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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2006-24865; Directorate Identifier 2005-NM-194-AD; Amendment 39-14771; AD 2006-20-02]

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 an existing airworthiness directive (AD), which applies to certain Boeing Model 747 airplanes. That AD currently requires inspections to detect disbonding, corrosion, and cracking at the longitudinal rows of fasteners in the bonded skin panels in section 41 of the fuselage, and repair, if necessary. This new AD adds airplanes to the applicability, and requires new inspections of airplanes that may have Alodine-coated rivets installed. This AD results from a report of cracking discovered in a skin lap joint that was previously inspected using the eddy current method. We are issuing this AD to prevent rapid decompression of the airplane due to disbonding and subsequent cracking of the skin panels.

DATES: This AD becomes effective November 2, 2006.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of November 2, 2006.

On November 27, 1996 (61 FR 57994, November 12, 1996), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2409, dated September 26, 1996.

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: 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 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 supersedes AD 96-23-02, amendment 39-9807 (61 FR 57994, November 12, 1996). The existing AD applies to certain Boeing Model 747 series airplanes. That NPRM was published in the Federal Register on May 25, 2006 (71 FR 30090). That NPRM proposed to continue to require inspections to detect disbonding, corrosion, and cracking at the longitudinal rows of fasteners in the bonded skin panels in section 41 of the fuselage, and repair, if necessary. That NPRM also proposed to add airplanes to the applicability of the existing AD, and require new inspections of airplanes that may have Alodine-coated rivets installed.

Comments

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

Support for the NPRM

Boeing supports the NPRM.

Request To Clarify Inspection Applicability in Paragraph (g)(1) of the NPRM

Northwest Airlines (NWA) requests that we use "and/or" in place of "and" in paragraph (g)(1) of the NPRM, as follows: "* * * do initial inspections of Area 4 and repetitive inspections, as applicable, to detect disbonding, corrosion, and/or cracking of the skin; * * *." NWA explains that changing "and" to "and/or" provides clear instruction for accomplishing the inspection of Area 4 using one of the inspection methods defined in Figure 18 or 20 of Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005, which was referenced in the NPRM as the appropriate source of service information for accomplishing the required actions. NWA states that the requested change eliminates all possibility of interpreting the NPRM to require a specific inspection for disbonding, corrosion, and cracking using the applicable method for each inspection as defined in the service bulletin. NWA also states that this change would duplicate the inspection methods specified in paragraphs (b), (h), and (n) of AD 96-23-02, which used the words "and/or" in a similar context. This change would ensure the NPRM provides clear definition that an operator would accomplish one inspection using the applicable method to detect disbonding, corrosion, or cracks, rather than accomplishing three inspections for three specific and separate conditions.

We agree that the paragraph should be clarified to provide clear instruction for accomplishing the inspection of Area 4 using one of the inspection methods defined in the service bulletin. We disagree with using the words "and/or." Our recent policy has been to avoid using and/or, which can often be subject to misinterpretation. Therefore, we have changed paragraph (g)(1) of this AD by adding "as

applicable" at the end of the phrase as follows: "* * * do initial inspections of Area 4 and repetitive inspections, as applicable, to detect disbonding, corrosion, and cracking of the skin, as applicable; * * * ."

Request To Clarify Inspection Methods in Paragraph (g)(1) of the NPRM

NWA also requests that we change the inspection methods in paragraph (g)(1) of the NPRM from "Method 1 or 2" to "Method 2, 3, or 4" as follows: "If inspection Method 2, 3, or 4 is used and no disbonded doubler is found, no further action is required by this AD." NWA explains that changing the inspection methods from "Method 1 or 2" to "Method 2, 3, or 4" would define the inspection methods necessary to inspect the fuselage skins. Inspection Method 1 is an external ultrasonic inspection that is not applicable to Area 4. Inspection Methods 2, 3, and 4 are inspections that apply to Area 4 and are defined in Figure 20 of the service bulletin.

