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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-22715; Directorate Identifier 2005-NM-108-AD; Amendment 39-14503; AD 2006-05-06]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747 Airplanes

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

ACTION: Final rule.

SUMMARY: The FAA is superseding three existing airworthiness directives (ADs) that apply to certain Boeing Model 747 airplanes. The existing ADs currently require repetitive inspections of the body station (BS) 2598 bulkhead, and corrective action if necessary. This new AD adds a requirement to modify the bulkhead, including a one-time inspection and corrective action if necessary, which terminates certain repetitive inspections. This AD also requires a post-modification inspection of the modified area. This AD results from new reports of cracking in all three areas that require inspection in accordance with the existing ADs. We are issuing this AD to prevent fatigue cracking of the BS 2598 bulkhead structure, which could result in inability of the structure to carry horizontal stabilizer flight loads, and loss of controllability of the airplane.

DATES: This AD becomes effective April 13, 2006.

The Director of the Federal Register approved the incorporation by reference of certain publications as of April 13, 2006.

On October 27, 2003 (68 FR 54990, September 22, 2003), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2467, dated July 26, 2001.

On August 28, 2001 (66 FR 38365, July 24, 2001), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2427, Revision 2, dated October 5, 2000.

On August 16, 2001 (66 FR 36443, July 12, 2001), the Director of the Federal Register approved the incorporation by reference of Boeing Service Bulletin 747-53A2449, Revision 1, dated May 24, 2001.

ADDRESSES: You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., Nassif Building, Room PL-401, 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: Nicholas Kusz, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6432; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Examining the Docket

You may examine the airworthiness directive (AD) docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the 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 would supersede the ADs identified in the following table:

EXISTING ADS			
AD	Amendment	Federal Register reference	Requirements
2001-14-07	39-12318	66 FR 36443 (July 12, 2001)	Repetitive high-frequency eddy current (HFEC) inspections to detect cracking of the bulkhead frame support at body station (BS) 2598 under the hinge support fittings of the horizontal stabilizer, and repair if necessary.
2001-15-03	39-12337	66 FR 38365 (July 24, 2001)	Repetitive HFEC inspections to detect cracking of the forward and aft inner chords and the splice fitting of the forward inner chord of the BS 2598 bulkhead, and repair if necessary.
2003-19-08	39-13311	68 FR 54990 (September 22, 2003).	Repetitive detailed inspections to detect discrepancies of certain areas of the forward and aft sides of the BS 2598 bulkhead, and repair if necessary.

The existing ADs apply to certain Boeing Model 747 airplanes. That NPRM was published in the Federal Register on October 19, 2005 (70 FR 60744). That NPRM proposed to continue to require repetitive inspections of the BS 2598 bulkhead, and corrective action if necessary. That NPRM also proposed to add a requirement to modify the bulkhead, including a one-time inspection and corrective action if necessary, which would terminate certain repetitive inspections. That NPRM also proposed to require a post-modification inspection of the modified area.

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. The commenter 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 1,147 airplanes of the affected design in the worldwide fleet and 280 U.S.-registered airplanes. The following table provides the estimated costs for U.S. operators to comply with this AD.

ESTIMATED COSTS					
Actions	Work hours	Average hourly labor rate	Parts cost	Cost per airplane	Fleet cost
Inspection required by AD 2001-14-07 (per inspection cycle)	18	\$65	\$0	\$1,170	\$327,600
HFEC inspection required by AD 2001-15-03 (per inspection cycle)	2	65	0	130	36,400
Detailed inspection required by AD 2001-15-03 (per inspection cycle)	2	65	0	130	36,400
Inspection required by AD 2003-19-08 (per inspection cycle)	4	65	0	260	72,800
Modification	126	65	33,716	41,906	11,733,680

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 39-12318 (66 FR 36443, July 12, 2001), amendment 39-12337 (66 FR 38365, July 24, 2001), and amendment 39-13311 (68 FR 54990, September 22, 2003), and by adding the following new airworthiness directive (AD):

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

www.faa.gov/aircraft/safety/alerts/

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2006-05-06 Boeing: Amendment 39-14503. Docket No. FAA-2005-22715; Directorate Identifier 2005-NM-108-AD.

Effective Date

- (a) This AD becomes effective April 13, 2006.

Affected ADs

- (b) This AD supersedes ADs 2001-14-07, 2001-15-03, and 2003-19-08.

