

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 2002-NM-149-AD; Amendment 39-13682; AD 2004-13-02]

RIN 2120-AA64

#### Airworthiness Directives; Boeing Model 747-100, -200B, and -200F Series Airplanes

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

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**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 747-100, -200B, and -200F series airplanes. This action requires initial and repetitive inspections to find discrepancies in the upper and lower skins of the fuselage lap joints, and repair if necessary. This action is necessary to find and fix such discrepancies, which could result in sudden fracture and failure of a lap joint and rapid in-flight decompression of the airplane fuselage. This action is intended to address the identified unsafe condition.

**DATES:** Effective July 29, 2004.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of July 29, 2004.

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Nick 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:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to certain Boeing Model 747-100, -200B, and -200F series airplanes was published in the Federal Register on July 2, 2003 (68 FR 39483). That action proposed to require initial and repetitive inspections to find discrepancies in the upper and lower skins of the fuselage lap joints, and repair if necessary.

## Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the single comment received.

### Request To Withdraw the Notice of Proposed Rulemaking

One commenter states that the proposed rule, as it applies to Model 747 series airplanes, is unnecessary, will not improve safety, and imposes an undue burden on airplane operators. The commenter suggests that there is a tenuous connection between the 737 incident and the 747 fleet. The commenter further states that Model 747 series airplanes have a stronger design than Model 737 series airplanes; that Model 747 series airplanes have existing modifications and modification requirements; and that Model 747 series airplanes are better maintained by U.S. operators. In addition, this commenter recently completed "full modification" of eighteen upper lobe lap joints on an affected Model 747 series airplane and found no evidence of scratches.

The FAA infers from these comments that the commenter is requesting that the proposed rule be withdrawn. We do not agree. To date, no reports of cracks and scratches in the subject area have been found on Model 747 series airplanes. In consideration of this fact, we specified a longer compliance time in this AD for Model 747 series airplanes than the compliance time for Model 737 series airplanes specified in AD 2000-17-04, amendment 39-11878 (65 FR 51750, August 25, 2002). We chose repetitive intervals of 72 months for the required low frequency eddy current (LFEC) inspections in order to minimize the effect on the operators while still providing an adequate level of safety. In addition, we determined that the possibility of scratches that initiate during manufacture exists for any cold-bonded adhesive skin panel, and that there have been numerous reports of corrosion on cold bonded skin panels in Boeing Model 747 series airplanes. Corrosion has also been reported on Boeing Model 747 series airplanes on which full modification has previously been accomplished per AD 90-06-06, amendment 39-6490 (55 FR 8374, March 7, 1990); and AD 94-12-09 amendment 39-8937 (59 FR 30285, June 13, 1994). For these reasons, it is both warranted and necessary to issue this AD.

### Remove Certain Inspection Requirements

The same commenter requests that the LFEC inspections for corrosion at the upper fastener rows should not be required at locations that have had "full modifications" accomplished per Boeing Alert Service Bulletin 747-53A2267, dated March 28, 1986 (required by AD 94-17-01, amendment 39-8996 (59 FR 41653, August 15, 1994)), or Boeing Service Bulletin 747-53-2307, Revision 1, dated August 27, 1992 (required by AD 94-12-09). The commenter states that the "full modifications" are sufficient to detect and remove damage, and that the post-modification inspections required by AD 94-12-09 and the SSID AD (AD 94-15-18, amendment 39-8989, 59 FR 41233, August 11, 1994)) provide an equivalent level of safety in detecting subsequent damage.

We do not agree that the external LFEC inspections should not be required for operators that have accomplished the modifications required by Boeing Alert Service Bulletin 747-53A2267 or Boeing Service Bulletin 747-53-2307. We have received reports from the manufacturer of corrosion on airplanes on which the full modification had been accomplished. While the re-sealing process included in the full modification does provide some level of improvement in surface protection, it does not provide enough of an improvement to prevent corrosion.

We also do not agree that the post-modification inspections required by AD 94-12-09 and the SSID AD (AD 94-15-18) provide an equivalent level of safety. The post-modification external high frequency eddy current (HFEC) inspections required by AD 94-12-09 and AD 94-17-01 address cracks only in the upper row on the surface of the upper skin. The external LFEC inspections

required by this AD address corrosion beneath the surface, at the interface between the upper and lower skins. We have not changed the final rule regarding these issues.

