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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. 2001-NM-178-AD; Amendment 39-13280; AD 2003-17-06]**

**RIN 2120-AA64**

### **Airworthiness Directives; Boeing Model 747-100, 747SP, and 747SR 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, 747SP, and 747SR series airplanes, that requires repetitive inspections to find fatigue cracking between the seal ribs of the front spar web of the wing and outboard of the outboard seal rib to front spar station inboard (FSSI) 711, and repair of cracked structure. This AD also provides for an optional modification of a certain area. This action is necessary to find and fix fatigue cracking between the seal ribs of the front spar web of the wing and outboard of the outboard seal rib to FSSI 711, which could result in fuel leakage into the area of the inboard engines, and consequent increased risk of a fire. This action is intended to address the identified unsafe condition.

**DATES:** Effective September 24, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of September 24, 2003.

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 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 L. Anderson, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Transport Airplane Directorate, 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) to include an airworthiness directive (AD) that is applicable to certain Boeing Model 747-100, 747SP, and 747SR series airplanes, was published in the Federal Register on February 4, 2003 (68 FR 5610). That action proposed to require repetitive inspections to find fatigue cracking between the seal ribs of the front spar web of the wing, and repair of cracked structure. That action also proposed to provide for an optional modification of a certain area.

## **Comments**

Interested persons have been afforded an opportunity to participate in the making of this amendment. The FAA has given due consideration to the comments received from a single commenter.

### **Request To Revise Compliance Time**

The commenter requests that we revise compliance time information in paragraphs (a) and (b) of the proposed AD to make the wording of the inspection threshold and grace period more specific. The commenter specifically asks that we add a new paragraph (a)(2) and revise paragraph (b)(1) of the proposed AD to include the words "Within 18 months of the effective date of this AD for all airplanes that have exceeded the total flight cycles or total flight hours \* \* \*." The commenter states that this change is necessary so that operators of airplanes that have exceeded the thresholds specified in the service bulletin will know how much time they have to accomplish the initial inspection.

We do not concur with the commenter's request. Paragraph (b)(1) of this AD specifically refers to Tables 1 through 3 of Figure 1 of the Accomplishment Instructions or Appendix A of the referenced service bulletin as the appropriate source of the compliance time for the applicable initial or post-modification inspection. Paragraph (a) of this AD is intended to clarify the grace period stated in the service bulletin. We find that affected operators should be readily able to determine the applicable compliance time, as clarified by paragraph (a) of this AD. No change is necessary in this regard.

### **Request To Clarify Repair Instructions**

The commenter requests that we revise paragraph (c) of the proposed AD to add a reference to corrosion or damage that may be found during the inspections or the optional modification specified in paragraph (d) of the proposed AD. The commenter states that operators may find corrosion or damage during the required inspections, or fastener holes may be damaged during accomplishment of the optional modification.

We do not concur with the commenter's request to add a reference to corrosion or damage. The inspections described in the referenced service bulletin and required by this AD are intended only to reveal cracking related to the identified unsafe condition. If any corrosion or damage is found during accomplishment of an action required by this AD, an operator would be required—regardless of AD direction—to correct the corrosion or damage to ensure that the airplane is operated in an airworthy condition as required by the Federal Aviation Regulations.

Related to this, we infer that the rationale for the commenter's request is to ensure that repairs of corrosion and other damage may be approved by a delegated Designated Engineering Representative (DER). We do not agree that any change is necessary to meet the commenter's intent. If corrosion or damage is found, and the Manager of the Seattle Aircraft Certification Office (ACO) has authorized a Boeing Company DER to approve an alternative method of compliance for this AD, then the Boeing Company DER may approve a repair if it is structurally adequate per the FAA's delegation letter.

We concur, however, with the commenter's request to revise paragraph (c) of this final rule to add a reference to the optional modification. We note that paragraph (c) of the proposed AD states that it applies to any cracking found during any inspection required by the AD. This would include any inspection specified in the procedures for the optional modification. We find that adding the reference requested by the commenter may clarify that any cracking found during the optional modification must be repaired before further flight. Thus, for clarification, we have revised paragraph (c) of this AD to specify that the repair provisions in that paragraph apply to any cracking found during an inspection required by this AD, including cracking found during accomplishment of the modification specified in paragraph (d) of this AD.

