

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2009-0794; Directorate Identifier 2009-NM-035-AD; Amendment 39-17239; AD 2012-22-03]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all 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. This AD was prompted by reports of cracks in the main entry door number 1 upper main sill outer chord, along the bend radius of the chord on several airplanes. This AD requires a general visual inspection to identify any existing structural repair manual (SRM) repairs of the upper main sill outer chord of the left and right side main entry door number 1, repetitive detailed inspections for cracks in the upper main sill of the door(s); and related investigative and corrective actions, if necessary. This AD also requires repetitive inspections for airplanes on which a certain repair is done, and corrective actions if necessary, and reduces certain compliance times. We are issuing this AD to detect and correct cracks in the main entry door number 1 upper main sill outer chord, along the bend radius of the chord, which could result in loss of structural integrity of the airplane.

DATES: This AD is effective December 31, 2012.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of December 31, 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, Washington 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, 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: Ivan Li, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: (425) 917-6437; fax: (425) 917-6590; email: ivan.li@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to the specified products. That supplemental NPRM published in the Federal Register on December 29, 2011 (76 FR 81879). The original NPRM (74 FR 49351, September 28, 2009) proposed to require a general visual inspection to identify any existing SRM repairs of the upper main sill outer chord of the left and right side main entry door number 1, as applicable; repetitive detailed inspections for cracks in the upper main sill of the door(s); and related investigative and corrective actions, if necessary. The original NPRM also proposed to require repetitive inspections for airplanes on which a certain repair is done, and corrective actions if necessary. The supplemental NPRM proposed to revise the original NPRM by reducing certain compliance times.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal (76 FR 81879, December 29, 2011) and the FAA's response to each comment.

Request To Repair Crack by Using SRM

Boeing requested that we revise paragraph (k) of the supplemental NPRM (76 FR 81879, December 29, 2011) to allow, for repair of any crack found during any inspection specified in paragraph (g) or (h) of the supplemental NPRM, using "the FAA approved Boeing 747-400 SRM 53-10-15, Fig 201 Repair 1-"MED 1 Upper Main Sill web" or a method approved in accordance with the procedures specified in paragraph (s) of this AD." Boeing explained that the Boeing 747-400 SRM provides an FAA-approved repair, and that allowing its use for repairs would reduce the resource requirements of providing alternative method of compliance (AMOC) approvals.

We agree to include the SRM reference requested by Boeing for Model 747-400 series airplanes. We have revised paragraph (k) of this final rule accordingly.

Request To Revise Inspection Compliance

Boeing requested that we revise paragraph (l) of the supplemental NPRM (76 FR 81879, December 29, 2011) to explain that the specified inspection is repeated only until the outer chord repair is installed (as specified in Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010). Boeing explained that paragraphs (g) and

(h) of the supplemental NPRM allow termination of repetitive inspections if that repair has been accomplished. Boeing reasoned that paragraph (l) of the supplemental NPRM implies that inspections are ongoing.

We agree with the commenter's request for the reasons stated by Boeing. We have revised paragraph (l) of this final rule accordingly.

Request To Include Certain Paragraphs as Acceptable for Repair Requirements of AD 2010-01-01, Amendment 39-16157 (75 FR 1533, January 12, 2010)

All Nippon Airways (ANA) requested that we revise paragraph (o) of the supplemental NPRM (76 FR 81879, December 29, 2011) to reference paragraphs (j) and (k) of the supplemental NPRM as acceptable for compliance with AD 2010-01-01, Amendment 39-16157 (75 FR 1533, January 12, 2010). ANA explained that, otherwise, operators would have to obtain an AMOC for the requirements of AD 2010-01-01 when they repair the subject area per paragraph (j) or (k) of the supplemental NPRM.

We agree that accomplishment of the repairs required by paragraphs (j) and (k) of this AD are acceptable for compliance with the repair requirements of paragraph (h) of AD 2010-01-01, Amendment 39-16157 (75 FR 1533, January 12, 2010). In addition, we have determined that accomplishment of the repairs required by paragraphs (j) and (k) of this AD are acceptable for compliance with paragraph (l) of AD 2009-18-07, Amendment 39-16003 (74 FR 43629, August 27, 2009). We have revised paragraph (o) of this final rule accordingly.

Explanation of Additional Changes Made to This AD

We have revised the heading and wording for paragraph (r) of this AD to provide appropriate credit for previous accomplishment of certain actions. This change does not affect the intent of that paragraph.

We have re-identified Note 1 to paragraph (o) of the supplemental NPRM (76 FR 81879, December 29, 2011) as paragraph (o)(2) in this final rule.

