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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-8429; Directorate Identifier 2015-NM-122-AD; Amendment 39-18608; AD 2016-16-10]

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 certain 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 fatigue cracks in the station 320 crown frame and in window post number 3. This AD requires repetitive inspections for cracks and missing fasteners of the station 320 crown frame, cracks in the web and flange surfaces of the forward segment of window post number 3, and missing fasteners and cracks of the window upper sill; post-modification inspections for cracks of the window upper sill; a one-time fastener rework; and related investigative and corrective actions if necessary. We are issuing this AD to detect and correct fatigue cracking and missing fasteners of the station 320 crown frame, cracking of the window post number 3, and cracking of the window upper sill, which could result in an in-flight decompression and a loss of structural integrity of the fuselage.

DATES: This AD is effective September 14, 2016.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of September 14, 2016.

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-2015-8429.

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-2015-8429; 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 by adding an AD that would apply to certain 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. The NPRM published in the Federal Register on January 13, 2016 (81 FR 1577) (“the NPRM”). The NPRM was prompted by reports of fatigue cracks in the station 320 crown frame and in window post number 3. The NPRM proposed to require repetitive inspections for cracks and missing fasteners of the station 320 crown frame, cracks in the web and flange surfaces of the forward segment of window post number 3, and missing fasteners and cracks of the window upper sill; post-modification inspections for cracks of the window upper sill; a one-time fastener rework; and related investigative and corrective actions if necessary. We are issuing this AD to detect and correct fatigue cracking and missing fasteners of the station 320 crown frame, cracking of the window post number 3, and cracking of the window upper sill, which could result in an in-flight decompression and a loss of structural integrity of the fuselage.

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.

Request for Restoration Procedures

United Airlines (UAL) requested that figure 21 in Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015, be revised to provide airplane maintenance manual references on reinstallation of the panels and all disturbed air conditioning systems, and to include operational check procedures of all the disturbed systems.

We partially agree with UAL's comment. We agree that figure 21 in Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015, should provide robust access/restoration procedures. We disagree with delaying this AD until any needed changes to figure 21 have been incorporated. Figure 21 is not a “Required for Compliance” (RC) section of the service information and is not mandated by this AD. Therefore, operators can deviate from these instructions, as specified in paragraph (k)(4)(ii) of this AD. We have not changed this AD in this regard.

Request To Revise Discussion Section of the NPRM

Boeing requested that we revise the second sentence in the Discussion section of the NPRM, which states: "Other Model 747 airplanes, except Model 747-8F and 747-8 airplanes, are of a similar station 320 crown frame configuration." Boeing asked that the reference to Model 747-8F and Model 747-8 airplanes be removed. Boeing stated that although having a different design, Model 747-8F and Model 747-8 airplanes have a similar station 320 crown frame configuration as the other Model 747 airplanes. Boeing explained that, for Model 747-8F and Model 747-8 airplanes, it has issued service information that specifies repetitive inspections for cracking of the station 320 crown frame and is mandated by certain airworthiness limitations (AWLs).

We agree to clarify the Discussion section of the NPRM. We agree that Boeing Model 747-100, -200, -300, and -400 airplanes, and Model 747-8F and Model 747-8 airplanes, have similar station 320 crown frame configurations. However, we cannot revise the second sentence in the Discussion section of the NPRM because that particular sentence is not restated in the Discussion section of this AD. Also, as Boeing stated, the identified condition on Model 747-8F and Model 747-8 airplanes is addressed with AWLs. This AD addresses the identified unsafe condition on 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. We have not changed this AD in this regard.

Clarification of Repetitive Inspections Required by Paragraph (h) of This AD

We revised paragraph (h) of this AD, which refers to inspections specified in paragraphs (g)(1) through (g)(5) of this AD, by removing the text "for cracking in the window upper sill." That text only applies to the inspection specified in paragraph (g)(5) of this AD and not to the inspections specified in paragraphs (g)(1) through (g)(4) of this AD.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD as proposed, except for 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.

Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015. The service information describes procedures for inspections and corrective actions for cracks and missing fasteners in the inner chord and outboard webs of the station 320 crown frame, in the left and right side window post number 3, and in the window upper sill structure. 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 165 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
Inspections	Up to 193 work-hours × \$85 per hour = \$16,405 per inspection cycle	\$0	Up to \$16,405 per inspection cycle	Up to \$2,706,825 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):



2016-16-10 The Boeing Company: Amendment 39-18608; Docket No. FAA-2015-8429; Directorate Identifier 2015-NM-122-AD.

(a) Effective Date

This AD is effective September 14, 2016.

(b) Affected ADs

None.

(c) Applicability

This AD applies to 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, as identified in Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports of fatigue cracks in the station 320 crown frame in window post number 3. We are issuing this AD to detect and correct fatigue cracking and missing fasteners of the station 320 crown frame, cracking of the window post number 3, and cracking of the window upper sill, which could result in an in-flight decompression and a loss of structural integrity of the fuselage.

(f) Compliance

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

(g) Initial Inspections, Related Investigative Actions, and Corrective Actions

At the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015, except as provided by paragraphs (j)(1) and (j)(2) of this AD: Do the actions specified in paragraphs (g)(1) through (g)(5) of this AD; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015, except as required by paragraph (j)(3) of this AD. Do all applicable related investigative and corrective actions before further flight.

(1) Do a detailed inspection for cracks and missing fasteners of the station 320 crown frame.

(2) Do a surface high frequency eddy current (HFEC) inspection for cracks of the station 320 crown frame.

(3) Do a surface HFEC inspection for cracks in the web and flange surfaces of the forward segment of window post number 3.

(4) Do a detailed inspection for missing fasteners of the window upper sill.

(5) Do a surface HFEC inspection for cracks of the window upper sill.

(h) Repetitive Inspections and Post-Repair Inspections, Related Investigative Actions, and Corrective Actions

Do applicable repetitive post-repair inspections and repeat the inspections specified in paragraphs (g)(1) through (g)(5) of this AD thereafter at the applicable compliance time and intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015, except as required by paragraph (j)(3) of this AD. Do all applicable related investigative and corrective actions before further flight.

(i) Fastener Rework, Related Investigative Actions, and Corrective Actions

At the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015: Do the applicable actions (including fastener rework and a detailed inspection of the condition of the fastener hole) specified in Part 11 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015, except as specified in paragraph (j)(3) of this AD. Do all applicable related investigative and corrective actions before further flight.

(j) Exceptions to Service Information Specifications

(1) Where Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015, specifies a compliance time "after the original date of this service bulletin," this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) Where Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015, specifies a compliance time "after the Revision 1 date of this service bulletin," this AD requires compliance within the specified compliance time after the effective date of this AD.

(3) Where Boeing Alert Service Bulletin 747-53A2862, Revision 1, dated July 24, 2015, specifies to contact Boeing for repairs: Before further flight, repair, using a method approved in accordance with the procedures specified in paragraph (k)(1) of this AD.

(k) 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 (l)(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, modification, or alteration required by this AD if it is approved 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.

(4) Except as required by paragraphs (g), (h), and (j)(3) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (k)(4)(i) and (k)(4)(ii) apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(l) Related Information

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

(m) 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 747-53A2862, Revision 1, dated July 24, 2015.

(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 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 July 27, 2016.
Victor Wicklund,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.