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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2013-0625; Directorate Identifier 2013-NM-013-AD; Amendment 39-17638; AD 2013-22-06]**

**RIN 2120-AA64**

### **Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** We are superseding Airworthiness Directive (AD) 94-13-06 for certain The Boeing Company Model 747 series airplanes. AD 94-13-06 required repetitive detailed inspections to detect cracking in certain fuselage upper deck tension ties, repair or modification of any cracked tension ties, and repetitive inspections of repaired and modified tension ties and repair or modification if necessary. AD 94-13-06 also provided for optional terminating action for the repetitive detailed inspections of tension ties that had not been repaired or modified. This new AD retains the repetitive inspections, mandates the previously optional terminating modification, and adds, for tension ties that have not been repaired or modified, repetitive inspections that must be done concurrently with the existing repetitive inspections. This AD was prompted by an evaluation by the design approval holder indicating that the upper deck tension ties of the fuselage are subject to widespread fatigue damage. We are issuing this AD to prevent widespread fatigue damage of certain fuselage upper deck tension ties, which could result in reduced structural integrity of the airplane.

**DATES:** This AD is effective December 5, 2013.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of December 5, 2013.

**ADDRESSES:** For service information identified in this AD, contact, 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 Ave. 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:** Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, Washington 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 94-13-06, Amendment 39-8946 (59 FR 32879, June 27, 1994). AD 94-13-06 applied to the specified products. The NPRM published in the Federal Register on July 22, 2013 (78 FR 43839). The NPRM proposed to continue to require repetitive detailed inspections to detect cracking in certain fuselage upper deck tension ties, repair or modification of any cracked tension ties, and repetitive inspections of repaired and modified tension ties and repair or modification if necessary. The NPRM also proposed to mandate the previously optional terminating modification, and add, for tension ties that have not been repaired or modified, repetitive inspections that must be done concurrently with the existing repetitive inspections.

**Comments**

We gave the public the opportunity to participate in developing this AD. We have considered the comment received. Boeing supported the NPRM (78 FR 43839, July 22, 2013).

**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.

**Costs of Compliance**

We estimate that this AD affects 113 airplanes of U.S. registry.  
We estimate the following costs to comply with this AD:

<b>Estimated Costs</b>				
<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Detailed inspections [retained action from AD 94-13-06, Amendment 39-8946 (59 FR 32879, June 27, 1994)]	5 work-hours × \$85 per hour = \$425	\$0	\$425 per inspection cycle	\$48,025 per inspection cycle.
Post-mod/repair inspections [new proposed action]	1 work-hour × \$85 per hour = \$85	0	\$85	\$9,605.
Modification [new proposed action]	Up to 112 work-hours × \$85 per hour = up to \$9,520	0	Up to \$9,520	Up to \$1,075,760.

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) 94-13-06, Amendment 39-8946 (59 FR 32879, June 27, 1994), and adding the following new AD:



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**2013-22-06 The Boeing Company:** Amendment 39-17638; Docket No. FAA-2013-0625; Directorate Identifier 2013-NM-013-AD.

**(a) Effective Date**

This AD is effective December 5, 2013.

**(b) Affected ADs**

This AD supersedes AD 94-13-06, Amendment 39-8946 (59 FR 32879, June 27, 1994).

**(c) Applicability**

This AD applies to The Boeing Company Model 747-100, 747-200B, and 747-200F series airplanes, certificated in any category, as listed in Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 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 the upper deck tension ties of the fuselage are subject to widespread fatigue damage. We are issuing this AD to prevent widespread fatigue damage of certain fuselage upper deck tension ties, which could result in reduced structural integrity of the airplane.

**(f) Compliance**

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

**(g) Inspections and Repair/Modification**

Except as required by paragraph (k)(3) of this AD, at the applicable time specified in Tables 1 and 3 of paragraph 1.E., "Compliance" of Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012: Do detailed and surface high frequency eddy current (HFEC) inspections for cracks in the tension ties, as applicable, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012, except as required by paragraph (k)(2) of this AD. The effective date of AD 94-13-06, Amendment 39-8946 (59 FR 32879, June 27, 1994) is July 27, 1994. Do all applicable corrective actions before further flight. Repeat the detailed and HFEC inspections thereafter at the time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012, except as specified in paragraph (k)(1) of this AD. Repair of a tension tie, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012, except as required by paragraph (k)(2) of this AD, terminates the requirements of this paragraph for that tension tie only.

## **(h) Modification**

Except as provided by paragraph (k)(3) of this AD, at the applicable time specified in Table 3 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012: Modify the tension ties, including doing an open-hole HFEC inspection for cracks before enlarging the hole, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012. Modification of the tension ties terminates the requirements of paragraph (g) of this AD. If any cracking is found, before further flight, do the repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

## **(i) Post-Repair/Modification Inspections**

At the applicable time specified in Table 2 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012: Do a detailed inspection of all repaired and modified tension ties, and do all applicable corrective actions, except as required by paragraph (k)(2) of this AD, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012, except as required by paragraph (k)(2) of this AD. Repeat the inspection thereafter at the times specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012. Do all applicable corrective actions before further flight.

## **(j) Credit for Previous Actions**

This paragraph provides credit for the modification required by paragraphs (g) and (h) of this AD if that modification was done before the effective date of this AD using Boeing Service Bulletin 747-53-2371, dated July 29, 1993; or Boeing Service Bulletin 747-53-2371, Revision 1, dated April 27, 1995; which are not incorporated by reference in this AD. Boeing Service Bulletin 747-53-2371, dated July 29, 1993, was incorporated by reference in AD 94-13-06, Amendment 39-8946 (59 FR 32879, June 27, 1994).

## **(k) Exception to Service Information**

(1) Where Row 2 of Table 3 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012, specifies repeating a "detailed" inspection, "as given in Part 4" of this service information, the repetitive inspections required by this AD are "HFEC" inspections, done in accordance with Part 4 and Figure 8 of Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012.

(2) Where Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012, specifies contacting Boeing for repair instructions, or does not include repair instructions for a crack found in an area other than the aft tension tie area: Before further flight, do the repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(3) Where Boeing Alert Service Bulletin 747-53A2371, Revision 2, dated December 11, 2012, specifies a compliance time of "after the Revision 2 date of this service bulletin," this AD requires compliance within the specified compliance time after the effective date of this AD.

## **(l) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle Aircraft Certification Office (ACO), 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 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.

(4) AMOCs approved for AD 94-13-06, Amendment 39-8946 (59 FR 32879, June 27, 1994), are approved as AMOCs for the corresponding actions required by paragraphs (g), (h), and (i) of 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, Washington 98057-3356; phone: (425) 917-6428; fax: (425) 917-6590; email: nathan.p.weigand@faa.gov.

(2) Service information 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 747-53A2371, Revision 2, dated December 11, 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 October 15, 2013.

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