

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2012-0498; Directorate Identifier 2011-NM-212-AD; Amendment 39-17238; AD 2012-22-02]

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 adopting a new airworthiness directive (AD) for certain The Boeing Company Model 747-400, -400D, and -400F series airplanes. This AD was prompted by reports of crown frame web cracking at left buttock line (LBL) 15.0, station (STA) 320. This AD requires measuring the web at STA 320 and, depending on findings, various inspections for cracks and missing fasteners, web and fastener replacement, and related investigative and corrective actions if necessary. We are issuing this AD to prevent complete fracture of the crown frame assembly, and consequent damage to the skin and in-flight decompression of the airplane.

**DATES:** This AD is effective December 26, 2012.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of December 26, 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 review copies of the 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>; 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:** 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.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM published in the Federal Register on June 12, 2012 (77 FR 34881). That NPRM proposed to require measuring the web at STA 320 and, depending on findings, various inspections for cracks and missing fasteners, web and fastener replacement, and related investigative and corrective actions if necessary.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal (77 FR 34881, June 12, 2012), and the FAA's response to each comment.

### **Support for the NPRM (77 FR 34881, June 12, 2012)**

Mr. Caleb Berken stated that the fact that cracks have been seen in five of these airplanes is a little unnerving, but when it is considered that there are only 29 airplanes of this particular series (Model 747-400, -400D, and -400F series airplanes) currently in operation within the United States, these statistics become quite alarming. The commenter stated that he would like to put forth his full support for this proposed rule (77 FR 34881, June 12, 2012) to increase inspection and replacement of compromised parts that have developed within the crown frame web.

### **Request To Provide Credit for Prior Actions**

Boeing requested that we allow credit for work done prior to the effective date of the NPRM (77 FR 34881, June 12, 2012) using Boeing Service Bulletin 747-53A2784, dated August 27, 2009. Boeing stated that Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011 (which is the service information referenced in the NPRM (77 FR 34881, June 12, 2012)), states that "[n]o more work is necessary on airplanes changed in accordance with the original issue of this service bulletin." Boeing stated that the inspections and corrective actions described in Boeing Service Bulletin 747-53A2784, dated August 27, 2009; and Revision 1, dated September 14, 2011; are structurally equivalent.

We agree to add credit for prior actions because no more work is necessary on airplanes changed in accordance with Boeing Service Bulletin 747-53A2784, dated August 27, 2009. We have added new paragraph (l) to this AD to provide credit for actions required by paragraphs (g) through (j) of this AD, if those actions were performed before the effective date of this AD using Boeing Service Bulletin 747-53A2784, dated August 27, 2009. We have re-identified subsequent paragraphs accordingly.

## Request To Allow Deviation Authority

Boeing requested that paragraph (1)(3) of the NPRM (77 FR 34881, June 12, 2012) be revised to allow the Boeing Commercial Airplanes Organization Designation Authorization (ODA) to approve alternative methods of compliance (AMOCs) for both repairs and deviations to the modification that are described in either Boeing Service Bulletin 747-53A2784, dated August 27, 2009; or Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011. Boeing requested that we clarify that an AMOC can be approved for both repairs and deviations to the modification, and that the modification described in Boeing Service Bulletin 747-53A2784, dated August 27, 2009, satisfies the requirements of the modification described in Boeing Service Bulletin 747-53A2784 Revision 1, dated September 14, 2011.

We partially agree. The Boeing ODA is not currently authorized to provide AMOC approval of deviations that occur when doing the modification. However, once the AD is issued, we might delegate approval authority to certain authorized representatives of the Boeing ODA to approve AMOCs for deviations during this modification. We have not changed the AD in this regard.

## 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 change described previously—and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (77 FR 34881, June 12, 2012) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (77 FR 34881, June 12, 2012).

We also 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 29 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
Measurement	1 work-hour × \$85 per hour = \$85	\$0	\$85	\$2,465.
Inspection and web replacement.	208 work-hours × \$85 per hour = \$17,680	Up to \$21,887	Up to \$39,567	Up to \$1,147,443.
Post-replacement inspection.	135 work-hours × \$85 per hour = \$11,475 per inspection cycle.	\$0	\$11,475 per inspection cycle.	\$332,775 per inspection cycle.

