



適航指令發布單

Airworthiness Directive Issuance Form

民航局AD編號 AD Number	CAA-2016-12-004	發布日期 Date issued	2016/12/19
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	The Boeing Company Model 747-400, -400D, and -400F series airplanes, certificated in any category.		
主旨摘要	FUSELAGE - Main Frame - STA 320 Crown Frame - Inspection/Replacement		
民航局 CAA <input type="checkbox"/> 本國產品 Native products <input type="checkbox"/> 其他個案 Other	設計國民航主關機構 Original Authorities <input checked="" type="checkbox"/> FAA <input type="checkbox"/> EASA <input type="checkbox"/> Brazil <input type="checkbox"/> Transport Canada Civil Aviation <input type="checkbox"/> DGAC <input type="checkbox"/> Germany LBA <input type="checkbox"/> CAA-NL <input type="checkbox"/> UK CAA <input type="checkbox"/> Japan CAB <input type="checkbox"/> CAA of Israel <input type="checkbox"/> Other _____		
	設計國AD編號 Original AD number	2016-25-09	
	1. 直接採用原AD之內容?(Is the original AD directly adopted?) <input checked="" type="checkbox"/> 是(Yes) <input type="checkbox"/> 否(No) ____ a. 生效日期另訂為(Re-specify the effective date as) : _____ b. 執行時限另訂為(Re-specify the compliance time or period as) : _____ 2. 使用人是否需要將AD執行結果向民航局提出報告?(Do Users need to report the status of compliance to the CAA?) <input type="checkbox"/> 是(Yes) <input checked="" type="checkbox"/> 否(No)		
備註 Note	(i) This AD replaces FAA AD 2012-22-02(CAA-2012-11-008) .(ii) Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015.		
註： 1. AD內容後附。 2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。 3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw Note： 1. The AD text is enclosed. 2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval. 3. For further information, please contact Civil Aeronautics Administration on Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw			

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[Rules and Regulations]
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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-5598; Directorate Identifier 2016-NM-001-AD; Amendment 39-18735; AD 2016-25-09]

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) 2012-22-02 for certain The Boeing Company Model 747-400, -400D, and -400F series airplanes. AD 2012-22-02 required measuring the web at station (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. This new AD requires, for certain airplanes, replacement of the web, including related investigative and corrective actions if necessary. This AD was prompted by a determination that there were no inspection or repair procedures included in AD 2012-22-02 for airplanes with a certain crown frame web thickness. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective January 17, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of January 17, 2017.

ADDRESSES: For service information identified in this final rule, 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. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-5598.

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-2016-5598; 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.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2012-22-02, Amendment 39-17238 (77 FR 69739, November 21, 2012) ("AD 2012-22-02"). AD 2012-22-02 applied to certain The Boeing Company Model 747-400, -400D, and -400F series airplanes. The NPRM published in the Federal Register on April 28, 2016 (81 FR 25357) ("the NPRM"). The NPRM was prompted by a determination that there were no inspection or repair procedures included in AD 2012-22-02 for airplanes with a STA 320 crown frame web thickness less than 0.078 inch, or greater than or equal to 0.084 inch and less than or equal to 0.135 inch. The NPRM proposed to continue to require certain actions required by AD 2012-22-02. The NPRM also proposed to require, for certain airplanes, replacement of the web, including 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. Such damage could result in in-flight decompression of the airplane.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA's response to each comment.

Support for the NPRM

United Airlines stated that it concurs with the NPRM.

Request To Remove Redundant Requirements

Boeing requested we change paragraph (i) of the proposed AD to remove redundant language. Boeing requested we remove the second half of the paragraph and subparagraphs (i)(1) and (i)(2) of the proposed AD because they include redundant requirements. Boeing also noted that the redundant requirements include an exception that does not apply to table 3 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015.

We agree to revise paragraph (i) of this AD for the reasons provided by Boeing. We have revised paragraph (i) of this AD accordingly.

