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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2006-24102; Directorate Identifier 2005-NM-244-AD; Amendment 39-14638; AD 2006-12-12]

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.

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**SUMMARY:** The FAA is superseding an existing airworthiness directive (AD), which applies to certain Boeing Model 747-100 and -200 series airplanes. That AD currently requires repetitive inspections for cracking of the station 800 frame assembly, and repair if necessary. This new AD retains the repetitive inspection requirements of the existing AD, but expands the area to be inspected. This AD also reduces the initial inspection threshold, removes the adjustment of the compliance threshold and repetitive interval based on cabin differential pressure, and adds airplanes to the applicability. 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 existing 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 July 17, 2006.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of July 17, 2006.

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 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 98055-4056; 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 2001-14-22, amendment 39-12333 (66 FR 38891, July 26, 2001). The existing AD applies to certain Boeing Model 747-100 and -200 series airplanes. That NPRM was published in the Federal Register on March 8, 2006 (71 FR 11551). That NPRM proposed to require repetitive inspections for cracking of the station 800 frame assembly, and repair if necessary.

### **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 Proposed AD**

Air Transport Association (ATA), on behalf of its member Northwest Airlines, concurs with the intent of the NPRM.

### **Requests To Remove or Revise 12-Month Grace Period From Table 2**

Boeing requests that we remove the 12-month compliance time from paragraph (h), Table 2, items (2) and (3), of the NPRM. Boeing states that the cracking that is the subject of the NPRM is initiated and propagated solely by cyclic loading as measured in flight cycles. Boeing also states that calendar time has no bearing on the initiation rate of the cracking. ATA, on behalf of Northwest Airlines, also comments on the 12-month grace period. Northwest states that, for operators who have planned completion of the initial inspection near the previously defined 19,000 flight-cycle threshold in accordance with AD 2001-14-22, the proposed 12-month grace period could result in unscheduled out-of-service airplanes. Northwest adds that the cracking addressed by the NPRM is attributed to fatigue, which is driven by flight cycles rather than calendar days. Northwest therefore requests that we change the calendar time from 12 months to 18 months, which is consistent with the Boeing maintenance interval on Model 747 airplanes. Northwest suggests limiting this calendar-time change to airplanes that have not exceeded the previously mandated 19,000 total-flight-cycle threshold. ATA states that this change would avoid disruption of maintenance visits that were scheduled to facilitate compliance with the existing AD.

We agree that a grace period based on calendar time is inappropriate because, as Boeing states and ATA notes, the cracking that is the subject of the NPRM is initiated and propagated solely by cyclic loading as measured in flight cycles. For this reason, we disagree with ATA's request to extend the grace period to 18 months for certain airplanes. Instead, we have revised Table 2 of the final rule

to remove the 12-month portion of the grace period, and to include only the compliance time based on flight cycles. This change will ensure an equivalent level of safety and alleviate concerns about unscheduled out-of-service airplanes.

### **Request To Clarify Expanded Inspection Requirements for Previously Inspected Airplanes**

ATA, on behalf of Northwest Airlines, also requests that, for airplanes on which the inspections in accordance with AD 2001-14-22 have been done, we clarify that the inspection per procedures defined in Boeing Alert Service Bulletin 747-53A2451, Revision 1, dated November 10, 2005, be accomplished at the next scheduled repeat inspection. Northwest states that this request complies with the statement in the service bulletin that specifies no additional work is necessary on airplanes previously inspected in accordance with the initial release of the service bulletin (dated October 5, 2000), and to do the expanded inspection at the time of the next scheduled inspection.

We partially agree. We agree with the commenter that, for the previously accomplished inspections, compliance with AD 2001-14-22 was met if the inspection was accomplished in accordance with the original release of the service bulletin (Boeing Alert Service Bulletin 747-53A2451, including Appendix A, dated October 5, 2000). It is the intent of the NPRM to match the service information provided by Boeing. We disagree that any change is necessary to clarify the AD. Paragraph (f) of the AD states that, prior to the effective date of this new AD, the inspections may be accomplished in accordance with either the initial release or Revision 1 of the service bulletin. After the effective date of this AD, only Revision 1 may be used. We have not changed the AD in this regard.

### **Explanation of Change to Costs of Compliance**

After the NPRM was issued, we reviewed the figures we have used over the past several years to calculate AD costs to operators. To account for various inflationary costs in the airline industry, we find it necessary to increase the labor rate used in these calculations from \$65 per work hour to \$80 per work hour. The cost impact information, below, reflects this increase in the specified hourly labor rate.

### **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 900 airplanes of the affected design in the worldwide fleet. This AD will affect about 156 airplanes of U.S. registry.

The inspections that are specified in AD 2001-14-22, and retained in this AD, 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 \$960 and \$1,120 per airplane, per inspection cycle.

The new actions will 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 39-12333 (66 FR 38891, July 26, 2001) and by adding the following new airworthiness directive (AD):

# AIRWORTHINESS DIRECTIVE

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)  
[www.gpoaccess.gov/fr/advanced.html](http://www.gpoaccess.gov/fr/advanced.html)

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



**2006-12-12 Boeing:** Amendment 39-14638. Docket No. FAA-2006-24102; Directorate Identifier 2005-NM-244-AD.

## Effective Date

- (a) This AD becomes effective July 17, 2006.

## Affected ADs

- (b) This AD supersedes AD 2001-14-22.

## 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 existing 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.

## Restatement of the Requirements of AD 2001-14-22

### Repetitive Inspections

- (f) For Boeing Model 747-100, 747-100B, 747-100B SUD, -200B, 747-200C, and 747-200F 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 of this AD, 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**

<b>Total flight cycles as of August 30, 2001 (the effective date of AD 2001-14-22)</b>	<b>Do the inspection in paragraph (f) of this AD at this time</b>
(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 21,250 or fewer	Within 1,500 flight cycles or 12 months after August 30, 2001, whichever comes first.
(3) 21,251 or more	Within 750 flight cycles or 12 months after August 30, 2001, whichever comes first.

**Adjustments to Compliance Time: Cabin Differential Pressure**

(g) For Boeing Model 747-100, 747-100B, 747-100B SUD, -200B, 747-200C, and 747-200F series airplanes, as identified in Boeing Alert Service Bulletin 747-53A2451, including Appendix A, dated October 5, 2000, that are 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.

**New Requirements of this AD**

**Repetitive Inspections of Expanded Area at a New Reduced Threshold**

(h) For all airplanes, at the applicable time specified in Table 2 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 2 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 2.—REVISED COMPLIANCE TIMES**

<b>Total flight cycles as of the effective date of this AD</b>	<b>Do the inspections in paragraph (h) of this AD at this time</b>
(1) Fewer than 16,000	Before the accumulation of 16,000 total flight cycles, or within 1,500 flight cycles after the effective date of this AD, whichever comes later.
(2) 16,000 or more, but 24,250 or fewer	Within 1,500 flight cycles after the effective date of this AD.
(3) 24,251 or more	Within 750 flight cycles after the effective date of this AD.

## 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, 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) 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.

(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.

## 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) The Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2451, Revision 1, dated November 10, 2005, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(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 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 May 31, 2006.

Kalene C. Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 06-5207 Filed 6-9-06; 8:45 am]

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SUPERSEDED