### **Include Alternative Method of Compliance (AMOC) for Repaired Airplanes**

The same commenter suggests that the proposed AD include specific instructions for conducting inspections where existing repairs may interfere with or obstruct the required inspections. The commenter also suggests that these potential obstructions will result in an exorbitant number of requests for AMOCs, and that the industry and the FAA are ill equipped to handle the number of requests. Further, the manufacturer has informed the commenter that a revision to Boeing Alert Service Bulletin 747-53A2463 (which is referenced in this AD as the appropriate source of service information for the required actions) is being prepared to include instructions to account for existing repairs.

While we agree that it would be preferable to cite specific instructions for inspections at repaired areas, we cannot include such instructions until we receive the revised service bulletin from the manufacturer. At that time, we will review the revised service bulletin and, upon our approval of the new requirements, we will consider further rulemaking. We have not changed the final rule regarding this issue.

### **Conclusion**

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

### **Change to Labor Rate Estimate**

We have 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 \$60 per work hour to \$65 per work hour. The cost impact information, below, reflects this increase in the specified hourly labor rate.

### **Cost Impact**

There are approximately 86 airplanes of the affected design in the worldwide fleet. The FAA estimates that 55 airplanes of U.S. registry will be affected by this proposed AD, that it will take approximately 5,334 work hours per airplane to accomplish the inspections, and that the average labor rate is \$65 per work hour. Based on these figures, the cost impact of this AD on U.S. operators is estimated to be \$19,069,050, or \$346,710 per airplane.

The cost impact figure discussed above is based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

### **Regulatory Impact**

The regulations adopted herein 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. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (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. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. Section 39.13 is amended by adding the following new airworthiness directive:

# 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"*

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).

**2004-13-02 Boeing:** Amendment 39-13682. Docket 2002-NM-149-AD.

**Applicability:** Model 747-100, -200B, and -200F series airplanes, as listed in Boeing Alert Service Bulletin 747-53A2463, dated March 7, 2002; certificated in any category.

**Compliance:** Required as indicated, unless accomplished previously.

To find and fix discrepancies in the upper and lower skins of the fuselage lap joints, which could result in sudden fracture and failure of a lap joint and rapid in-flight decompression of the airplane fuselage, accomplish the following:

## Initial and Repetitive Inspections

(a) Do the applicable (initial and repetitive) inspections as specified in Figures 2 through 8, as applicable, of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2463, including Appendices A, B, and C, dated March 7, 2002, to find discrepancies (cracking and corrosion) in the upper and lower skins of the fuselage lap joints. Do the inspections at the applicable times specified in Figure 1 of the Accomplishment Instructions of the alert service bulletin, in accordance with the alert service bulletin; except that where Figure 1 specifies a compliance time of "after the release date of this service bulletin," this AD requires a compliance time of "after the effective date of this AD." Where Figure 1 specifies a compliance time of "flight cycles" this AD requires a compliance time of "total flight cycles."

(b) Where Boeing Alert Service Bulletin 747-53A2463, including Appendices A, B, and C, dated March 7, 2002, specifies that the manufacturer may be contacted for certain inspection procedures, inspect per a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA; or per data meeting the type certification basis of the airplane approved by a Boeing Company Designated Engineering Representative (DER) who has been authorized by the Manager, Seattle ACO, to make such findings.

## Adjustments to Compliance Time: Cabin Differential Pressure

(c) For the purposes of calculating the compliance threshold and repetitive interval for the inspections required by paragraph (a) of this AD: 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 flight cycles with momentary spikes in cabin differential pressure above 2.0 psi are included as full pressure flight cycles. For this provision to apply, all cabin pressure records must be maintained for each airplane. No fleet-averaging of cabin pressure is allowed.

## Repair

(d) Before further flight, repair any discrepancy (cracking or corrosion) found during any inspection required by paragraph (a) of this AD, per the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2463, including Appendices A, B, and C, dated March 7, 2002. If any discrepancy is found and the alert service bulletin specifies that the manufacturer may be contacted for disposition of certain repairs, before further flight, repair per a method approved by the Manager, Seattle ACO; or per data meeting the type certification basis of the airplane approved by a Boeing Company DER who has been authorized by the Manager, Seattle ACO, to make such findings.

## Alternative Methods of Compliance

(e) In accordance with 14 CFR 39.19, the Manager, Seattle ACO, is authorized to approve alternative methods of compliance for this AD.

## Incorporation by Reference

(f) Unless otherwise specified in this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 747-53A2463, including Appendices A, B, and C, dated March 7, 2002. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

## Effective Date

(g) This amendment becomes effective on July 29, 2004.

Issued in Renton, Washington, on June 9, 2004.

Kalene C. Yanamura,  
Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.  
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