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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2009-0655; Directorate Identifier 2008-NM-192-AD; Amendment 39-16157; AD 2010-01-01]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Model 747-200F, 747-200C, 747-400, 747-400D, and 747-400F Series Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD), which applies to all Model 747-200F, 747-200C, 747-400, 747-400D, and 747-400F series airplanes. That AD currently requires repetitive inspections for cracking of certain fuselage internal structure (i.e., Sections 42 and 46 fuselage frames, upper deck floor beams, electronic bay access door cutout, nose wheel well, and main entry doors and door cutouts), and repair if necessary. This new AD requires additional repetitive inspections for cracking of certain fuselage structure (i.e., Section 41 fuselage frames where they connect to upper deck floor beams, and Section 41 fuselage frames between stringers (S-8 and S-12)), and related investigative/corrective actions if necessary. This AD also reduces the inspection threshold and repetitive inspection intervals for certain airplanes. This AD results from fatigue tests and analysis that identified additional areas of the fuselage where fatigue cracks can occur. We are issuing this AD to prevent the loss of structural integrity of the fuselage, which could result in rapid depressurization of the airplane.

DATES: This AD becomes effective February 16, 2010.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of February 16, 2010.

The Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2500, dated December 21, 2004, as of April 6, 2006 (71 FR 10605, March 2, 2006).

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 2006-05-02, Amendment 39-14499 (71 FR 10605, March 2, 2006). The existing AD applies to all Model 747-200F, 747-200C, 747-400, 747-400D, and 747-400F series airplanes. That NPRM was published in the Federal Register on July 23, 2009 (74 FR 36417). That NPRM proposed to continue to require repetitive inspections for cracking of certain fuselage internal structure (i.e., Sections 42 and 46 fuselage frames, upper deck floor beams, electronic bay access door cutout, nose wheel well, and main entry doors and door cutouts), and repair if necessary. That NPRM proposed to require additional repetitive inspections for cracking of certain fuselage structure (i.e., Section 41 fuselage frames where they connect to upper deck floor beams, and Section 41 fuselage frames between stringer (S-8 and S-12)), and related investigative/corrective actions if necessary. That NPRM also proposed to reduce the inspection threshold and repetitive inspection intervals for certain airplanes. That NPRM resulted from fatigue tests and analysis that identified areas of the fuselage where fatigue cracks can occur.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments that have been received on the NPRM.

Request To Revise References in Paragraph (m)(4) of the NPRM

Boeing requests that paragraph (m)(4) of the NPRM be revised to reference paragraphs (h) and (i)—not paragraphs (c) and (d). Boeing states that in AD 2004-07-22 R1, Amendment 39-15326 (73 FR 1052, January 7, 2008), paragraph identifiers (c) and (d) were revised to (h) and (i).

We agree. We have revised paragraph (m)(4) of this final rule accordingly. In addition, we have revised paragraph (m)(4)(i) of this AD to change the reference from paragraph (d) to paragraph (i) of AD 2004-07-22 R1.

Boeing also requests that paragraph (m)(4)(ii) of the NPRM be revised to add a reference to Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008. Boeing states that both the original and Revision 1 of Boeing Alert Service Bulletin 747-53A2500 provide inspections that are an AMOC to AD 2004-07-22 R1.

We agree for the reasons provided by the commenter. We have revised paragraph (m)(4)(ii) of this AD accordingly.

Conclusion

We have carefully reviewed the available data, including the comments that have been received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

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.

Costs of Compliance

There are about 640 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. The average labor rate is \$80 per work hour.

Estimated Costs					
Action	Work hours	Parts	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
Inspections (required by AD 2006-05-02)	260	None required	\$20,800 per inspection cycle	71	\$1,476,800 per inspection cycle
Inspections of additional areas (new required action)	7	None required	\$560 per inspection cycle	71	\$39,760 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

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); 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the ADDRESSES section for a location to examine the regulatory evaluation.

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 39-14499 (71 FR 10605, March 2, 2006) and by adding the following new airworthiness directive (AD):



2010-01-01 The Boeing Company: Amendment 39-16157. Docket No. FAA-2009-0655; Directorate Identifier 2008-NM-192-AD.

Effective Date

- (a) This AD becomes effective February 16, 2010.

Affected ADs

- (b) This AD supersedes AD 2006-05-02, Amendment 39-14499.

Applicability

- (c) This AD applies to all The Boeing Company Model 747-200F, 747-200C, 747-400, 747-400D, and 747-400F series airplanes; certificated in any category.