We partially agree. We agree that inspection Method 1 does not belong in the paragraph because the Method 1 inspection is applicable only to areas 1, 2, and 3. We disagree with including Methods 3 and 4 in a statement that contains the words, "no further action is required by this AD." Inspection Methods 3 and 4 are repetitive inspections. If we included these inspection methods in this statement, then the repetitive inspections would no longer be required. Therefore, we have changed the specified part of paragraph (g)(1) of the final rule as follows: "If inspection Method 2 is used and no disbonded doubler is found, no further action is required by this AD." Furthermore, we eliminated all other references to Method 1 from the paragraph.

Conclusion

We have carefully reviewed the available data, including the comments that have 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 623 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. The average labor rate is \$80 per work hour.

Estimated Costs				
Action	Work hours	Cost per airplane, per inspection cycle	U.S.-registered airplanes	Fleet cost, per inspection cycle
Inspections (required by AD 96-23-02, and continued in this AD)	308	\$24,640	79	\$1,946,560
New inspections (for airplanes with Alodine-coated rivets)	42	\$3,360	96	Up to \$322,560

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 39-9807 (61 FR 57994, November 12, 1996) and by adding the following new airworthiness directive (AD):

AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

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



2006-20-02 Boeing: Amendment 39-14771. Docket No. FAA-2006-24865; Directorate Identifier 2005-NM-194-AD.

Effective Date

(a) This AD becomes effective November 2, 2006.

Affected ADs

(b) This AD supersedes AD 96-23-02.

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; as identified in Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005.

Unsafe Condition

(d) This AD results from a report of cracking discovered in a skin lap joint that was previously inspected using the eddy current method. We are issuing this AD to prevent rapid decompression of the airplane due to disbonding and subsequent cracking of the skin panels.

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 96-23-02

Actions for Groups 1 Through 10, and 17 Through 36, as Specified in Boeing Alert Service Bulletin 747-53A2409, Revision 5

(f) For airplanes identified as Groups 1 through 10 inclusive, and 17 through 36 inclusive, in Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005: Do the inspections in paragraph (f)(1) of this AD; and do the corrective action in paragraph (f)(2) of this AD as applicable. Except as provided by paragraph (i) of this AD, do all actions in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2409, dated September 26, 1996; or Revision 5, dated August 18, 2005. After the effective date of this AD, only Revision 5 of the service bulletin may be used.

(1) At the applicable time in Figures 1, 2, 18, and 20 of Revision 5 of the service bulletin, do initial and repetitive inspections of Areas 1 and 4, as applicable, to detect disbonding, corrosion, and cracking of the skin; except any inspection using Method 1 or 2 must not be accomplished before the

latest of the following, as applicable: Before the accumulation of 2,000 total flight cycles; 2,000 flight cycles since modification to the stretched upper deck (SUD) configuration; or 2,000 flight cycles since skin panel replacement in accordance with AD 90-26-10, amendment 39-6836. If inspection Method 1 or 2 is used and no disbanded doubler is found, no further action is required by this AD.

(2) If any corrosion or cracking is found during any inspection required by paragraph (f)(1) of this AD: Before further flight, except as provided by paragraph (i) of this AD, repair and do any applicable related investigative actions in accordance with the Accomplishment Instructions of Revision 5 of the service bulletin.

New Requirements of This AD

Actions for Groups 11 Through 16 as Specified in Boeing Alert Service Bulletin 747-53A2409, Revision 5 (Airplanes Added to the Applicability of This AD)

(g) For airplanes identified as Groups 11 through 16 inclusive in Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005: Do the inspections in paragraph (g)(1) of this AD; and do the corrective action in paragraph (g)(2) of this AD as applicable. Except as provided by paragraph (i) of this AD, do all actions in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005.

(1) At the applicable time in Figures 18 and 20 of the service bulletin, do initial inspections of Area 4 and repetitive inspections, as applicable, to detect disbonding, corrosion, and cracking of the skin, as applicable; except any inspection using Method 2 must not be accomplished before the latest of the following, as applicable: Before the accumulation of 2,000 total flight cycles; 2,000 flight cycles since modification to the SUD configuration; or 2,000 flight cycles since skin panel replacement in accordance with AD 90-26-10. If inspection Method 2 is used and no disbanded doubler is found, no further action is required by this AD.

