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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. 2001-NM-228-AD; Amendment 39-13265; AD 2003-16-12]**

**RIN 2120-AA64**

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

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

**ACTION:** Final rule.

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**SUMMARY:** This amendment supersedes an existing airworthiness directive (AD), applicable to certain Boeing Model 747 series airplanes, that currently requires inspections to detect cracking of the front spar web of the wing, and corrective action if necessary. This amendment adds one airplane to the applicability, changes certain compliance times, adds certain new requirements, and provides an optional modification. This action is necessary to detect and correct fatigue cracking of the front spar web, which could result in fuel leaking onto an engine and a consequent fire. This action is intended to address the identified unsafe condition.

**DATES:** Effective September 22, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of September 22, 2003.

The incorporation by reference of Boeing Alert Service Bulletin 747-57A2311, dated January 27, 2000, as listed in the regulations, was approved previously by the Director of the Federal Register as of January 30, 2001 (65 FR 81331, December 26, 2000).

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, PO 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:** Tamara Anderson, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6421; fax (425) 917-6590.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 2000-25-12, amendment 39-12047 (65 FR 81331, December 26, 2000), which is applicable to certain Boeing Model 747 series airplanes, was published in the Federal Register on March 4, 2003 (68 FR 10185). The action proposed to continue to require inspections to detect cracking of the front spar web of the wing, and corrective action if necessary. That action also proposed to add one airplane to the applicability, change certain compliance times, add certain new requirements, and proposed an optional modification.

## **Comments**

Interested persons have been afforded an opportunity to participate in the making of this amendment. No comments were submitted in response to the proposal or the FAA's determination of the cost to the public.

## **Change to Final Rule**

After reviewing paragraph (g) of the proposed AD, the FAA finds it necessary to clarify the applicability specified for the post-modification inspections. Paragraph (g) states, "For airplanes on which the actions specified in paragraph (b) or (f) of this AD have been done before the effective date of this AD: In lieu of the inspections \* \* \*" We inadvertently included "before the effective date of this AD;" however, paragraph (g) is an option for airplanes on which paragraph (b) or (f) has been done either before or after the effective date of the AD. Therefore, we have changed paragraph (g) of this final rule for clarification.

## **Conclusion**

The FAA has determined that air safety and the public interest require the adoption of the rule with the change previously described. This change will neither increase the economic burden on any operator nor increase the scope of the AD.

## **Changes to 14 CFR Part 39/Effect on the AD**

On July 10, 2002, the FAA issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's airworthiness directives system. The regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance. However, for clarity and consistency in this final rule, we have retained the language of the NPRM regarding that material.

## **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 479 airplanes of the affected design in the worldwide fleet. The FAA estimates that 97 airplanes of U.S. registry will be affected by this AD.

The external inspections that are currently required by AD 2000-25-12 take approximately 48 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be \$3,120 per airplane, per inspection cycle.

The new inspections that are required by this new AD will take approximately 74 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the new inspections is estimated to be \$4,810 per airplane, per inspection cycle.

The cost impact figures discussed above are 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.

Should an operator elect to accomplish the optional modification that is provided by this AD, it will take approximately 40 work hours to accomplish, at an average labor rate of \$65 per work hour. The cost of required parts will be between \$8,606 and \$28,036 per airplane. Based on these figures, the cost impact of the optional modification will be between \$11,206 and \$30,636 per airplane.

## **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 removing amendment 39-12047 (65 FR 8128, December 26, 2000) and 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).

**2003-16-12 Boeing:** Amendment 39-13265. Docket 2001-NM-228-AD. Supersedes AD 2000-25-12, amendment 39-12047.

**Applicability:** Model 747 series airplanes, as listed in Boeing Service Bulletin 747-57A2311, Revision 2, dated February 21, 2002; certificated in any category.

**Note 1:** This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been otherwise modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (h)(1) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

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

To detect and correct fatigue cracking of the front spar web of the wing, which could result in fuel leaking onto an engine and a consequent fire, accomplish the following:

## **Restatement of Certain Requirements of AD 2000-25-12**

### *Repetitive Inspections*

(a) Excluding Group 31 airplanes, as specified in Boeing Service Bulletin 747-57A2311, Revision 2, dated February 21, 2002: At the later of the times specified in paragraphs (a)(1) and (a)(2) of this AD, except as provided by paragraph (b) of this AD, perform the Part 1 external web inspection—including detailed, ultrasonic, and high frequency eddy current (HFEC) inspections—to detect cracking of the front spar web of the wing, in accordance with Boeing Alert Service Bulletin 747-57A2311, dated January 27, 2000. Repeat the inspections thereafter at intervals not to exceed 2,000 flight cycles until accomplishment of the inspections required by paragraph (e) of this AD. Accomplishment of an optional inspection of the front spar web per AD 2000-25-12, amendment 39-12047, is considered acceptable for compliance with the applicable inspection requirement in this paragraph.

**Note 2:** For the purposes of this AD, a detailed inspection is defined as: "An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required."

