

[Federal Register Volume 79, Number 90 (Friday, May 9, 2014)]  
[Rules and Regulations]  
[Pages 26606-26608]  
From the Federal Register Online via the Government Printing Office [www.gpo.gov]  
[FR Doc No: 2014-09832]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2013-0686; Directorate Identifier 2013-NM-006-AD; Amendment 39-17843; AD 2014-09-08]**

**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) 2007-16-19, which applied to certain The Boeing Company Model 747-200B, 747-300, and 747-400 series airplanes. AD 2007-16-19 required repetitive detailed inspections for cracking of the aft tension tie channels from body station (BS) 1120 to BS 1220 and from BS 880 to BS 1100, and corrective actions if necessary. AD 2007-16-19 also provided optional terminating action. This new AD retains the existing requirements, limits the area of the detailed inspection, adds repetitive surface high-frequency eddy current inspections, and mandates the previously optional terminating action. This AD was prompted by an analysis that indicated the need to mandate the previously optional modification. We are issuing this AD to prevent fatigue cracking of the tension ties, which could result in reduced structural integrity of the airplane and rapid depressurization of the airplane.

**DATES:** This AD is effective June 13, 2014.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of June 13, 2014

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of September 12, 2012 (77 FR 47267, August 8, 2012).

**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-2013-0686; 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:** Bill Ashforth, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6432; fax: 425-917-6590; email: [bill.ashforth@faa.gov](mailto:bill.ashforth@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2007-16-19, Amendment 39-15158 (72 FR 45151, August 13, 2007). AD 2007-16-19 applied to certain The Boeing Company Model 747-200B, 747-300, and 747-400 series airplanes. The NPRM published in the Federal Register on August 12, 2013 (78 FR 48835). The NPRM was prompted by an analysis that indicated the need to mandate the previously optional modification. The NPRM proposed to continue to require repetitive detailed inspections for cracking of the aft tension tie channels from body station (BS) 1120 to BS 1220 and from BS 880 to BS 1100, and corrective actions if necessary. The NPRM also proposed to provide optional terminating action for the repetitive detailed inspections at BS 1120 to 1220. The NPRM also proposed to limit the area of the detailed inspection, add repetitive surface high-frequency eddy current inspections, and mandate the previously optional terminating action for BS 880 to 1100. We are issuing this AD to prevent fatigue cracking of the tension ties, which could result in reduced structural integrity of the airplane and rapid depressurization of the airplane.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal (78 FR 48835, August 12, 2013) and the FAA's response to each comment.

### **Request To Change Service Information Reference**

Paragraph (h) of the NPRM (78 FR 48835, August 12, 2013) specified a modification and related investigative and corrective actions, in accordance with Boeing Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012. Paragraph (h) of the NPRM included the following provision:

Modification of a tension tie at STA 1120 to 1220, as required by paragraph (p) of AD 2012-15-13 . . . , is acceptable for compliance with the requirements of paragraph (h) of this AD for that tension tie location only.

Boeing requested that we revise that sentence to specify that the modification is terminating action if done in accordance with Boeing Service Bulletin 747-53A2559, Revision 1, dated August 4, 2011—instead of AD 2012-15-13, Amendment 39-17142 (77 FR 47267, August 8, 2012), which could be superseded in the future.

We agree with the request, for the reasons provided by the commenter, and have revised this terminating action provision accordingly in this final rule. We have also revised paragraph (b) of this final rule to remove the reference to AD 2012-15-13, Amendment 39-17142 (77 FR 47267, August 8, 2012). In addition, we have moved the terminating action provisions from paragraph (h) of this final rule to a new paragraph (i) in this final rule, and redesignated subsequent paragraphs accordingly.

### **Requests for More Specific Exception References**

Boeing requested that we revise paragraphs (g) and (h) of the NPRM (78 FR 48835, August 12, 2013) to change the reference to the compliance-time exception paragraph, which the NPRM identified as paragraph "(i)." Boeing requested that we more specifically identify this exception as paragraph "(i)(2)" of the NPRM.

We agree, and have revised paragraphs (g) and (h) accordingly in this final rule—except that paragraph (i)(2) of the NPRM (78 FR 48835, August 12, 2013) has been redesignated as paragraph (j)(2) in this final rule.

### **Additional Changes to NPRM (78 FR 48835, August 12, 2013)**

Paragraph (h) of the NPRM (78 FR 48835, August 12, 2013) provided terminating action for all tension tie locations (BS 880 to 1220). We have revised paragraph (h) in this final rule to require terminating action for BS 880 to 1100 only, and to move the (optional) terminating action for BS 1120 to 1220 to new paragraph (i) in this final rule. We redesignated subsequent paragraphs accordingly.

We have further revised paragraph (h) of the NPRM (78 FR 48835, August 12, 2013), now paragraphs (h) and (i) in this final rule, to clarify that modification of a tension tie is acceptable for compliance with the requirements of paragraph (g) of this AD for the affected tension tie location only.

Paragraph (h) of the NPRM (78 FR 48835, August 12, 2013) incorrectly stated that it terminated paragraph (h) of the AD. Paragraphs (h) and (i) in this final rule instead identify paragraph (g) of the AD as the terminated action.