(2) If any corrosion, disbonding, or cracking is found during any inspection required by paragraph (g)(1) of this AD, before further flight: Repair and do any applicable related investigative actions in accordance with the Accomplishment Instructions of the service bulletin.

Actions for Airplanes With Alodine-Coated Rivets for Groups 1 Through 10, and 17 Through 36 as Specified in Boeing Alert Service Bulletin 747-53A2409, Revision 5

(h) For airplanes identified as Groups 1 through 10 inclusive, and 17 through 36 inclusive, in Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005: Do the inspections in paragraph (h)(1) of this AD; and do the corrective action in paragraph (h)(2) of this AD if necessary. Except as provided by paragraph (i) of this AD, do all actions in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005.

(1) At the applicable time in Figures 21 and 22 of the service bulletin: Do initial and repetitive inspections of Areas 1 and 4, as applicable, to detect cracking of the skin.

(2) If any cracking is found during any inspection required by paragraph (h)(1) of this AD, before further flight: Repair in accordance with the Accomplishment Instructions of the service bulletin.

Exceptions

(i) Do all actions in accordance with the applicable service bulletin except as provided by paragraphs (i)(1), (i)(2), (i)(3), (i)(4), and (i)(5) of this AD.

(1) For the action in paragraph (f)(1) of this AD: Where Boeing Alert Service Bulletin 747-53A2409, dated September 26, 1996; and Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005; specify a compliance time after the issuance of any revision of the service bulletin, this paragraph requires compliance before the specified compliance time after November 27, 1996 (the effective date of AD 96-23-02).

(2) For the actions in paragraphs (g)(1) and (h)(1) of this AD: Where Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005, specifies a compliance time after the issuance or receipt of any revision of the service bulletin, this paragraph requires compliance before the specified compliance time after the effective date of this AD.

(3) For any repair or any inspection where Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005, specifies to contact the manufacturer for further instructions: Before further flight, repair or inspect using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(4) If corrosion is found during any inspection required by this AD, before further flight: Repair in accordance with an FAA-approved method.

(5) Where Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005, specifies that it is not necessary to count flight cycles at 2.0 psi or less cabin differential pressure, this AD does not allow for that adjustment factor.

Credit for Actions Accomplished Previously

(j) Actions done before the effective date of this AD in accordance with the service bulletins specified in Table 1 of this AD are acceptable for compliance with the corresponding requirements of paragraphs (f) and (g) of this AD.

Table 1 – Credit Service Bulletins

Service Bulletin	Revision Level	Date
Boeing Service Bulletin 747-53A2409	1	May 29, 1997
Boeing Service Bulletin 747-53A2409	2	August 6, 1998
Boeing Service Bulletin 747-53A2409	3	October 22, 1998
Boeing Service Bulletin 747-53A2409	4	February 17, 2000

Alternative Methods of Compliance (AMOCs)

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

(3) AMOCs approved previously in accordance with AD 96-23-02, are approved as AMOCs for the corresponding provisions of paragraph (f) of this AD, except AMOCs for terminating action based upon inspection results using a sliding probe low frequency eddy current (LFEC), sliding probe high frequency eddy current (HFEC), or mid frequency surface eddy current (MFEC) inspection methods; and provided that any alternative method for future inspections did not incorporate a sliding probe LFEC, sliding probe HFEC, or MFEC inspection methods.

(4) 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 747-53A2409, dated September 26, 1996; or Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005, as applicable, to perform the actions that are required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2409, Revision 5, dated August 18, 2005, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) On November 27, 1996 (61 FR 57994, November 12, 1996), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2409, dated September 26, 1996.

(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 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 September 14, 2006.

Kalene C. Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 06-8227 Filed 9-27-06; 8:45 am]