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 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 for correcting the unsafe condition; and
 - Do not add any additional burden upon the public than was already proposed in the NPRM.
- We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015. The service information describes procedures for various inspections for cracks and missing fasteners, web and fastener replacement, and related investigative and corrective actions, if necessary. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

We estimate that this AD affects 29 airplanes.
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, inspection, and web replacement [retained actions from AD 2012-22-02]	219 work-hours × \$85 per hour = \$18,615 per inspection and replacement	Up to \$21,887	Up to \$40,502 per inspection and replacement	Up to \$1,174,558 per inspection and replacement.
Post-replacement inspection [retained actions from AD 2012-22-02]	135 work-hours × \$85 per hour = \$11,475 per inspection cycle	\$0	\$11,475 per inspection cycle	\$332,775 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),
- (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) 2012-22-02, Amendment 39-17238 (77 FR 69739, November 21, 2012), and adding the following new AD:



2016-25-09 The Boeing Company: Amendment 39-18735; Docket No. FAA-2016-5598; Directorate Identifier 2016-NM-001-AD.

(a) Effective Date

This AD is effective January 17, 2017.

(b) Affected ADs

This AD replaces AD 2012-22-02, Amendment 39-17238 (77 FR 69739, November 21, 2012) ("AD 2012-22-02").

(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 Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a determination that there were no inspection or repair procedures included in AD 2012-22-02 for airplanes with a station (STA) 320 crown frame web thickness less than 0.078 inch, or greater than or equal to 0.084 inch and less than or equal to 0.135 inch. We are issuing this AD to prevent complete fracture of the crown frame assembly, and consequent damage to the skin. Such damage could result in 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 for Certain Airplanes

For Group 1, Configuration 3 airplanes, identified in Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015: At the compliance time specified in table 1 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015, measure the thickness 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 Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015, except as required by paragraph (l)(2) of this AD. Do all related investigative and corrective actions at the applicable times specified in tables 2 and 3 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015.

(h) Inspections (Web With No Repair Doubler) and Related Investigative and Corrective Actions (Including Web Replacement)

For Group 1, Configuration 1 airplanes, identified in Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015: For airplanes with a web thickness less than 0.136 inch and no repair doubler installed on the web, at the time specified in table 2 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015, 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 Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015, except as specified in paragraph (l)(2) of this AD. Do the applicable related investigative and corrective actions at the applicable times specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015.

(i) Inspection (Web With Repair Doubler) and Related Investigative and Corrective Actions (Including Web Replacement)

For Group 1, Configuration 1 airplanes, identified in Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015: For airplanes with a web thickness less than 0.136 inch and a repair doubler installed on the web, at the time specified in table 3 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015, do a detailed inspection for any crack in the upper chord and lower chord of the STA 320 crown frame, and do all applicable related investigative and corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015, except as specified in paragraph (l)(2) of this AD. Do the applicable related investigative and corrective actions at the applicable times specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015.

(j) Web Replacement for Certain Airplanes

For Group 1, Configuration 2 airplanes, identified in Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015: At the applicable time specified in table 5 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015, except as provided by paragraph (l)(1) of this AD, replace the web, including doing related investigative and corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015, except as required by paragraph (l)(2) of this AD. Do all applicable related investigative and corrective actions before further flight.

(k) Post-Replacement Repetitive Inspections of Replaced Web

Following any web replacement required by this AD, at the time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015: 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 Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015, except as required by paragraph (l)(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 Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015. 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.

(l) Exceptions to the Service Information, With Updated Service Information

(1) Where Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015, specifies a compliance time "after the Revision 2 date of the service bulletin," this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) Where Boeing Alert Service Bulletin 747-53A2784, Revision 2, dated August 20, 2015, 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 (n) of this AD.

(m) Credit for Previous Actions

(1) This paragraph provides credit for the actions required by paragraphs (h), (i), and (k) of this AD, if those actions were performed before December 26, 2012 (the effective date of AD 2012-22-02), using Boeing Service Bulletin 747-53A2784, dated August 27, 2009.

(2) This paragraph provides credit for the actions required by paragraphs (h), (i), and (k) of this AD, if those actions were performed before the effective date of this AD using Boeing Service Bulletin 747-53A2784, Revision 1, dated September 14, 2011. This service information was incorporated by reference in AD 2012-22-02.

(n) 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 (o)(1) of this AD.

(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, modification, or alteration 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. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(o) 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 is available at the addresses specified in paragraphs (p)(3) and (p)(4) of this AD.

(p) 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 747-53A2784, Revision 2, dated August 20, 2015.

(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 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 November 25, 2016.

John P. Piccola, Jr.,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.