Applicability

- (c) This AD applies to Boeing 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; line numbers 1 through 1307 inclusive.

Unsafe Condition

- (d) This AD results from reports of cracking in areas required to be inspected by the superseded ADs identified in paragraph (b) of this AD. We are issuing this AD to prevent fatigue cracking of the body station (BS) 2598 bulkhead structure, which could result in inability of the structure to carry horizontal stabilizer flight loads, and loss of controllability 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.

Restatement of AD 2001-14-07

Repetitive High Frequency Eddy Current (HFEC) Inspections

- (f) Before the accumulation of 10,000 total flight cycles, or within 1,000 flight cycles after August 16, 2001 (the effective date of AD 2001-14-07), whichever occurs later: Do an open-hole HFEC inspection to find cracking of the bulkhead frame support under the hinge support fittings of the horizontal stabilizer on the left and right sides at BS 2598, in accordance with Figure 2 of the Accomplishment Instructions of Boeing Service Bulletin 747-53A2449, Revision 1, dated May 24, 2001; or Revision 2, dated March 14, 2002. Repeat the inspection after that at intervals not to exceed

3,000 flight cycles. Inspections accomplished before August 16, 2001, per Boeing Alert Service Bulletin 747-53A2449, dated June 8, 2000, are considered acceptable for compliance with the applicable inspection specified in this paragraph.

Repair

(g) If any cracking is found during any inspection required by paragraph (f) of this AD, before further flight, repair in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA, or using a method approved in accordance with paragraph (n) of this AD.

Restatement of Certain Requirements of AD 2001-15-03

Repetitive Inspections

(h) Do a surface HFEC inspection of the forward and aft inner chords, the frame support, and the splice fitting of the forward inner chord of the upper corner of the station 2598 bulkhead to find cracking, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2427, Revision 2, dated October 5, 2000; or Revision 3, dated September 27, 2001; at the latest of the times specified in paragraphs (h)(1) and (h)(2) of this AD, as applicable. Repeat the inspection after that at intervals not to exceed 1,500 flight cycles.

(1) For airplanes having line numbers 1 through 1241 inclusive:

(i) Before the accumulation of 6,000 total flight cycles.

(ii) Within 500 flight cycles after August 28, 2001 (the effective date of AD 2001-15-03).

(iii) For airplanes inspected before August 28, 2001, in accordance with Boeing Alert Service Bulletin 747-53A2427, dated December 17, 1998 (including inspections of the splice fitting), or Revision 1, dated October 28, 1999: Within 1,500 flight cycles after accomplishment of the last inspection done in accordance with the original service bulletin or Revision 1, as applicable.

(2) For airplanes having line numbers 1242 through 1307 inclusive:

(i) Before the accumulation of 16,000 total flight cycles.

(ii) Within 500 flight cycles after August 28, 2001.

(iii) For airplanes inspected before August 28, 2001, in accordance with Boeing Alert Service Bulletin 747-53A2427, dated December 17, 1998 (including inspections of the splice fitting), or Revision 1, dated October 28, 1999: Within 1,500 flight cycles after accomplishment of the last inspection done in accordance with the original service bulletin or Revision 1, as applicable.

Repair

(i) If any cracking is found during the inspections required by paragraph (h) of this AD, before further flight, repair in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2427, Revision 2, dated October 5, 2000; or Revision 3, dated September 27, 2001; except where the alert service bulletin specifies that the manufacturer may be contacted for disposition of certain repair conditions, before further flight, repair in accordance with a method approved by the Manager, Seattle ACO, or using a method approved in accordance with the procedures specified in paragraph (n) of this AD.

Restatement of AD 2003-19-08

Repetitive Inspections

(j) Before the accumulation of 10,000 total flight cycles, or within 1,000 flight cycles after October 27, 2003 (the effective date of AD 2003-19-08), whichever is later: Do a detailed inspection of the body station 2598 bulkhead for discrepancies (cracking, elongated fastener holes) of the areas specified in paragraphs (j)(1) and (j)(2) of this AD, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2467, dated July 26, 2001; or Revision 1, dated April 28, 2005. Repeat the inspections after that at intervals not to exceed 3,000 flight cycles.

(1) The lower aft inner chords.

(2) The upper aft outer chords, and the diagonal brace attachment fittings, flanges, and rods.

