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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2009-0636; Directorate Identifier 2009-NM-031-AD; Amendment 39-16158; AD 2010-01-02]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Model 747-100B SUD, -200B, -300, -400, and -400D Series Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD), which applies to certain Model 747-100B SUD, -200B, -300, -400, and -400D series airplanes. That AD currently requires repetitive inspections for cracking in fuselage stringers 8L, 8R, 10L, and 10R at body stations 460, 480, and 500 frame locations; and repair if necessary. This new AD requires revising the applicability to include an additional airplane, and reduces compliance times for the initial inspection and repetitive intervals for Model 747-400 series airplanes that have been converted to the large cargo freighter configuration. This AD results from findings of cracking in fuselage stringers 8L, 8R, 10L, and 10R at body stations 460, 480, and 500 frame locations. We are issuing this AD to detect and correct fatigue cracking in certain fuselage stringers, which, if left undetected, could result in fuselage skin cracking that reduces the structural integrity of the skin panel, and consequent rapid depressurization of the airplane.

DATES: This AD becomes effective February 24, 2010.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of February 24, 2010.

The Director of the Federal Register previously approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2484, dated June 26, 2003, as of August 30, 2005 (70 FR 43020, July 26, 2005).

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; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

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 (telephone 800-647-5527) is the 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, Seattle Aircraft Certification Office, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6437; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that supersedes AD 2005-15-08, amendment 39-14197 (70 FR 43020, July 26, 2005). The existing AD applies to certain Model 747-100B SUD, -200B, -300, -400, and -400D series airplanes. That NPRM was published in the Federal Register on July 14, 2009 (74 FR 33928). That NPRM proposed to require repetitive inspections for cracking in fuselage stringers 8L, 8R, 10L, and 10R at body stations 460, 480, and 500 frame locations; and repair if necessary.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comment that has been received on the NPRM.

Request for Change to Paragraph (g) of This AD

Boeing requests a change to paragraph (g) of the NPRM. The NPRM proposes to require repeating the inspections specified in paragraph (g) at intervals not to exceed 3,000 flight cycles until the requirements of paragraph (l) of the proposed AD are accomplished. Boeing states that accomplishing the repair specified in paragraph (k) of the proposed AD terminates the repetitive inspections required by paragraph (g). Boeing therefore requests that we revise paragraph (g) of the proposed AD to also refer to paragraph (k) as a terminating action.

We partially agree. The repetitive inspections are terminated after accomplishment of paragraph (k) or (l) of this AD, but only at the stringer locations that are modified or repaired. We have revised paragraphs (g), (i), (j), and (l) of this final rule accordingly.

Explanation of Changes Made to This AD

We have revised this AD to identify the legal name of the manufacturer as published in the most recent type certificate data sheet for the affected airplane models.

Conclusion

We have carefully reviewed the available data, including the comment that has been received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

There are about 246 airplanes of the affected design in the worldwide fleet. The following table provides the estimated costs for U.S. operators to comply with this AD.

Estimated Costs					
Action	Work hours	Average labor rate per hour	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
Inspection (required by AD 2005-15-08)	3	\$80	\$240 per inspection cycle	69	\$16,560 per inspection cycle
Inspection required by this AD	3	\$80	\$240 per inspection cycle	70	\$16,800 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); 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the ADDRESSES section for a location to examine the regulatory evaluation.

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 Federal Aviation Administration (FAA) amends § 39.13 by removing amendment 39-14197 (70 FR 43020, July 26, 2005) and by adding the following new airworthiness directive (AD):



2010-01-02 The Boeing Company: Amendment 39-16158. Docket No. FAA-2009-0636; Directorate Identifier 2009-NM-031-AD.

Effective Date

- (a) This AD becomes effective February 24, 2010.

Affected ADs

- (b) This AD supersedes AD 2005-15-08, Amendment 39-14197.

Applicability

- (c) This AD applies to The Boeing Company Model 747-100B SUD, -200B, -300, -400, and -400D series airplanes, certificated in any category; as identified in Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009.

Subject

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

Unsafe Condition

- (e) This AD results from findings of cracking in fuselage stringers 8L, 8R, 10L, and 10R at body station 460, 480, and 500 frame locations. We are issuing this AD to detect and correct fatigue cracking in the specified fuselage stringers, which, if left undetected, could result in fuselage skin cracking that reduces the structural integrity of the skin panel, and consequent rapid depressurization of the airplane.

