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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2005-20692; Directorate Identifier 2004-NM-229-AD; Amendment 39-14350; AD 2005-22-06]**

**RIN 2120-AA64**

**Airworthiness Directives; Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP Series Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes. This AD requires doing a one-time high-frequency eddy current inspection and repetitive detailed inspections for cracks in the frame web of main entry door number 1; and repairing the door frame web if necessary. This AD also provides for optional terminating action for the repetitive inspections. This AD is prompted by reports of cracking at the upper aft corner of the cutout for main entry door number 1 in the station 488 frame web. We are issuing this AD to detect and correct cracks in the frame web. These cracks could cause the frame to break and lead to rapid decompression of the airplane.

**DATES:** This AD becomes effective November 30, 2005.

The incorporation by reference of a certain publication listed in the AD is approved by the Director of the Federal Register as of November 30, 2005.

**ADDRESSES:** For service information identified in this AD, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207.

*Docket:* The AD docket contains the proposed AD, comments, and any final disposition. You can 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 U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Washington, DC. This docket number is FAA-2005-20692; the directorate identifier for this docket is 2004-NM-229-AD.

**FOR FURTHER INFORMATION CONTACT:** Ivan Li, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6437; fax (425) 917-6590.

**SUPPLEMENTARY INFORMATION:** The FAA proposed to amend 14 CFR part 39 with an AD for certain Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes. That action, published in the Federal Register on March 23, 2005 (70 FR 14589), proposed to require doing a one-time high-frequency eddy current inspection and repetitive detailed inspections for cracks in the frame web of main entry door number 1; and repairing the door frame web if necessary. That action also proposed to provide for optional terminating action for the repetitive inspections.

## **Comments**

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

### **Request To Include Optional Inspection**

One commenter requests that we include an option for Group 3 airplanes in paragraph (f) of the proposed AD to perform an open-hole high-frequency eddy current (HFEC) inspection every 3,000 flight cycles instead of a detailed inspection every 1,500 flight cycles. The commenter states that the manufacturer has found this optional inspection to be structurally acceptable.

We agree with the commenter that performing an HFEC inspection every 3,000 flight cycles would provide an equivalent level of safety as intended by this AD. However, the repetitive detailed inspection requirement is actually specified in paragraph (g) of the proposed AD, not paragraph (f). Therefore, we have revised paragraph (g) of the final rule, for Group 3 airplanes only, to include an option to perform a surface HFEC inspection of the frame web between the upper door sill and door stop number 8 for cracks every 3,000 flight cycles in accordance with the method referenced in Figure 3 or Figure 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin (ASB) 747-53A2508, dated August 19, 2004.

### **Request To Revise Frame Inner Chord Inspection Requirement**

One commenter requests that we delete paragraph (j) of the proposed AD or revise it to state that when the frame inner chord is being replaced concurrently with the required frame web repairs, the open-hole HFEC inspection of the frame inner chord is not required. The commenter states that the intent of paragraph (j) should be that when the frame inner chord is being replaced, there is no need to inspect the existing fastener holes in the chord because the chord is a new part. The commenter refers to the applicable Boeing Structural Repair Manual (SRM) and Boeing ASB 747-53A2508 to support this contention.

We agree with this request. Open-hole HFEC inspection of the frame inner chord is a conditional inspection included in the repair procedures specified in paragraph (h) of this AD. However, AD 91-11-01, amendment 39-6997 (dated May 15, 1991), referenced in paragraph (j) of the proposed AD, only requires inspecting the frame inner chord, while AD 90-06-06, amendment 39-6490 (dated March 7, 1990), actually requires replacing the frame inner chord. Therefore, we have concluded that paragraph (j) of the proposed AD should have referred to AD 90-06-06, rather than AD 91-11-01, regarding concurrent replacement of the frame inner chord. We have revised paragraph (j) of the final rule to reflect the commenter's request and to correctly refer to AD 90-06-06. Further, to ensure that there is no confusion about the HFEC inspection, we also revised paragraph (h) of the final rule to include a reference to an "open-hole" HFEC inspection.