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 mirrors magnifying lenses, etc. may be necessary. Surface cleaning and elaborate procedures may be required."

Repair

(k) If any discrepancy is found during any inspection required by paragraph (j) of this AD: Before further flight, repair in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2467, dated July 26, 2001; or Revision 1, dated April 28, 2005. If the service bulletin specifies to contact Boeing for appropriate action: Before further flight, repair in accordance with a method approved by the Manager, Seattle ACO, or using a method approved in accordance with the procedures specified in paragraph (n) of this AD.

New Requirements of This AD

Modification

(l) Before the accumulation of 20,000 total flight cycles, or within 48 months after the effective date of this AD, whichever occurs later: Modify the bulkhead by doing all applicable actions including surface and open-hole HFEC inspections for cracking of the upper forward inner chord, aft inner chord, upper splice fitting, and frame support fitting, as specified in the Accomplishment Instructions of Boeing Service Bulletin 747-53-2473, dated March 24, 2005. Repair any cracks before further flight in accordance with the service bulletin. Where the service bulletin specifies that the manufacturer may be contacted for disposition of certain repair conditions: Before further flight, repair the cracks using a method approved in accordance with the procedures specified in paragraph (n) of this AD. Accomplishment of the modification terminates the repetitive inspections required by paragraphs (f), (h), and (j)(1) of this AD.

Inspection

(m) Within 20,000 flight cycles after the modification required by paragraph (l) of this AD, inspect the BS 2598 bulkhead for cracks, and repair any cracks before further flight, in accordance with a method approved by the Manager, Seattle ACO.

Alternative Methods of Compliance (AMOCs)

(n)(1) The Manager, Seattle ACO, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) AMOCs approved previously according to AD 2000-08-21, amendment 39-11707, and AD 2001-15-03 are approved as AMOCs for the corresponding requirements of paragraphs (h) and (i) of this AD. (AD 2000-08-21 was superseded by AD 2001-15-03.)

(3) AMOCs approved previously according to AD 2001-14-07 are approved as AMOCs for the corresponding requirements of paragraphs (f) and (g) of this AD.

(4) AMOCs approved previously according to AD 2003-19-08 are approved as AMOCs for the corresponding requirements of paragraphs (j) and (k) of this AD.

(5) Before using any AMOC approved in accordance with 14 CFR 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

(6) 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

(o) You must use the service information identified in Table 1 of this AD, as applicable, to perform the actions that are required by this AD, unless the AD specifies otherwise.

TABLE 1.—ALL MATERIAL INCORPORATED BY REFERENCE

Boeing service bulletin	Revision level	Date
Alert Service Bulletin 747-53A2427	2	October 5, 2000.
Alert Service Bulletin 747-53A2427	3	September 27, 2001.
Alert Service Bulletin 747-53A2467	Original	July 26, 2001.
Service Bulletin 747-53A2467	1	April 28, 2005.
Service Bulletin 747-53-2473	Original	March 24, 2005.
Service Bulletin 747-53A2449	1	May 24, 2001.
Service Bulletin 747-53A2449	2	March 14, 2002.

(1) The Director of the Federal Register approved the incorporation by reference of service bulletins identified in Table 2 of this AD, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

TABLE 2.—NEW MATERIAL INCORPORATED BY REFERENCE

Boeing service bulletin	Revision level	Date
Alert Service Bulletin 747-53A2427	3	September 27, 2001.
Service Bulletin 747-53A2467	1	April 28, 2005.
Service Bulletin 747-53-2473	Original	March 24, 2005.
Service Bulletin 747-53A2449	2	March 14, 2002.

(2) On October 27, 2003 (68 FR 54990, September 22, 2003), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2467, dated July 26, 2001.

(3) On August 28, 2001 (66 FR 38365, July 24, 2001), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2427, Revision 2, dated October 5, 2000.

(4) On August 16, 2001 (66 FR 36443, July 12, 2001), the Director of the Federal Register approved the incorporation by reference of Boeing Service Bulletin 747-53A2449, Revision 1, dated May 24, 2001.

(5) 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 Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., Room PL-401, Nassif Building, Washington, DC; on the Internet at <http://dms.dot.gov>; or at the National Archives and Records Administration (NARA). For information on the availability of this material at the 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 February 22, 2006.

Michael J. Kaszycki,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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of Transportation

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