Compliance

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

Requirements of AD 2005-15-08

Inspection for Certain Airplanes Subject to AD 2005-15-08 With New Service Bulletin

- (g) For airplanes identified in Boeing Alert Service Bulletin 747-53A2484, dated June 26, 2003, except airplanes identified in paragraph (j) of this AD, do a detailed inspection for cracking in fuselage stringers 8L, 8R, 10L, and 10R at body station 460, 480, and 500 frame locations, in accordance with Part 1 of the Accomplishment Instructions in Boeing Alert Service Bulletin 747-53A2484, dated June 26, 2003; or Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009. Do the inspections at the applicable time specified in paragraph (g)(1) or (g)(2) of this AD. Repeat the inspection thereafter at intervals not to exceed 3,000 flight cycles until the requirements of

paragraph (k) or (l) of this AD are accomplished. No further action is required by this AD for any stringer that is repaired or modified in accordance with paragraph (k) or (l) of this AD. After the effective date of this AD, use only Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009.

(1) For airplanes with 19,000 total flight cycles or less as of August 30, 2005 (the effective date of AD 2005-15-08): Prior to the accumulation of 8,000 total flight cycles, or within 2,000 flight cycles after August 30, 2005, whichever is later, not to exceed 20,000 total flight cycles.

(2) For airplanes with more than 19,000 total flight cycles as of August 30, 2005: Within 1,000 flight cycles after August 30, 2005.

Note 1: For the purposes of this AD, a detailed inspection is: “An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirror, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate procedures may be required.”

New Requirements of This AD

Inspection: Variable Number RS699

(h) For Model 747 airplane variable number RS699, do a detailed inspection for cracking in fuselage stringers 8L, 8R, 10L, and 10R at body station 460, 480, and 500 frame locations, in accordance with Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009, at the later of the times specified in paragraphs (h)(1) and (h)(2) of this AD.

(1) Before the accumulation of 8,000 total flight cycles.

(2) Within 2,000 flight cycles after the effective date of this AD.

(i) For Model 747 airplane variable number RS699, repeat the inspection specified in paragraph (h) of this AD thereafter at intervals not to exceed 3,000 flight cycles until the actions specified in paragraph (k) or (l) of this AD are accomplished. No further action is required by this AD for any stringer that is repaired or modified in accordance with paragraph (k) or (l) of this AD.

Inspection: Group 4 Airplanes

(j) For Group 4 airplanes as identified in Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009, do a detailed inspection for cracking in fuselage stringers 8L, 8R, 10L, and 10R at body station 460, 480, and 500 frame locations, within 1,000 flight cycles after the effective date of this AD. Do the actions in accordance with Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009. Repeat the inspection thereafter at intervals not to exceed 1,500 flight cycles until the actions specified in paragraph (k) or (l) of this AD are accomplished. No further action is required by this AD for any stringer that is repaired or modified in accordance with paragraph (k) or (l) of this AD.

Repair

(k) If cracking is found during any inspection required by this AD: Before further flight, repair the affected stringer in accordance with Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2484, dated June 26, 2003; or Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009. After the effective date of this AD, use only Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009. Accomplishing the repair terminates the repetitive inspections required by this AD for that repaired stringer location only.

Optional Terminating Action

(l) Installing new frame clips and new doublers, and repairing as applicable, in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2484, dated June 26, 2003; or Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009; terminates the repetitive inspections required by this AD for that modified stringer only. After the effective date of this AD, use only Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009.

Alternative Methods of Compliance (AMOCs)

(m)(1) The Manager, Seattle ACO, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Ivan Li, Aerospace Engineer, Airframe Branch, ANM-120S, Seattle Aircraft Certification Office (ACO), FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6437; fax (425) 917-6590; or e-mail information to 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(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 principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office. The AMOC approval letter must specifically reference this AD.

(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.

(4) AMOCs approved previously in accordance with AD 2005-15-08, are approved as AMOCs for the corresponding provisions of this AD.

Material Incorporated by Reference

(n) You must use Boeing Alert Service Bulletin 747-53A2484, dated June 26, 2003; and Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009; as applicable; 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 Boeing Service Bulletin 747-53A2484, Revision 1, dated February 12, 2009, under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The Director of the Federal Register previously approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2484, dated June 26, 2003, on August 30, 2005 (70 FR 43020, July 26, 2005).

(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; e-mail me.boecom@boeing.com; 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 or 425-227-1152.

(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/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on December 17, 2009.
Stephen P. Boyd,
Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.
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