## **Request To Clarify Use of Structural Repair Manual**

The same commenter requests that paragraph (h) of the proposed AD be clarified. The commenter asserts that paragraph (h) should be revised to state that the Boeing SRM meets the intent of the proposed AD. Further, the commenter requests that we clarify the statement "For a repair method to be approved, the approval must specifically reference this AD." The commenter feels that paragraph (h) as written might lead to confusion.

We agree with the commenter that the Boeing SRM procedures specified in the service bulletin are appropriate sources of service information for the required repairs. We also agree with the commenter that the statement "For a repair method to be approved, the approval must specifically reference this AD" applies only when the service bulletin advises the operators to contact Boeing for repair procedures, because that statement relates only to damage that is not addressed by the SRM repair procedures. To make it clear that any repair that is done in accordance with the SRM requires no further FAA approval, we have added Note 1 after paragraph (h) of the final rule, which states that the service bulletin "references the Boeing structural repair manual as an additional source of service information to comply with the intent of paragraph (h) this AD."

## **Related Rulemaking**

We have determined that certain detailed inspections required by paragraph (f) of AD 2005-20-30, amendment 39-14327 (70 FR 59252, October 12, 2005), or paragraph (f) of AD 2005-08-01, amendment 39-14053 (70 FR 18290, April 11, 2005), are considered acceptable for accomplishing the repetitive detailed inspections required for Group 1 and Group 2 airplanes by paragraph (g)(1) of this AD or for Group 3 airplanes by paragraph (g)(2)(i) of this AD. Therefore, to give credit for accomplishing the corresponding actions described in AD 2005-20-30 and AD 2005-08-01, we have retitled and reidentified paragraph (j) as paragraph (j)(1), and inserted new paragraph (j)(2) in the final rule.

## **Explanation of Editorial Corrections to Proposed AD**

We have made certain minor changes to punctuation, spelling and other mechanical elements of the proposed AD. These changes do not affect the technical content of the final rule.

## **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.

## **Explanation of Change Made to This AD**

We have simplified paragraph (h) of this AD by referring to the "Alternative Methods of Compliance (AMOCs)" paragraph of this AD for repair methods.

## **Conclusion**

We have carefully reviewed the available data, including the comments that have been submitted, 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 274 airplanes of the affected design in the worldwide fleet. This AD will affect about 140 airplanes of U.S. registry. The following table, using an estimated labor rate of \$65 per work hour, provides the estimated costs for U.S. operators to comply with this AD.

Airplanes	Number of airplanes	Work hours	Cost per airplane	Fleet cost
Group 1 (left and right side HFEC inspection)	119	2	\$130	\$15,470.
Group 1 (left and right side detailed inspection)	119	2	130, per inspection cycle	15,470, per inspection cycle.
Group 2 (left side HFEC inspection)	16	1	65	1,040.
Group 2 (left side detailed inspection)	16	1	65, per inspection cycle	1,040, per inspection cycle.
Group 3 (left and right side HFEC inspection)	5	2	130	650.
Group 3 (left and right side detailed inspection)	5	2	130, per inspection cycle	650, 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. 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 FAA amends § 39.13 by adding the following new airworthiness directive (AD):

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

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

*We post ADs on the internet at [www.faa.gov/aircraft/safety/alerts/](http://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).

**2005-22-06 Boeing:** Amendment 39-14350. Docket No. FAA-2005-20692; Directorate Identifier 2004-NM-229-AD.

## Effective Date

- (a) This AD becomes effective November 30, 2005.

## 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, 747SR, and 747SP series airplanes, certificated in any category; as identified in Boeing Alert Service Bulletin 747-53A2508, dated August 19, 2004.