### **Request To Clarify Inspection Threshold**

The commenter requests that we revise paragraph (d) of the proposed AD to clarify that, if the optional modification is accomplished, the threshold for the repetitive inspections of Zone B is extended to the post-modification threshold specified in Tables 1 through 3 of Figure 1 of the service bulletin. The proposed AD does not include the words "post-modification" before the word "threshold." The commenter does not state any justification for its request.

We infer that the commenter is concerned that, because there are other thresholds specified in the service bulletin, operators may be confused about the new threshold for the repetitive inspections of Zone B. We concur that this clarification may be helpful and have revised paragraph (d) of this AD accordingly.

### **Request To Revise Inspection Terminology, Add Inspection Definition**

The commenter requests that we revise paragraph (b) of the proposed AD to refer to a "detailed visual inspection" instead of a "detailed inspection." The commenter also requests that we add an AD note defining a "detailed visual inspection." The commenter points out that this note has appeared in other ADs.

We do not concur with the commenter's request to revise the inspection terminology. The term "detailed visual inspection" was changed to "detailed inspection" in Revision 2003.1 of the Air Transport Association of America (ATA)/MSG-3 document, "ATA Operator/Manufacturer Scheduled Maintenance Development." We find that this terminology should be readily understood by all affected operators, and no change to the terminology is necessary.

We do concur with the commenter's request to add the standard AD note defining a "detailed inspection." This note was inadvertently omitted from the proposed AD. Therefore, we have added a new Note 2 to this AD and renumbered subsequent notes accordingly.

### **Request To Clarify Area of Inspection**

The commenter requests that we revise the "Summary" section of the proposed AD to clarify the area of inspection. The commenter states that the statement that the proposed AD would require, "repetitive inspections to find fatigue cracking between the seal ribs of the front spar web of the wing" is not accurate. The commenter states that inspections also extend outboard of the outboard seal rib to front spar station inboard (FSSI) 713.

We concur with the intent of the commenter's request; however, we find that the subject inspection area extends to FSSI 711, not FSSI 713 as stated by the commenter. We have revised the "Summary" of this final rule accordingly. We find that this does not expand the scope of the proposed AD because paragraph (b) of the proposed AD states that the inspections must be accomplished "per the Accomplishment Instructions" of Boeing Special Attention Service Bulletin 747-57-2313, Revision 1, dated February 21, 2002. The "Summary" section of a proposed AD is intended to provide only a very general description of the proposed requirements, while the preamble more completely describes the proposed requirements.

## **Request To Revise Preamble**

The commenter requests that we make the following changes to the preamble of the proposed AD:

- In the "Discussion" section of the proposed AD, identify the model on which the 24-inch crack in the front spar web of the right wing was found as a Boeing Model 747-200 series airplane, not a Model 747-100 series airplane.
- In the "Discussion" section of the proposed AD, state that the cracks originated from a hole common to a rib post on the front spar at FSSI 655.70, not FSSI 656.
- In the "Related Rulemaking" section of the proposed AD, state that both AD 90-17-18, amendment 39-6702 (55 FR 33279, August 15, 1990), and AD 95-12-26, amendment 39-9279 (60 FR 34107, June 30, 1995), refer to Boeing Service Bulletin 747-57A2259 as the appropriate source of information for actions required by those ADs.

We partially agree with the commenter's requests:

- We agree that the original report of cracking was on a Boeing Model 747-200 series airplane, not on a Model 747-100 as stated in the proposed AD. The unsafe condition associated with this AD is addressed on Model 747-200 series airplanes by the rulemaking action associated with Rules Docket No. 2001-NM-228-AD, which we issued as a notice of proposed rulemaking on February 24, 2003 (68 FR 10185, March 4, 2003).
- Section I.C., "Reason," of Boeing Special Attention Service Bulletin 747-57-2313, Revision 1, states that the hole from which the cracking originated was common to a rib post on the front spar at FSSI 656. Thus, the proposed AD is consistent with the service bulletin, and the change requested by the commenter is not necessary.
- AD 95-12-26 supersedes AD 90-17-18. Thus, the proposed AD should have referred to the requirements of AD 95-12-26 instead of AD 90-17-18.

Regardless of these issues, neither the "Discussion" nor the "Related Rulemaking" section is restated in this final rule. Thus, no change to the final rule is necessary in this regard.

