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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2006-26388; Directorate Identifier 2006-NM-234-AD; Amendment 39-14834; AD 2006-24-05]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Boeing Model 747 Airplanes**

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

**ACTION:** Final rule; request for comments.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Boeing Model 747 airplanes. This AD requires repetitive inspections for any cracking of the fuselage skin in section 41 of the airplane, and related investigative and corrective actions if necessary. This AD results from a report of fatigue cracks found in the skin in section 41 of the fuselage, on an in-service Model 747 airplane. We are issuing this AD to detect and correct fatigue cracks at the fastener rows of the fuselage skin in section 41, which could join together and cause a loss of structural integrity and rapid decompression of the airplane.

**DATES:** This AD becomes effective December 12, 2006.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of December 12, 2006.

We must receive comments on this AD by January 26, 2007.

**ADDRESSES:** Use one of the following addresses to submit comments on this AD.

- DOT Docket Web site: go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically.
- Government-wide rulemaking Web site: go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.
- Mail: Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street SW., Nassif Building, Room PL-401, Washington, DC 20590.
- Fax: (202) 493-2251.
- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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:**

### **Discussion**

We have received a report indicating that fatigue cracks were found in the skin in section 41 of the fuselage, on an in-service Model 747 airplane. A 10-inch skin crack and numerous smaller skin cracks in multiple adjacent fastener rows were found immediately aft of the left number 1 main entry door. The cracks occurred less than 7,000 flight cycles after the terminating action required by AD 2006-20-02, (described below), had been done. The fatigue cracks are the result of cyclic loading during cabin pressurization and de-pressurization. Skin cracks at the fastener rows in section 41 of the fuselage, if not detected and corrected in a timely manner, could join together and result in a loss of structural integrity and rapid decompression of the airplane.

### **Related AD**

On September 14, 2006, we issued AD 2006-20-02, amendment 39-14771 (71 FR 56861, September 28, 2006) (which superseded AD 96-23-02, amendment 39-9807 (61 FR 57991, November 12, 1996)), for certain Boeing Model 747 airplanes. That AD 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. That AD also requires inspections of airplanes that may have Alodine-coated rivets installed. That AD resulted from a report of cracking discovered in a skin lap joint that was previously inspected using the eddy current method. We issued that AD to prevent rapid decompression of the airplane due to disbonding and subsequent cracking of the skin panels.

### **Relevant Service Information**

We have reviewed Boeing Alert Service Bulletin 747-53A2675, dated October 12, 2006. The alert service bulletin describes procedures for repetitive inspections for any cracking of the fuselage skin in section 41 of the airplane, reports of inspection findings to Boeing, and related investigative and corrective actions if necessary. Repetitive inspections for any cracking of the fuselage skin includes using surface high-frequency eddy current (HFEC) inspections or, as a short-term alternative to surface HFEC inspections, external detailed inspections of the skin panel around fastener heads; and open-hole HFEC inspections or, as a short-term alternative to open-hole HFEC inspections, external surface low-frequency eddy current (LFEC) inspections of the skin at the edge row fasteners common to an external doubler and a bonded internal doubler. Related investigative and corrective actions may involve using a surface HFEC, or an open-hole HFEC inspection, as applicable, on all the affected fuselage skin in section 41; and repairing any crack damage as given in the applicable Boeing 747 Structural Repair Manual, or by contacting Boeing for repair data.

The alert service bulletin also specifies the following initial compliance times for the inspections: Within 150 flight cycles after the date on the alert service bulletin; before the accumulation of 8,000 total flight cycles; or within 2,000 flight cycles after the last HFEC inspection, Method 1 (external Ultrasonic) or Method 2 (internal detailed) disbond inspection as given in Boeing Alert Service Bulletin 747-53A2409 (which is referenced in AD 2006-20-02 as the appropriate source of service information for doing the actions for that AD); whichever occurs last. The inspections must be repeated at intervals not to exceed 2,000 flight cycles for the HFEC inspections, and not to exceed 150 flight cycles for the alternative detailed and LFEC inspections that are also not to be repeated more than nine times before the applicable HFEC inspection is started.

## **FAA's Determination and Requirements of this AD**

The unsafe condition described previously is likely to exist or develop on other airplanes of the same type design. For this reason, we are issuing this AD to detect and correct fatigue cracks at fastener rows, which could join together and cause a loss of structural integrity and rapid decompression of the airplane. This AD requires accomplishing the actions specified in the service information described previously, except as discussed under "Difference Between the AD and the Alert Service Bulletin." The AD also requires sending the inspection results of each inspection to the manufacturer.