(1) Prior to the accumulation of 13,000 total flight cycles or 30,000 total flight hours, whichever occurs first.

(2) Within 18 months after January 30, 2001 (the effective date of AD 2000-25-12, amendment 39-12047).

### **Exception for Modified Airplanes**

(b) Except as provided by paragraph (g) of this AD, for airplanes on which the front spar web between front spar station inboard (FSSI) 668 and FSSI 692 has been replaced before the effective date of this AD with a shot-peened front spar web, in accordance with AD 99-10-09, amendment 39-11162: Within 13,000 flight cycles or 30,000 flight hours after the replacement, whichever occurs first, inspect the new section of the front spar web that overlaps with the inspection area specified in Boeing Alert Service Bulletin 747-57A2311 (the area between FSSI 668 and FSSI 684), dated January 27, 2000. Repeat the inspections thereafter, in accordance with paragraph (a) of this AD.

### **Repair**

(c) If any cracking is detected during any inspection required by this AD, prior to further flight, repair in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA; or in accordance with data meeting the type certification basis of the airplane approved by a Boeing Company Designated Engineering Representative who has been authorized by the Manager, Seattle ACO, to make such findings. For a repair method to be approved by the Manager, Seattle ACO, as required by this paragraph, the approval letter must specifically reference this AD.

### **New Requirements of This AD**

#### *Compliance Times*

(d) Where the compliance time inspection threshold is measured from the release of either Boeing Alert Service Bulletin 747-57A2311, Revision 1, including Appendices A and B, dated June 14, 2001; or Boeing Service Bulletin 747-57A2311, Revision 2, dated February 21, 2002: This AD requires compliance within the inspection interval specified in the service bulletin "after the effective date of this AD."

#### *Repetitive Inspections*

(e) Except as provided by paragraph (g) of this AD: Do detailed, ultrasonic, and HFEC inspections, as applicable, to find cracking of the front spar web of the wing, in accordance with Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2311, Revision 1, including Appendices A and B, dated June 14, 2001; or Boeing Service Bulletin 747-57A2311, Revision 2, dated February 21, 2002. Do the inspections at the applicable initial inspection threshold times specified in Figure 1, Tables 1 through 8 inclusive, of the service bulletin. Repeat the applicable inspection thereafter at the applicable repeat inspection interval specified in Figure 1, Tables 1 through 8 inclusive, of the service bulletin. Accomplishment of the inspections required by this paragraph terminates the repetitive inspections required by paragraph (a) of this AD.

### *Optional Modification*

(f) Accomplishment of the optional modification of the front spar web of the wing (includes removing the existing fasteners and doing an open hole, rotating probe HFEC inspection of the holes for web cracks; and if no cracks are found, oversizing the holes, and installing tension type fasteners), in accordance with Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2311, Revision 1, including Appendices A and B, dated June 14, 2001; or Boeing Service Bulletin, Revision 2, dated February 21, 2002; terminates the repetitive inspections required by paragraph (e) of this AD.

### *Post-Modification Inspections*

(g) For airplanes on which the actions specified in paragraph (b) or (f) of this AD have been done: In lieu of the inspections required by paragraph (b) or (e) of this AD, as applicable, do the applicable post-modification inspection specified in Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2311, Revision 1, including Appendices A and B, dated June 14, 2001; or Boeing Service Bulletin 747-57A2311, Revision 2, dated February 21, 2002; at the post-modification inspection threshold times specified in Figure 1, Tables 1 through 8 inclusive, of the service bulletin. Repeat the applicable inspection thereafter at the applicable post-modification repeat inspection interval specified in Figure 1, Tables 1 through 8 inclusive, of the service bulletin.

### *Alternative Methods of Compliance*

(h)(1) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle ACO. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

(2) Alternative methods of compliance, approved previously in accordance with AD 2000-25-12, amendment 39-12047, are approved as alternative methods of compliance with paragraph (c) of this AD.

**Note 3:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

### *Special Flight Permits*

(i) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

### *Incorporation by Reference*

(j) Unless otherwise specified in this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 747-57A2311, dated January 27, 2000; and Boeing Alert Service Bulletin 747-57A2311, Revision 1, including Appendices A and B, dated June 14, 2001; or Boeing Service Bulletin 747-57A2311, Revision 2, dated February 21, 2002; as applicable.

(1) The incorporation by reference of Boeing Alert Service Bulletin 747-57A2311, Revision 1, including Appendices A and B, dated June 14, 2001; and Boeing Service Bulletin 747-57A2311, Revision 2, dated February 21, 2002; is approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The incorporation by reference of Boeing Alert Service Bulletin 747-57A2311, dated January 27, 2000, was approved previously by the Director of the Federal Register as of January 30, 2001 (65 FR 81331, December 26, 2000).

(3) Copies may be obtained from Boeing Commercial Airplane Group, 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*

(k) This amendment becomes effective on September 22, 2003.

Issued in Renton, Washington, on August 7, 2003.

Neil D. Schalekamp,  
Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.  
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