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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2013-0461; Directorate Identifier 2012-NM-169-AD; Amendment 39-17670; AD 2013-23-15]

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) 2009-06-02, which applied to certain The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747SR, and 747SP series airplanes. AD 2009-06-02 required repetitive inspections for skin cracks at the shear tie end fastener locations of the fuselage frames, and repair of cracks if necessary. This new AD also requires repetitive inspections for skin cracks next to the shear tie on airplanes with certain existing repair doublers, and corrective actions if necessary. This AD also revises the applicability to include additional airplanes. This AD was prompted by additional cracking found on an airplane not affected by AD 2009-06-02. We are issuing this AD to detect and correct fatigue cracks in the fuselage skin that can propagate and grow, and result in reduced structural integrity and sudden decompression of the airplane in flight.

DATES: This AD is effective December 30, 2013.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of December 30, 2013.

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, Washington. 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>; 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 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: Berhane Alazar, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: 425-917-6577; fax: 425-917-6590; email: berhane.alazar@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2009-06-02, Amendment 39-15838 (74 FR 11013, March 16, 2009). AD 2009-06-02 applied to the specified products. The NPRM published in the Federal Register on June 3, 2013 (78 FR 33012). The NPRM proposed to continue to require repetitive inspections for skin cracks at the shear tie end fastener locations of the fuselage frames, and repair of cracks if necessary. The NPRM also proposed to require repetitive inspections for skin cracks next to the shear tie on airplanes with certain existing repair doublers, and corrective actions if necessary. The NPRM also proposed to revise the applicability to include additional airplanes.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal (78 FR 33012, June 3, 2013) and the FAA's response to each comment.

Request To Revise Repetitive Inspection Type

Boeing requested that we revise paragraph (h) of the NPRM (78 FR 33012, June 3, 2013) to correct the required inspection method for the repetitive inspections. The NPRM specified repeating the "external detailed inspection" at the times specified in table 4 or table 5 of Boeing Alert Service Bulletin 747-53A2682, Revision 1, dated May 24, 2012. Boeing noted however that the compliance times in those tables are for internal high frequency eddy current (HFEC) inspection.

We agree with the request. Paragraph (h) of this AD requires an internal HFEC inspection; the inspections that must be repeated are also internal HFEC inspections. We have revised paragraph (h) in this final rule to specify that the inspection to be repeated is an internal HFEC inspection.

Request To Revise Description of Unsafe Condition

Boeing requested that we revise the description of the unsafe condition to clarify that the subject of the unsafe condition is the fuselage area—not the frame shear ties, as stated in the NPRM (78 FR 33012, June 3, 2013).

We agree with the request and rationale. We have revised paragraph (e) in this final rule to explain that the fuselage skin—not the ties themselves—is subject to widespread fatigue damage.

Conclusion

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

Are consistent with the intent that was proposed in the NPRM (78 FR 33012, June 3, 2013) for correcting the unsafe condition; and

Do not add any additional burden upon the public than was already proposed in the NPRM (78 FR 33012, June 3, 2013).

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

Costs of Compliance

We estimate that this AD affects 234 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
Inspection	30 or 49 work-hours (depending on inspection) × \$85 per hour = \$2,550 or \$4,165 per inspection cycle	\$0	\$2,550 or \$4,165 per inspection cycle	Up to \$974,610 per inspection cycle.

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) 2009-06-02, Amendment 39-15838 (74 FR 11013, March 16, 2009), and adding the following new AD:



2013-23-15 The Boeing Company: Amendment 39-17670; Docket No. FAA-2013-0461; Directorate Identifier 2012-NM-169-AD.

(a) Effective Date

This AD is effective December 30, 2013.

(b) Affected ADs

This AD supersedes AD 2009-06-02, Amendment 39-15838 (74 FR 11013, March 16, 2009).

(c) Applicability

This AD applies to The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes, as identified in Boeing Alert Service Bulletin 747-53A2682, Revision 1, dated May 24, 2012.

(d) Subject

Joint Aircraft System Component (JASC)/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 fuselage frames are subject to widespread fatigue damage. The actions were developed to support the airplane's limit of validity of the engineering data that support the established structural maintenance program. We are issuing this AD to detect and correct fatigue cracks in the fuselage skin that can propagate and grow, and result in reduced structural integrity and sudden decompression of the airplane in flight.

(f) Compliance

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

(g) Repetitive Inspections

At the applicable compliance time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2682, Revision 1, dated May 24, 2012, except as provided by paragraphs (i)(1) and (i)(2) of this AD, do an external detailed or high frequency eddy current (HFEC) inspection for skin cracks at specified shear tie end fastener locations of the fuselage frames, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2682, Revision 1, dated May 24, 2012, except as required by paragraph (i)(3) of this AD. Do all applicable corrective actions before further flight. Repeat the external

detailed or HFEC inspection thereafter at the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2682, Revision 1, dated May 24, 2012.

(h) Post-Repair Inspections

For any external repair doubler in the inspection area specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2682, Revision 1, dated May 24, 2012, that has an upper or lower fastener row that is common to a shear tie end fastener: At the applicable time specified in paragraph (h)(1) or (h)(2) of this AD, whichever occurs later, do an internal HFEC inspection for cracks in the skin next to the shear tie, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2682, Revision 1, dated May 24, 2012, except as required by paragraph (i)(3) of this AD. Do all corrective actions before further flight. Repeat the internal HFEC inspection thereafter at the time specified in Table 4 or Table 5 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2682, Revision 1, dated May 24, 2012, as applicable.

- (1) Before further flight after an inspection required by paragraph (g) of this AD.
- (2) Within 2,000 flight cycles after the effective date of this AD.

(i) Service Information Clarifications and Exceptions

(1) Paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2682, Revision 1, dated May 24, 2012, specifies certain compliance times in terms of the effective date of AD 2009-06-02, Amendment 39-15838 (74 FR 11013, March 16, 2009). The effective date of AD 2009-06-02 is April 20, 2009.

(2) Where paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2682, Revision 1, dated May 24, 2012, specifies counting the compliance time "after the revision 1 date of this service bulletin," this AD requires compliance within the applicable time after the effective date of this AD.

(3) Where Boeing Alert Service Bulletin 747-53A2682, Revision 1, dated May 24, 2012, specifies to contact Boeing for repair instructions, this AD requires repair before further flight using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(j) Credit for Previous Actions

This paragraph provides credit for the actions specified in paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 747-53A2682, dated May 8, 2008.

(k) 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.

(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 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.

(m) Related Information

(1) For more information about this AD, contact Berhane Alazar, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: 425-917-6577; fax: 425-917-6590; email: berhane.alazar@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference may be obtained 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 747-53A2682, Revision 1, dated May 24, 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, Washington. 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 November 6, 2013.

Jeffrey E. Duven,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.