## Unsafe Condition

(d) This AD was prompted by reports of cracking at the upper aft corner of the cutout for main entry door number 1 in the station 488 frame web. We are issuing this AD to detect and correct cracks in the frame web. These cracks could cause the frame to break and lead to 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.

## Initial Inspections

(f) Before the accumulation of 16,000 total flight cycles, or within 1,000 flight cycles after the effective date of this AD, whichever occurs later, do a high frequency eddy current (HFEC) inspection and a detailed inspection of the station 488 frame web, by doing all of the actions specified in the Accomplishment Instructions of Boeing Alert Service Bulletin (ASB) 747-53A2508, dated August 19, 2004; except as provided by paragraph (h) or (j) of this AD.

## **Repetitive Inspections**

(g) If no crack is found during the inspections required by paragraph (f) of this AD, do the applicable actions specified in paragraph (g)(1) or (g)(2) of this AD.

(1) For airplanes identified in the service bulletin as Groups 1 and 2: Repeat the detailed inspection required by paragraph (f) of this AD at intervals not to exceed 3,000 flight cycles.

(2) For airplanes identified in the service bulletin as Group 3, do the actions specified in either paragraph (g)(2)(i) or (g)(2)(ii) of this AD.

(i) Repeat the detailed inspection required by paragraph (f) of this AD thereafter at intervals not to exceed 1,500 flight cycles.

(ii) Within 1,500 flight cycles after the inspections required by paragraph (f) of this AD, perform a HFEC inspection for cracks of the frame web between the upper door sill and door stop number 8 in accordance with the method referenced in Figure 3 or Figure 4 of the Accomplishment Instructions of the service bulletin. Repeat the HFEC inspection thereafter at intervals not to exceed 3,000 flight cycles.

## **Repairs**

(h) If any crack in the main entry door frame web is found during any inspection required by this AD: Before further flight, perform repairs—including an open-hole HFEC inspection of the frame inner chord—in accordance with the Accomplishment Instructions of Boeing ASB 747-53A2508, dated August 19, 2004. Where the service bulletin specifies to contact Boeing for appropriate action: Before further flight, repair the door frame web and any frame chord damage using a method approved in accordance with paragraph (k) of this AD.

**Note 1:** Boeing ASB 747-53A2508, dated August 19, 2004, references the Boeing Structural Repair Manual as an additional source of service information to comply with the intent of paragraph (h) this AD.

## **Termination of Repeat Inspections**

(i) For the repaired frame web only, accomplishing the door frame web repair required by paragraph (h) of this AD ends the repetitive inspections required by paragraph (g) of this AD.

## **Credit for Actions Accomplished Using Alternative ADs**

(j)(1) If the frame inner chord replacement required by AD 90-06-06, amendment 39-6490, (which identifies Boeing Service Bulletin 747-53-2272, as listed in Boeing Document No. D6-35999, dated March 31, 1989, as a source of service information) is accomplished concurrently with the repair of the station 488 door frame web specified by paragraph (h) of this AD, the open-hole HFEC inspection required by paragraph (h) of this AD is not required for the new frame inner chord.

(2) Accomplishing the repetitive detailed inspections of the station 488 frame required by paragraph (f) of AD 2005-20-30, amendment 39-14327, or paragraph (f) of AD 2005-08-01, amendment 39-14053, satisfies the requirements for the corresponding repetitive detailed inspections described by paragraphs (g)(1) and (g)(2)(i) of this AD, provided those inspections are performed at intervals corresponding with the applicable intervals required by this AD.

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

(k)(1) The Manager, Seattle 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) 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 DOA 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.

(3) 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.

## **Material Incorporated by Reference**

(1) You must use Boeing Alert Service Bulletin 747-53A2508, dated August 19, 2004, to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approves the incorporation by reference of this document in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To get copies of the service information, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207. To view the AD docket, go to the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Nassif Building, Washington, DC. To review copies of the service information, go to 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 October 18, 2005.

Kevin M. Mullin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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