

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-0554; Directorate Identifier 2008-NM-100-AD; Amendment 39-15522; AD 2008-10-15]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747-100, 747-100B, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Boeing Model 747-100, 747-100B, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes. This AD requires an inspection to determine if acceptable external skin doublers are installed at the stringer 6 (S-6) lap splices, between station (STA) 340 and STA 400. For airplanes without the acceptable external skin doublers, this AD requires repetitive related investigative actions and corrective actions if necessary. This AD also provides an optional terminating modification for the repetitive related investigative actions. This AD results from a report of cracked fastener holes at the right S-6 lap splice between STA 340 and STA 380. We are issuing this AD to detect and correct cracking in the fuselage skin, which could result in rapid decompression and loss of structural integrity.

DATES: This AD is effective May 20, 2008.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of May 20, 2008.

We must receive comments on this AD by July 21, 2008.

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207.

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 street address for the Docket Office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

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; telephone (425) 917-6437; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Discussion

We have received a report of cracking found at fourteen adjacent fastener holes where protruding head fasteners were installed in the upper row of the right stringer 6 (S-6) lap splice, between station (STA) 360 and STA 380. The airplane had accumulated 23,132 total flight cycles. The protruding head fasteners had been installed without external skin doublers 9,757 flight cycles earlier as one of several modification options provided in Boeing Service Bulletin 747-53-2253 (AD 90-06-06, amendment 39-6490 (55 FR 8374, March 7, 1990), requires that one of the modifications specified in the service bulletin be done). Analysis by Boeing indicates that the protruding head fastener modification and the post-modification inspections are not adequate to prevent and detect cracks at the upper row of fasteners in the S-6 lap splices before the cracks reach critical length. The post-modification inspections are given in Boeing Service Bulletin 747-53-2253 and are required by AD 90-23-14, amendment 39-6801 (55 FR 46652, November 6, 1990). Cracking in the fuselage skin, if not corrected, could result in rapid decompression and loss of structural integrity.

Relevant Service Information

We reviewed Boeing Alert Service Bulletin 747-53A2748, dated May 9, 2008. The alert service bulletin describes procedures for an external inspection to determine if acceptable external skin doublers are installed at the left- and right-side S-6 lap splices, between STA 340 and STA 400. For airplanes without the acceptable external skin doublers, the alert service bulletin specifies doing repetitive related investigative actions and corrective actions if necessary. Related investigative actions include external high frequency eddy current (HFEC) and low frequency eddy current (LFEC) inspections of the skin for cracking, as applicable. Corrective actions include repairing cracking and repeating related investigative actions, or modifying the airplane by installing acceptable external skin doublers at both the left- and right-side S-6 lap splices (includes doing an open-hole HFEC inspection of the skin for cracking, and trimming out cracking if necessary). Doing the modification would end the repetitive related investigative actions.

Boeing Alert Service Bulletin 747-53A2748 refers to Boeing Service Bulletin 747-53-2253, Revision 3, dated March 24, 1994; and Boeing Service Bulletin 747-53-2272, Revision 18, dated May 16, 2002; as additional sources of service information for accomplishment of the modification (installation of acceptable external skin doublers).

FAA's Determination and Requirements of This AD

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. This AD requires an external inspection to determine if acceptable external skin doublers are installed at the S-6 lap splices, between STA 340 and STA 400. For airplanes without the acceptable external skin doublers, this AD requires repetitive related investigative actions, as applicable, and corrective actions if necessary. This AD also provides an optional terminating modification for the repetitive related investigative actions.

Interim Action

We consider this AD interim action. We are currently considering requiring the modification (installation of acceptable external skin doublers), which would terminate the repetitive related investigative actions. However, the planned compliance time for the modification would allow enough time to provide notice and opportunity for prior public comment on the merits of the modification.

FAA's Justification and Determination of the Effective Date

We have determined that cracking of multiple adjacent fastener holes at the S-6 lap splices adjacent to the flight deck windows could join together and result in large cracks. Considering the number of accumulated flight cycles on the affected Boeing Model 747 airplanes and the consequences of cracking, we have determined that immediate inspections are necessary. Because of our requirement to promote safe flight of civil aircraft and thus, the critical need to assure the structural integrity of the fuselage and the short compliance time involved with this action, this AD must be issued immediately.