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

- Are consistent with the intent that was proposed in the supplemental NPRM (76 FR 81879, December 29, 2011) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the supplemental NPRM (76 FR 81879, December 29, 2011).

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

Estimated Costs

Action	Work hours	Parts cost	Cost per product	Number of U.S.-registered airplanes	Cost on U.S. operators
Inspection (Groups 1, 3, 5–6 airplanes).	6 work-hours × \$85 per hour = \$510.	\$0	\$510 per inspection cycle	86	\$43,860 per inspection cycle.
Inspection (Groups 2, 4, 7 airplanes).	3 work-hours × \$85 per hour = \$255.	\$0	\$255 per inspection cycle	79	\$20,145 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

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):



2012-22-03 The Boeing Company: Amendment 39-17239; Docket No. FAA-2009-0794; Directorate Identifier 2009-NM-035-AD.

(a) Effective Date

This AD is effective December 31, 2012.

(b) Affected ADs

AD 2009-18-07, Amendment 39-16003 (74 FR 43629, August 27, 2009); and AD 2010-01-01, Amendment 39-16157 (75 FR 1533, January 12, 2010); affect this AD.

(c) Applicability

This AD applies to all 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, certificated in any category.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports of cracks in the main entry door number 1 upper main sill outer chord, along the bend radius of the chord on several airplanes. We are issuing this AD to detect and correct such cracks, which could result in loss of structural integrity of the airplane.

(f) Compliance

You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

(g) Inspection for Groups 1 Through 4 Airplanes

For Groups 1 through 4 airplanes, as identified in Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010: At the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, except as provided by paragraphs (p) and (q) of this AD, do a one-time general visual inspection to identify any existing structural repair manual (SRM) repairs of the upper main sill outer chord of the left and right main entry door 1, as applicable. Remove any existing SRM outer chord repair that is found, before further flight, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010. In addition, after doing the one-time general visual inspection to identify any existing SRM repairs of the upper main sill outer chord of the left and right main entry door 1, before further flight, do a detailed inspection for cracks of the main upper sill

outer chord, web, and frame attachment angles (or clips) of the left and right main entry door 1, as applicable. Do all actions in accordance with Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010. If no crack and no existing SRM outer chord repair is found during any inspection required by this paragraph, at the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, except as provided by paragraphs (p) and (q) of this AD, repeat thereafter the detailed inspection for cracks, at intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, until the outer chord repair specified in Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, is installed.

(h) Inspection for Groups 5 Through 7 Airplanes

For Groups 5 through 7 airplanes, as identified in Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010: At the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, except as provided by paragraphs (p) and (q) of this AD, do a detailed inspection for cracks of the main upper sill outer chord, web, and frame attachment angles (or clips) of the left and right main entry door 1, as applicable, in accordance with Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010. If no crack is found during any inspection required by this paragraph, at the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, except as provided by paragraphs (p) and (q) of this AD, repeat thereafter the detailed inspection for cracks, at intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, until the outer chord repair specified in Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, is installed.

(i) Repair for Groups 1 Through 4 Airplanes

For Groups 1 through 4 airplanes, as identified in Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010: If an existing SRM outer chord repair is found and removed during the inspection required by paragraph (g) of this AD, before further flight, install a new outer chord repair in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010.

(j) Repair of Outer Chord Crack or Cracked Frame Attachment Angles (or Clips)

If any outer chord crack or cracked frame attachment angles (or clips) are found during any inspection required by paragraph (g) or (h) of this AD, before further flight, repair, in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010.

(k) Repair of Upper Main Sill Web Crack

If any upper main sill web crack is found during any inspection required by paragraph (g) or (h) of this AD, before further flight, repair the crack using a method approved in accordance with the procedures specified in paragraph (s) of this AD. For Boeing Model 747-400 series airplanes only, the repair may also be done in accordance with Figure 201, of Repair 1, "Main Entry Door Number 1 Upper Main Sill Web Crack Repair from STA 440 to STA 480," of Subject 53-10-15, "Fuselage Door Surround Structure-Section 41," of Chapter 53, "Fuselage," of Boeing 747-400 Structural Repair Manual, Revision 83, dated June 20, 2012.

(l) Inspection

If any upper main sill web or frame attachment angles (or clips) have been repaired as specified in PART 3–REPAIR of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, and the outer chord repair specified in PART 3–REPAIR of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, has not been installed, at the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, except as provided by paragraphs (p) and (q) of this AD, do a detailed inspection for cracks as specified in paragraph (g) or (h) of this AD, as applicable, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010. Repeat the inspections in paragraph (g) or (h) of this AD, as applicable, thereafter at intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, until the outer chord repair specified in Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, is installed.