We have received no definitive data that would enable us to provide cost estimates for the on-condition crack repairs 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

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 adding the following new airworthiness directive (AD):



**2012-22-02 The Boeing Company:** Amendment 39-17238; Docket No. FAA-2012-0498; Directorate Identifier 2011-NM-212-AD.

**(a) Effective Date**

This AD is effective December 26, 2012.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to The Boeing Company Model 747-400, -400D, and -400F series airplanes, certificated in any category, as specified in Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011.

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 53, Fuselage.

**(e) Unsafe Condition**

This AD was prompted by reports of crown frame web cracking at left buttock line (LBL) 15.0, station (STA) 320. We are issuing this AD to prevent complete fracture of the crown frame assembly, and consequent damage to the skin and in-flight decompression of the airplane.

**(f) Compliance**

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

**(g) Crown Frame Web Measurement**

At the applicable compliance time specified in paragraph 1.E., "Compliance," of Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011, except as specified in paragraph (k)(1) of this AD, measure the thickness of the crown frame web at STA 320, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011. For airplanes with a 0.136- to 0.145-inch-thick web, no further action is required by this AD.

**(h) Detailed Inspection and Web Replacement With No Web Repair Doubler**

For airplanes on which the web measures 0.078- to 0.083-inch-thick during the measurement required by paragraph (g) of this AD, and on which a repair doubler is not installed: At the applicable

time specified in paragraph 1.E., "Compliance," of Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011, except as specified in paragraph (k)(1) of this AD, do a detailed inspection for cracks and a general visual inspection for missing fasteners of the crown frame web at STA 320; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011, except as specified in paragraph (k)(2) of this AD. Do the applicable related investigative and corrective actions at the applicable times specified in paragraph 1.E., "Compliance," of Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011, except as specified in paragraph (k)(1) of this AD. Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011, provides options for accomplishing the actions that are required for airplanes on which no cracking is found in the crown frame web.

**(i) Detailed Inspection and Web Replacement With Web Repair Doubler**

For airplanes on which the web measures 0.078- to 0.083-inch-thick during the measurement required by paragraph (g) of this AD, and on which a repair doubler is installed: At the applicable compliance time specified in paragraph 1.E., "Compliance," of Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011, except as specified in paragraph (k)(1) of this AD, do the actions specified in paragraphs (i)(1) and (i)(2) of this AD, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011, except as specified in paragraph (k)(2) of this AD. Do all applicable corrective actions before further flight.

(1) Replace the web with a new web and do all applicable related investigative actions.

(2) Do a detailed inspection for cracks in the upper or lower chord of the crown frame web at STA 320.

**(j) Post-Replacement Repetitive Inspections of Replaced Web**

Following any web replacement required by this AD, at the times specified in paragraph 1.E., "Compliance," of Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011: Do a detailed inspection for cracks of the web, upper chord, lower chord, and lower chord splice, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011, except as specified in paragraph (k)(2) of this AD. Do all applicable corrective actions before further flight. If no crack is found, repeat the inspection thereafter at the intervals specified in paragraph 1.E., "Compliance," of Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011. Accomplishment of the inspections required by AD 2009-19-05, Amendment 39-16022 (74 FR 48138, September 22, 2009), terminates the requirements of this paragraph.

**(k) Exceptions to the Service Information**

(1) Where Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011, specifies a compliance time "after the original issue date of the service bulletin," this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) Where Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011, specifies to contact Boeing for appropriate action, accomplish applicable actions before further flight using a method approved in accordance with the procedures specified in paragraph (m) of this AD.



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

This paragraph provides credit for the actions required by paragraphs (g) through (j) of this AD, if those actions were performed before the effective date of this AD using Boeing Service Bulletin 747-53A2784, dated August 27, 2009.

## **(m) 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 the Related Information section 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.

## **(n) Related Information**

For more information about this AD, 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.

## **(o) 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 Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011.

(ii) Reserved.

(3) For Boeing 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 review copies of the 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.

(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 19, 2012.  
Kalene C. Yanamura,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.