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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2007-28015; Directorate Identifier 2006-NM-210-AD; Amendment 39-15147; AD 2007-16-08]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-300, 747-400, 747-400D, and 747SR 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 all Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-300, 747-400, 747-400D, and 747SR series airplanes. That AD currently requires repetitive inspections for cracking of the station 800 frame assembly, and repair if necessary. This new AD revises certain applicabilities and compliance times in the existing AD. This AD results from several reports of cracks of the station 800 frame assembly on airplanes that had accumulated fewer total flight cycles than the initial inspection threshold in the original AD. We are issuing this AD to detect and correct fatigue cracks that could extend and fully sever the frame, which could result in development of skin cracks that could lead to rapid depressurization of the airplane.

DATES: This AD becomes effective September 13, 2007.

On July 17, 2006 (71 FR 33595, June 12, 2006), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2451, Revision 1, dated November 10, 2005.

On August 30, 2001 (66 FR 38891, July 26, 2001), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2451, including Appendix A, dated October 5, 2000.

ADDRESSES: You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC.

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

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:

Examining the Docket

You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Operations office (telephone (800) 647-5527) is located on the ground floor of the West Building at the DOT street address stated in the ADDRESSES section.

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that supersedes AD 2006-12-12, amendment 39-14638 (71 FR 33595, June 12, 2006). The existing AD applies to all Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-300, 747-400, 747-400D, and 747SR series airplanes. That NPRM was published in the Federal Register on April 26, 2007 (72 FR 20782). That NPRM proposed to continue to require repetitive inspections for cracking of the station 800 frame assembly, and repair if necessary. That NPRM also proposed to revise certain applicabilities and compliance times in the existing AD.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the single comment that has been received on the NPRM. The commenter, Boeing, supports the NPRM.

Clarification of Alternative Method of Compliance (AMOC) Paragraph

We have revised this action to clarify the appropriate procedure for notifying the principal inspector before using any approved AMOC on any airplane to which the AMOC applies.

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 change described previously. We have determined that this change will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

There are about 900 airplanes of the affected design in the worldwide fleet. This AD affects about 156 airplanes of U.S. registry.

The repetitive inspections take between 12 and 14 work hours per airplane, depending on the airplane configuration. The average labor rate is \$80 per work hour. Based on these figures, the estimated cost of the currently required actions is between \$149,760 and \$174,720, or between \$960 and \$1,120 per airplane, per inspection cycle.

The repetitive inspections of the expanded area take between 18 and 20 work hours per airplane, at an average labor rate of \$80 per work hour. Based on these figures, the estimated cost of the new

actions specified in this AD for U.S. operators is between \$224,640 and \$249,600, or between \$1,440 and \$1,600 per airplane, 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 39-14638 (71 FR 33595, June 12, 2006) and by adding the following new airworthiness directive (AD):



2007-16-08 Boeing: Amendment 39-15147. Docket No. FAA-2007-28015; Directorate Identifier 2006-NM-210-AD.

Effective Date

(a) This AD becomes effective September 13, 2007.

Affected ADs

(b) This AD supersedes AD 2006-12-12.

Applicability

(c) This AD applies to all Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-300, 747-400, 747-400D, and 747SR series airplanes, certificated in any category.

Unsafe Condition

(d) This AD results from several reports of cracks of the station 800 frame assembly on airplanes that had accumulated fewer total flight cycles than the initial inspection threshold in the original AD. We are issuing this AD to detect and correct fatigue cracks that could extend and fully sever the frame, which could result in development of skin cracks that could lead to rapid depressurization of the airplane.

Compliance

(e) 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 2006-12-12 With Revised Applicabilities and Thresholds

Repetitive Inspections

(f) For Boeing Model 747-100, 747-100B, 747-200B, 747-200C, and 747SR series airplanes, as identified in Boeing Alert Service Bulletin 747-53A2451, including Appendix A, dated October 5, 2000: Do detailed, surface high-frequency eddy current (HFEC), and open-hole HFEC inspections, as applicable, for cracking of the station 800 frame assembly (including the inner chord strap, angles, and exposed web) between stringers 14 and 18, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2451, including Appendix A, dated October 5, 2000; or Boeing Alert Service Bulletin 747-53A2451, Revision 1, dated November 10, 2005; after the effective date of this AD, only Revision 1 of the service bulletin may be used. Except as provided by paragraph (g) of this AD, do the inspection at the applicable time specified in Table 1 or Table 2 of this AD, as applicable, and repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles until the initial inspections required by paragraph (h) of this AD are accomplished.

Table 1 – Compliance Times for Boeing Model 747-100, 747-100B, 747-200B, and 747-200C Series Airplanes

| Total flight cycles as of August 30, 2001 (the effective date of AD 2001-14-22, amendment 39-12333, which was superseded by AD 2006-12-12) | Do the inspection in paragraph (f) of this AD at this time |
|---|--|
| (1) Fewer than 19,000. | Before the accumulation of 19,000 total flight cycles, or within 1,500 flight cycles after August 30, 2001, whichever comes later. |
| (2) 19,000 or more, but 24,250 or fewer. | Within 1,500 flight cycles or 12 months after August 30, 2001, whichever comes first. |
| (3) 24,251 or more. | Within 750 flight cycles or 12 months after August 30, 2001, whichever comes first. |