(m) Post-Repair Inspection

For airplanes having the outer chord repair installed as specified in PART 3–REPAIR of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010: At the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, except as provided by paragraphs (p) and (q) of this AD, do a detailed inspection for cracks of the left and right main entry door 1 upper sill, as applicable, with the outer chord repair installed, in accordance with PART 5–AFTER-REPAIR INSPECTION of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010. Repeat the inspection for cracks thereafter at the applicable intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010.

(n) Repair of Any Crack Found From Post-Repair Inspection

Repair any crack found during any inspection required by paragraph (m) of this AD, before further flight, using a method approved in accordance with the procedures specified in paragraph (s) of this AD.

(o) Credit for Inspections Required by AD 2009-18-07, Amendment 39-16003 (74 FR 43629, August 27, 2009), or AD 2010-01-01, Amendment 39-16157 (75 FR 1533, January 12, 2010), and AMOC for the Repairs Required by Those ADs

(1) Accomplishing the main entry door 1 cutout detailed inspection required by AD 2009-18-07, Amendment 39-16003 (74 FR 43629, August 27, 2009); or AD 2010-01-01, Amendment 39-16157 (75 FR 1533, January 12, 2010); as applicable; before the effective date of this AD is acceptable for compliance with the detailed inspection requirements of paragraphs (g), (h), (l), and (m) of this AD only. The one-time general visual inspection of paragraph (g) of this AD is still required. For the repaired area only, accomplishment of the applicable repair required by paragraphs (j) and (k) of this AD is acceptable for compliance with paragraph (l) of AD 2009-18-07, and paragraph (h) of AD 2010-01-01.

(2) For all applicable airplanes that have accumulated 22,000 total flight cycles or more as of October 1, 2009 (the effective date of AD 2009-18-07, Amendment 39-16003 (74 FR 43629, August 27, 2009)), AD 2009-18-07 requires accomplishing the main entry door 1 cutout detailed inspection in accordance with Boeing Alert Service Bulletin 747-53A2349, Revision 3, dated October 2, 2008 (which is incorporated by reference in AD 2009-18-07). For all applicable airplanes (except Model

747-400 series airplanes modified to the Model 747-400 large cargo freighter (LCF) configuration) that have accumulated 22,000 total flight cycles or more as of February 16, 2010 (the effective date of AD 2010-01-01, Amendment 39-16157 (75 FR 1533, January 12, 2010)), AD 2010-01-01 requires accomplishing the main entry door 1 cutout detailed inspection in accordance with Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008 (which is incorporated by reference in AD 2010-01-01). For Model 747-400 series airplanes modified to the Model 747-400 LCF configuration and having accumulated 15,000 total flight cycles or more as of February 16, 2010 (the effective date of AD 2010-01-01), AD 2010-01-01 requires accomplishing the inspections in accordance with Boeing Alert Service Bulletin 747-53A2500, Revision 1, dated September 25, 2008 (which is incorporated by reference in AD 2010-01-01).

(p) Exception to the Service Information

Where paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, specifies a compliance time "after the original issue date of this service bulletin," or "after the date on Revision 1 of this service bulletin," this AD requires compliance within the specified compliance time after the effective date of this AD.

(q) Exception to Compliance Time

Where paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010, specifies a compliance time of "within" a specified "total flight-cycles," this AD requires compliance "before the accumulation" of the specified total flight cycles.

(r) Credit for Previous Actions

This paragraph provides credit for the actions required by paragraphs (g), (h), (i), (j), (k), (l), (m), and (n) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 747-53A2785, dated February 12, 2009, which is not incorporated by reference in this AD.

(s) 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.

(t) Related Information

(1) For more information about this AD, contact Ivan Li, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, Washington 98057-3356; telephone (425) 917-6437; fax (425) 917-6590; email: ivan.li@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>

(u) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the following service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use the following service information to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Service Bulletin 747-53A2785, Revision 1, dated July 15, 2010.

(ii) Figure 201, of Repair 1, "Main Entry Door Number 1 Upper Main Sill Web Crack Repair from STA 440 to STA 480," of Subject 53-10-15, "Fuselage Door Surround Structure-Section 41," of Chapter 53, "Fuselage," of Boeing 747-400 Structural Repair Manual, Revision 83, dated June 20, 2012.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>

(4) You may review copies of the 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.

(5) You may also review copies of the 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.