### **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 48835, August 12, 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 48835, August 12, 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 1 airplane of U.S. registry. We estimate the following costs to comply with this AD:

**Estimated costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Retained detailed inspection (retained actions)	4 work-hours × \$85 per hour = \$340 per inspection cycle	\$0	\$340 per inspection cycle	\$340 per inspection cycle.
New surface high-frequency eddy current inspection	4 work-hours × \$85 per hour = \$340 per inspection cycle	0	\$340 per inspection cycle	\$340 per inspection cycle.
New modification	64 work-hours × \$85 per hour = \$5,440	14,948	\$20,388	\$20,388

We have received no definitive data that would enable us to provide work-hour estimates for repair of cracks found in a bolt hole during the detailed inspection specified in this AD. The cost for parts (oversized fastener kit) for this condition is \$2,292.

**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) 2007-16-19, Amendment 39-15158 (72 FR 45151, August 13, 2007), and adding the following new AD:



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**2014-09-08 The Boeing Company:** Amendment 39-17843; Docket No. FAA-2013-0686; Directorate Identifier 2013-NM-006-AD.

**(a) Effective Date**

This AD is effective June 13, 2014.

**(b) Affected ADs**

This AD supersedes AD 2007-16-19, Amendment 39-15158 (72 FR 45151, August 13, 2007).

**(c) Applicability**

This AD applies to The Boeing Company Model 747-200B, 747-300, and 747-400 series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012.

**(d) Subject**

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

**(e) Unsafe Condition**

This AD was prompted by an evaluation by the design approval holder (DAH) indicating that the tension ties are subject to widespread fatigue damage (WFD). We are issuing this AD to prevent fatigue cracking of the tension ties, which could result in reduced structural integrity of the airplane and rapid depressurization of the airplane.

**(f) Compliance**

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

**(g) Repetitive Inspections**

At the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012, except as specified in paragraph (j)(2) of this AD: Do detailed and surface high-frequency eddy current inspections for cracks in the tension ties at body station (BS) 880 to 1100, 1120, 1160, 1200, and 1220, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012, except as required by paragraph (j)(3) of this AD. Do all applicable corrective actions before further flight. Repeat the inspections thereafter at the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012, until the tension ties have been modified as required by paragraph (h) of this AD or as specified in paragraph (i) of this AD. Repair or modification of a tension tie at any location in accordance with Part 3 of the Accomplishment Instructions of Boeing

Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012, terminates the repetitive inspection requirements of this AD for that tension tie location only.

**(h) Tension Tie Modification: BS 880 to 1100**

At the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012, except as specified in paragraph (j)(2) of this AD: Modify the tension ties from BS 880 to 1100, and do all applicable related investigative and corrective actions, in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012, except as required by paragraph (j)(3) of this AD. Do all applicable related investigative and corrective actions before further flight. Modification as required by this paragraph terminates the repetitive inspection requirements of paragraph (g) of this AD for the affected tension tie location(s) only.

**(i) Optional Terminating Action: BS 1120 to 1220**

Modification of a tension tie at BS 1120 to 1220 in accordance with Boeing Service Bulletin 747-53A2559, Revision 1, dated August 4, 2011, except as required by paragraph (j)(4) of this AD, terminates the requirements of paragraph (g) of this AD for that tension tie location only. Paragraph (p) of AD 2012-15-13, Amendment 39-17142 (77 FR 47267, August 8, 2012), mandates the accomplishment of the modification and associated actions specified in Boeing Service Bulletin 747-53A2559, Revision 1, dated August 4, 2011.

**(j) Service Information Clarification and Exceptions**

(1) Paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012, specifies certain compliance times "after August 28, 2007." August 28, 2007, is the effective date of AD 2007-16-19, Amendment 39-15158 (72 FR 45151, August 13, 2007).

(2) Where Boeing Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012, specifies a compliance time "after the Revision 1 date of this service bulletin," this AD requires compliance within the specified time after the effective date of this AD.

(3) Where Boeing Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012, specifies to contact Boeing for certain repair instructions: Repair before further flight using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(4) Where Boeing Service Bulletin 747-53A2559, Revision 1, dated August 4, 2011, specifies to contact Boeing for repair instructions or additional modification requirements, repair of the cracking or additional actions must be done using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

**(k) Credit for Previous Actions**

This paragraph provides credit for the detailed inspections, repairs, and modification specified in paragraphs (g) and (h) of this AD, for that affected tension tie location only, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 747-53A2610, dated May 10, 2007 (which is not incorporated by reference in this AD).

**(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.

(4) AMOCs approved previously in accordance with AD 2007-16-19, Amendment 39-15158 (72 FR 45151, August 13, 2007), are approved as AMOCs for the corresponding provisions of this AD.

### **(m) Related Information**

(1) For more information about this AD, contact Bill Ashforth, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6432; fax: 425-917-6590; email: bill.ashforth@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference may be viewed at the addresses specified in paragraphs (n)(4) and (n)(5) 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.

(3) The following service information was approved for IBR on June 13, 2014.

(i) Boeing Alert Service Bulletin 747-53A2610, Revision 1, dated December 4, 2012.

(ii) Reserved.

(4) The following service information was approved for IBR on September 12, 2012 (77 FR 47267, August 8, 2012).

(i) Boeing Service Bulletin 747-53A2559, Revision 1, dated August 4, 2011.

(ii) Reserved.

(5) 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>.

(6) You may view this service information at FAA, 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.

(7) 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 April 22, 2014.

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