Table 2 – Compliance Times for Boeing Model 747SR Series Airplanes

| Total flight cycles as of the effective date of this AD | Do the inspection in paragraph (f) of this AD at this time |
|--|--|
| (4) Fewer than 19,000. | Before the accumulation of 19,000 total flight cycles, or within 1,500 flight cycles after the effective date of this AD, whichever comes later. |
| (5) 19,000 or more, but 24,250 or fewer. | Within 1,500 flight cycles or 12 months after the effective date of this AD, whichever comes first. |
| (6) 24,251 or more. | Within 750 flight cycles or 12 months after the effective date of this AD, whichever comes first. |

Adjustments to Compliance Time: Cabin Differential Pressure

(g) For Boeing Model 747-100, 747-100B, 747-200B, and 747-200C series airplanes, as identified in Boeing Alert Service Bulletin 747-53A2451, including Appendix A, dated October 5, 2000, that were inspected before July 17, 2006 (the effective date of AD 2006-12-12); and for Boeing Model 747SR airplanes, as identified in Boeing Alert Service Bulletin 747-53A2451, that were inspected before the effective date of this AD: Except as provided by paragraph (i) of this AD, for the purposes of calculating the compliance threshold and repetitive interval for the actions required by paragraph (f) of this AD, the number of flight cycles in which cabin differential pressure is at 2.0 pounds per square inch (psi) or less need not be counted when determining the number of flight cycles that have occurred on the airplane, provided that the flight cycles with momentary spikes in cabin differential pressure above 2.0 psi are included as full pressure cycles. For this provision to apply, all cabin pressure records must be maintained for each airplane: No fleet-averaging of cabin pressure is allowed.

Repetitive Inspections of Expanded Area at a New Reduced Threshold

(h) For all airplanes, at the applicable time specified in Table 3 of this AD, except as provided by paragraph (i) of this AD, do the following inspections of the station 800 frame assembly in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2451, Revision 1, dated November 10, 2005: A detailed inspection for cracking of the inner chord strap,

angles, and exposed web adjacent to the inner chords on the station 800 frame between stringer 14 and stringer 18; and surface HFEC and open-hole HFEC inspections for cracking of the inner chord strap and angles. Do the initial inspections at the applicable time specified in Table 3 of this AD, and repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. Accomplishing the initial inspections required by this paragraph terminates the inspection requirements of paragraph (f) of this AD.

Table 3 – Revised Compliance Times

| Total flight cycles as of July 17, 2006 – | Do the inspections in paragraph (h) of this AD at this time – |
|--|---|
| (1) Fewer than 16,000. | Before the accumulation of 16,000 total flight cycles, or within 1,500 flight cycles after July 17, 2006, whichever comes later. |
| (2) 16,000 or more, but 21,250 or fewer. | Within 1,500 flight cycles after July 17, 2006, or within 1,000 flight cycles after the effective date of this AD, whichever comes later. |
| (3) 21,251 or more. | Within 750 flight cycles after July 17, 2006, or within 500 flight cycles after the effective date of this AD, whichever comes later. |

Adjustments to Compliance Time: Cabin Differential Pressure

(i) For the purposes of calculating the compliance threshold and repetitive interval for actions required by paragraphs (f) and (h) of this AD, for Boeing Model 747-100, 747-100B, 747-200B, and 747-200C series airplanes, on or after July 17, 2006; and for Boeing Model 747SR series airplanes, on or after the effective date of this AD: All flight cycles, including the number of flight cycles in which cabin differential pressure is at 2.0 psi or less, must be counted when determining the number of flight cycles that have occurred on the airplane. However, for airplanes on which the repetitive interval for the actions required by paragraph (f) of this AD have been calculated in accordance with paragraph (g) of this AD by excluding the number of flight cycles in which cabin differential pressure is at 2.0 pounds psi or less: Continue to adjust the repetitive inspection interval in accordance with paragraph (g) of this AD until the initial inspections required by paragraph (h) of this AD are accomplished. Thereafter, no adjustment to compliance times based on paragraph (g) of this AD is allowed.

Repair

(j) If any cracking is detected during any inspection required by paragraph (f) or (h) of this AD, and the service bulletin specifies to contact Boeing for appropriate action: Before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

No Report Required

(k) Although the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2451, including Appendix A, dated October 5, 2000; and Boeing Alert Service Bulletin 747-53A2451, Revision 1, dated November 10, 2005; describe procedures for reporting certain information to the manufacturer, this AD does not require that report.

Alternative Methods of Compliance (AMOCs)

(l)(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested in accordance with 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.

(4) AMOCs approved previously in accordance with AD 2001-14-22, are approved as AMOCs for the corresponding provisions of paragraphs (f) and (j) of this AD.

(5) AMOCs approved previously in accordance with AD 2006-12-12, are approved as alternative methods of compliance with this AD.

Material Incorporated by Reference

(m) You must use Boeing Alert Service Bulletin 747-53A2451, including Appendix A, dated October 5, 2000; or Boeing Alert Service Bulletin 747-53A2451, Revision 1, dated November 10, 2005; as applicable, to perform the actions that are required by this AD, unless the AD specifies otherwise.

(1) On July 17, 2006 (71 FR 33595, June 12, 2006), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2451, Revision 1, dated November 10, 2005.

(2) On August 30, 2001 (66 FR 38891, July 26, 2001), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2451, including Appendix A, dated October 5, 2000.

(3) Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for a copy of this service information. You may review copies 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/cfr/ibr-locations.html>.

Issued in Renton, Washington, on July 30, 2007.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E7-15416 Filed 8-8-07; 8:45 am]