Subject

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

Unsafe Condition

- (e) This AD results from fatigue tests and analysis that identified additional areas of the fuselage where fatigue cracks can occur. We are issuing this AD to prevent the loss of structural integrity of the fuselage, which could result in rapid depressurization of 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.

Restatement of Requirements of AD 2006-05-02, With Updated Service Information and Reduced Compliance Times for Group 8 Airplanes

Inspections

- (g) Do initial and repetitive inspections for fuselage cracks using applicable internal and external detailed inspection methods, and repair all cracks, by doing all the actions specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2500, dated December 21, 2004; or Revision 1, dated September 25, 2008; except as required by paragraph (h) or provided by paragraph (l) of this AD. After the effective date of this AD, Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008, must be used. Do the initial and repetitive inspections at the applicable times specified in paragraph (g)(1) or (g)(2) of this AD, except as required by paragraph (j) of this AD. Repair any crack before further flight after detection.

(1) For Groups 1 through 7, 9, and 10 identified in Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008: Do the initial and repetitive inspections at the times specified in paragraph 1.E. of Boeing Alert Service Bulletin 747-53A2500, dated December 21, 2004, except as required by paragraph (i) of this AD.

(2) For Group 8 airplanes identified in Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008: Do the initial and repetitive inspections at the applicable time specified in paragraph 1.E. of Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008, except as required by paragraph (k) of this AD.

Exceptions to Service Bulletin Procedures

(h) If any crack is found during any inspection required by this AD, and Boeing Alert Service Bulletin 747-53A2500, dated December 21, 2004; or Revision 1, dated September 25, 2008; specifies to contact Boeing for appropriate action: Before further flight, repair the crack using a method approved in accordance with the procedures specified in paragraph (m) of this AD.

(i) Where Boeing Alert Service Bulletin 747-53A2500, dated December 21, 2004; or Revision 1, dated September 25, 2008; specifies a compliance time after the date on the original issue of the service bulletin, this AD requires compliance within the specified compliance time after April 6, 2006 (the effective date of AD 2006-05-02).

New Requirements of This AD

Actions for Additional Areas

(j) For the additional inspection areas of Groups 1 through 7, 9, and 10 airplanes, identified in Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008: Do initial and repetitive inspections for cracking of the inspection areas, and, as applicable, repair cracking, by doing all the actions specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008; except as required by paragraph (h) of this AD. Do the initial and repetitive inspections at the times specified in paragraph 1.E. of Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008, except as required by paragraph (k) of this AD. Repair all cracking before further flight.

(k) Where Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008, specifies a compliance time after the date on Revision 1 of the service bulletin, this AD requires compliance within the specified compliance time after the effective date of this AD.

(l) For Group 8 airplanes, inspection of Areas 2 and 5 identified in Boeing Alert Service Bulletin 747-53A2500, dated December 21, 2004, as required by paragraph (g) of this AD, is no longer required.

Alternative Methods of Compliance (AMOCs)

(m)(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: 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) AMOCs approved previously in accordance with AD 2006-05-02 are approved as alternative methods of compliance with the corresponding requirements of this AD.

(4) Accomplishment of the inspections specified in this AD is considered an AMOC for the applicable requirements of paragraphs (h) and (i) of AD 2004-07-22 R1, Amendment 39-15326, under the conditions specified in paragraphs (m)(4)(i) and (m)(4)(ii) of this AD.

(i) The inspections specified in this AD must be done within the compliance times specified in AD 2004-07-22 R1. The initial inspection specified in this AD must be done at the times specified in paragraph (i) of AD 2004-07-22 R1, and the inspections specified in this AD must be repeated within the intervals specified in paragraph (g) of this AD.

(ii) The AMOC specified in paragraph (m)(4) of this AD applies only to the areas of Boeing Supplemental Structural Inspection Document for Model 747 Airplanes, Document D6-35022, Revision G, dated December 2000, that are specified in Boeing Alert Service Bulletin 747-53A2500, dated December 21, 2004; or Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008.

(5) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD, if it is approved by an Authorized Representative for the Boeing Commercial Airplanes Delegation Option Authorization Organization who 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

(n) You must use Boeing Alert Service Bulletin 747-53A2500, dated December 21, 2004, as of April 6, 2006; or Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 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 Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008, under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2500, dated December 21, 2004, as of April 6, 2006 (71 FR 10605, March 2, 2006).

(3) 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>.

(4) 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.

(5) 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 December 17, 2009.
Stephen P. Boyd,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.