -200F series airplanes. This AD requires a high frequency eddy current (HFEC) inspection for cracks of certain fastener holes, and corrective action if necessary. This AD also requires 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, detailed and open-hole HFEC inspections for cracks of the modified upper deck floor beams, and corrective actions if necessary. This AD results from a report from the manufacturer that the accomplishment of certain existing inspections, repairs, and modifications is not adequate to ensure the structural integrity of the affected 7075 series aluminum alloy upper deck floor beam upper chords on airplanes that have exceeded certain thresholds. We are issuing this AD to prevent 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 March 11, 2010.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of March 11, 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

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to all Model 747-200C and -200F series airplanes. That NPRM was published in the Federal Register on July 6, 2009 (74 FR 31894). That NPRM proposed to require a high frequency eddy current inspection for cracks of certain fastener holes, and corrective action if necessary. That NPRM also proposed to require 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, detailed and open-hole HFEC inspections for cracks of the modified upper deck floor beams, and corrective actions if necessary.

Comments

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

Support for the NPRM

One commenter, Boeing, agrees with the contents of the NPRM.

Request To Clarify Compliance Time of Modification

One commenter, Northwest Airlines (NWA), requests that we clarify whether the modification that is mandated by paragraph (g) of AD 2005-07-21, Amendment 39-14046 (70 FR 18277, April 11, 2005), is required during the accomplishment of the initial 15,000-flight-cycle post-upper chord replacement inspection proposed by the NPRM. NWA notes that the NPRM would require replacing the upper deck floor beam upper chords before the accumulation of 21,000 total flight cycles, or within 1,500 flight cycles after the effective date of the AD, whichever is later. NWA also states that the proposed rule would mandate inspecting the upper deck floor beams within 15,000 flight cycles after replacement of the upper chords. NWA notes that the inspections are to be completed in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2429, Revision 2, dated October 16, 2008; and Boeing Alert Service Bulletin 747-53A2439, Revision 2, dated July 17, 2008. NWA notes that inspections per Boeing Alert Service Bulletins 747-53A2429 and 747-53A2439 were previously mandated. NWA points out that the Manager of the Seattle Aircraft Certification Office has previously approved the accomplishment of the applicable inspection, repair, and modification procedures contained in Boeing Alert Service Bulletin 747-53A2696, dated October 16, 2008, as an alternative method of compliance (AMOC) for paragraphs

(f) and (g) of AD 2006-08-02, Amendment 39-14556 (71 FR 18618, April 12, 2006), and the inspection, repair, and modification requirements of paragraphs (a), (b), (c), (e), (g)(1), (h)(2), (i), (j), (k), and (l) of AD 2005-07-21.

We agree to provide clarification of the post-upper chord replacement actions. Paragraph (h) of this final rule requires detailed and HFEC inspections for cracks of the modified upper deck floor beams, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2696, dated October 16, 2008, within 15,000 flight cycles after the upper chord replacement, or within 1,500 flight cycles after the effective date of this AD, whichever occurs later. In addition, paragraph (h) of this final rule requires a repeat accomplishment of the upper chord replacement within 6,000 flight cycles after doing the initial post-upper chord replacement inspections. Boeing Alert Service Bulletin 747-53A2696 in turn refers to Boeing Alert Service Bulletins 747-53A2429, Revision 2; and 747-53A2439, Revision 2; for inspection procedures only. Therefore, the modification in accordance with Boeing Alert Service Bulletin 747-53A2429, dated March 22, 2001, as mandated by paragraph (g) of AD 2005-07-21, is not required by this final rule. Operators should note that accomplishment of the actions per this AD has been approved as an AMOC to the corresponding requirements of AD 2005-07-21 and AD 2006-08-02 as described above. We have not changed the final rule in regard to this issue.

Explanation of Changes Made to This AD

We have revised this AD to identify the legal name of the manufacturer as published in the most recent type certificate data sheet for the affected airplane models.

Boeing Commercial Airplanes has received an Organization Designation Authorization (ODA), which replaces their previous designation as a Delegation Option Authorization (DOA) holder. We have revised paragraph (j)(3) of this AD to delegate the authority to approve an alternative method of compliance for any repair required by this AD to the Boeing Commercial Airplanes ODA.

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 determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

Costs of Compliance

We estimate that this AD affects 25 airplanes of U.S. registry. The following table provides the estimated costs for U.S. operators to comply with this AD.

Table – Estimated costs

Work hours	Average labor rate per hour	Parts	Cost per product	Number of U.S.-registered airplanes	Fleet cost
663	\$80	None	\$53,040 per inspection/replacement cycle	25	\$1,326,000 per inspection/replacement 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 FAA amends § 39.13 by adding the following new AD:



2010-03-05 The Boeing Company: Amendment 39-16188. Docket No. FAA-2009-0608; Directorate Identifier 2008-NM-215-AD.

Effective Date

- (a) This airworthiness directive (AD) is effective March 11, 2010.

Affected ADs

- (b) None.

Applicability

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

Subject

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

Unsafe Condition

- (e) This AD results from a report from the manufacturer that the accomplishment of certain existing inspections, repairs, and modifications is not adequate to ensure the structural integrity of the affected 7075 series aluminum alloy upper deck floor beam upper chords on airplanes that have exceeded certain thresholds. We are issuing this AD to prevent 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.

Compliance

- (f) Comply with this AD within the compliance times specified, unless already done.

Initial Inspection and Replacement

- (g) Before the accumulation of 21,000 total flight cycles, or within 1,500 flight cycles after the effective date of this AD, whichever occurs later: Do an open-hole high frequency eddy current (HFEC) inspection of all the fastener holes accessed for upper chord removal for cracks, and replace the upper chords, straps (or angles), and radius fillers of the upper deck floor beams, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2696, dated October 16, 2008.

Repetitive Replacements and Post-Replacement Inspections

(h) Within 15,000 flight cycles after doing the replacement required by paragraph (g) of this AD, or within 1,500 flight cycles after the effective date of this AD, whichever occurs later: Do detailed and HFEC inspections for cracks of the modified upper deck floor beams, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2696, dated October 16, 2008. Within 6,000 flight cycles after doing the detailed and HFEC inspections, repeat the replacement specified in paragraph (g) of this AD. Repeat the post-replacement inspections and replacement at the applicable times specified in paragraph 1.E. of Boeing Alert Service Bulletin 747-53A2696, dated October 16, 2008.

Repair of Cracks

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

Alternative Methods of Compliance (AMOCs)

(j)(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. Send information to ATTN: Ivan Li, Airframe Branch, ANM-120S, FAA, Seattle ACO, 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.

Material Incorporated by Reference

(k) You must use Boeing Alert Service Bulletin 747-53A2696, dated October 16, 2008, as applicable, 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 or 425-227-1152.

(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 January 21, 2010.

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

SUPERSEDED