## **Difference Between the AD and the Alert Service Bulletin**

The alert service bulletin specifies that you may contact the manufacturer for instructions on how to repair certain conditions, but this AD requires you to repair those conditions in one of the following ways:

- Using a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by an Authorized Representative for the Boeing Delegation Option Authorization Organization who has been authorized by the FAA to make those findings.

## **Interim Action**

This is considered to be interim action. The manufacturer has advised that it currently is developing a new inspection program that will expand the size of the inspection area and add repetitive inspections that will address the unsafe condition addressed by this AD and AD 2006-20-02. Once this new inspection program is developed, approved, and available, we may consider additional rulemaking.

## **FAA's Determination of the Effective Date**

Since an unsafe condition exists that requires the immediate adoption of this AD, we have found that notice and opportunity for public comment before issuing this AD are impracticable, and that good cause exists to make this AD effective in less than 30 days.

## **Comments Invited**

This AD is a final rule that involves requirements that affect flight safety and was not preceded by notice and an opportunity for public comment; however, we invite you to submit any relevant written data, views, or arguments regarding this AD. Send your comments to an address listed in the ADDRESSES section. Include "Docket No. FAA-2006-26388; Directorate Identifier 2006-NM-234-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the AD that might suggest a need to modify it.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this AD. Using the search function of that Web site, anyone can find and read the comments in any of our dockets, including the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78), or you may visit <http://dms.dot.gov>.

## **Examining the Docket**

You may examine the 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 DOT street address stated in the ADDRESSES section. Comments will be available in the AD docket shortly after the Docket Management System receives them.

## **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 the regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the 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 adding the following new airworthiness directive (AD):



**2006-24-05 Boeing:** Amendment 39-14834. Docket No. FAA-2006-26388; Directorate Identifier 2006-NM-234-AD.

### **Effective Date**

(a) This AD becomes effective December 12, 2006.

### **Affected ADs**

(b) None.

### **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 747-53A2675, dated October 12, 2006.

### **Unsafe Condition**

(d) This AD results from a report that fatigue cracks were found in the skin in section 41 of the fuselage, on an in-service Model 747 airplane. We are issuing this AD to detect and correct fatigue cracks at the fastener rows of the fuselage skin in section 41, which could join together and cause a loss of structural integrity and rapid decompression 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.

### **Repetitive Inspections, Investigative and Corrective Actions**

(f) At the applicable compliance time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2675, dated October 12, 2006, do the applicable inspection for any cracking of the fuselage skin in the section 41 area, and do all applicable related investigative and corrective actions, by accomplishing all the actions specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2675, dated October 12, 2006, except as provided by paragraphs (g) and (h) of this AD. Repeat the applicable inspection at intervals not to exceed those specified in paragraph 1.E. of the service bulletin. If any crack is found, do all applicable related investigative and corrective actions before further flight.

(g) Where Boeing Alert Service Bulletin 747-53A2675, dated October 12, 2006, recommends an initial inspection threshold relative to the date on the service bulletin, this AD requires the initial inspection threshold relative to the effective date of this AD.

(h) If any crack is found during any inspection required by this AD, and Boeing Alert Service Bulletin 747-53A2675, dated October 12, 2006, specifies to contact Boeing for appropriate action: Before further flight, repair the cracking using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

### **Inspection Reports**

(i) Submit a report of the findings (both positive and negative) of the inspections required by paragraph (f) of this AD to Boeing Commercial Airplanes Group, Attention: Manager, Airline Support, P.O. Box 3707, Seattle, Washington 98124-2207, at the applicable time specified in paragraph (i)(1) or (i)(2) of this AD. The report must include the inspection results, a description of any discrepancies/crack found, the airplane serial number, and the number of landings and flight hours on the airplane. Under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.), the Office of Management and Budget (OMB) has approved the information collection requirements contained in this AD and has assigned OMB Control Number 2120-0056.

(1) For each inspection done after the effective date of this AD: Submit the report within 10 days after the inspection.

(2) For each inspection accomplished prior to the effective date of this AD: Submit the report within 10 days after the effective date of this AD.

### **Alternative Methods of Compliance (AMOCs)**

(j)(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) 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**

(k) You must use Boeing Alert Service Bulletin 747-53A2675, dated October 12, 2006, to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference of this document in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. 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](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on November 13, 2006.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

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