Because an unsafe condition exists that requires the immediate adoption of this AD, we find that notice and opportunity for prior public comment hereon are impracticable and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not provide you with notice and an opportunity to provide your comments before it becomes effective. However, we invite you to send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2008-0554; Directorate Identifier 2008-NM-100-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about 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), and
- (3) 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.

You can find our regulatory evaluation and the estimated costs of compliance in the AD Docket.

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 AD:



2008-10-15 Boeing: Amendment 39-15522. Docket No. FAA-2008-0554; Directorate Identifier 2008-NM-100-AD.

Effective Date

- (a) This airworthiness directive (AD) is effective May 20, 2008.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to Boeing Model 747-100, 747-100B, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes, certificated in any category; as identified in Boeing Alert Service Bulletin 747-53A2748, dated May 9, 2008.

Unsafe Condition

(d) This AD results from a report of cracked fastener holes at the right stringer 6 (S-6) lap splice between station (STA) 340 and STA 380. We are issuing this AD to detect and correct cracking in the fuselage skin, which could result in rapid decompression and loss of structural integrity.

Compliance

- (e) Comply with this AD within the compliance times specified, unless already done.

Service Bulletin Reference Paragraph

(f) The term "alert service bulletin," as used in this AD, means the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2748, dated May 9, 2008.

Inspection for Acceptable External Skin Doublers

(g) For airplanes identified as Group 1, Configuration 2, in Boeing Alert Service Bulletin 747-53A2748, dated May 9, 2008: At the latest of the times specified in paragraphs (g)(1), (g)(2), and (g)(3) of this AD, do an external general visual inspection to determine if acceptable external skin doublers are installed at the left- and right-side S-6 lap splices, in accordance with Part 1 of the alert service bulletin.

- (1) Prior to the accumulation of 10,000 total flight cycles.
- (2) Within 8,000 flight cycles after a modification was done in accordance with Boeing Service Bulletin 747-53-2253.
- (3) Within 15 days or 100 flight cycles after the effective date of this AD, whichever occurs first.

Acceptable External Skin Doublers Found at Both Sides

(h) If, during the inspection required by paragraph (g) of this AD, acceptable external skin doublers in accordance with the alert service bulletin are found installed at both the left- and right-side S-6 lap splices, no further work is required by this AD.

Acceptable External Skin Doublers Not Found—Repetitive Related Investigative Actions and Corrective Actions

(i) If, during the inspection required by paragraph (g) of this AD, acceptable external skin doublers in accordance with alert service bulletin are not found installed at either the left- or right-side S-6 lap splice: Before further flight, do all applicable related investigative and corrective actions by doing all actions specified in Part 2 of the alert service bulletin. Repeat the applicable related investigative actions thereafter at intervals not to exceed 300 flight cycles until the modification specified in paragraph (j) of this AD is done.

Optional Terminating Modification

(j) Modifying the airplane by installing acceptable external skin doublers at both the left- and right-side S-6 lap splices (including doing an open-hole HFEC inspection of the skin for cracking, and trimming out cracking as applicable) in accordance with the alert service bulletin terminates the repetitive related investigative actions required by this AD.

Note 1: The alert service bulletin refers to Boeing Service Bulletins 747-53-2253, Revision 3, dated March 24, 1994; and 747-53-2272, Revision 18, dated May 16, 2002; as additional sources of service information for accomplishment of the modification (installation of acceptable external skin doublers).

Note 2: AD 90-06-06, amendment 39-6490, requires, among other actions, one of the modification options specified in Boeing Service Bulletin 747-53-2253, dated December 14, 1984.

Note 3: AD 90-23-14, amendment 39-6801, requires that inspections of modifications done in accordance with Boeing Service Bulletin 747-53-2253, and applicable repairs, be done in accordance with Boeing Service Bulletin 747-53-2253, Revision 2, dated March 29, 1990.

Alternative Methods of Compliance (AMOCs)

(k)(1) The Manager, Seattle Aircraft Certification Office, FAA, ATTN: 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; has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(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 an Authorized Representative for the Boeing Commercial Airplanes Delegation Option Authorization Organization who 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.

Material Incorporated by Reference

(1) You must use Boeing Alert Service Bulletin 747-53A2748, dated May 9, 2008, to do the actions required by this AD, unless the AD specifies otherwise.

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

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207.

(3) You may review copies of the service information incorporated by reference at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington; or 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/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on May 13, 2008.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

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