## **Explanation of Additional Change to Proposed AD**

We have revised the service bulletin citation throughout this final rule to delete references to Appendices A and B of Boeing Special Attention Service Bulletin 747-57-2313, Revision 1. However, in paragraphs (b)(1), (b)(2), and (d) of this AD, the references to Appendix A of Boeing Special Attention Service Bulletin 747-57-2313, Revision 1, have been retained because those paragraphs refer specifically to the inspection thresholds and intervals specified in Appendix A of the service bulletin. Also, we have retained the reference to Appendices A and B in the citation of the original issue of Boeing Special Attention Service Bulletin 747-57-2313, dated April 19, 2001, because those appendices are outside the numbered pages of that service bulletin.

## **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 with the changes previously described. The FAA has determined that these changes 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**

After the proposed AD was issued, we reviewed the figures we use to calculate the labor rate to do the required actions. To account for various inflationary costs in the airline industry, we find it appropriate to increase the labor rate used in these calculations from \$60 per work hour to \$65 per work hour. The economic impact information, below, has been revised to reflect this increase in the specified hourly labor rate.

### **Cost Impact**

There are approximately 109 airplanes of the affected design in the worldwide fleet. The FAA estimates that 59 airplanes of U.S. registry will be affected by this AD, that it will take approximately 25 work hours per airplane to accomplish the required 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 \$95,875, or \$1,625 per airplane, per inspection cycle.

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.

Should an operator elect to do the optional modification of Zone B, it would take approximately 480 work hours to accomplish at an average labor rate of \$65 per work hour. Parts cost would be approximately \$16,652. Based on these figures, the cost impact of the proposed modification is estimated to be \$47,852 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 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).

**2003-17-06 Boeing:** Amendment 39-13280. Docket 2001-NM-178-AD.

**Applicability:** Model 747-100, 747SP, and 747SR series airplanes, as listed in Boeing Special Attention Service Bulletin 747-57-2313, Revision 1, 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 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 (f) 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 find and fix fatigue cracking between the seal ribs of the front spar web of the wing and outboard of the outboard seal rib to front spar station inboard 711, which could result in fuel leakage into the area of the inboard engines, and consequent increased risk of a fire; accomplish the following:

## Compliance Times

(a) Where the compliance times in the service bulletin specify a compliance time interval calculated "after the initial release of this service bulletin," this AD requires compliance within the interval specified in the service bulletin "after the effective date of this AD." In addition, where the compliance time for the initial inspection in Tables 1 through 3 of Figure 1 of the service bulletin specifies "flight hours," this AD requires a compliance time of "total flight hours."

## Initial and Repetitive Inspections

(b) Do detailed, high frequency eddy current and ultrasonic inspections to find cracking of the front spar web of the wing as specified in paragraphs (b)(1) and (b)(2) of this AD, per the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-57-2313, Revision 1, dated February 21, 2002.

(1) Do the applicable initial or post-modification inspection at the times specified for the inspections in Tables 1 through 3 of Figure 1 of the Accomplishment Instructions or Appendix A of the service bulletin.

(2) After doing the applicable initial or post-modification inspection specified in paragraph (b)(1) of this AD: Repeat that inspection within the applicable intervals specified in Tables 1 through 3 of Figure 1 of the Accomplishment Instructions or Appendix A of the service bulletin.

**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."

## **Repair**

(c) If any cracking is found during any inspection required by this AD, including any inspection performed during accomplishment of the optional modification per paragraph (d) of this AD: Before further flight, repair 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 who has been authorized by the Manager, Seattle ACO, to make such findings. For a repair method to be approved, the approval must specifically reference this AD.

## **Optional Modification**

(d) Accomplishment of the modification of Zone B per Part 2 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-57-2313, Revision 1, dated February 21, 2002, would extend the threshold recommended in Tables 1 through 3 of Figure 1 of the Accomplishment Instructions or Appendix A of the service bulletin for the repetitive inspections of Zone B, to the new post-modification threshold specified in Tables 1 through 3 of Figure 1 of the service bulletin.

## **Previously Accomplished Inspections and Modifications**

(e) Inspections and modifications done before the effective date of this AD per Boeing Special Attention Service Bulletin 747-57-2313, including Appendices A and B, dated April 19, 2001, are considered acceptable for compliance with the applicable actions specified in this AD.

**Note 3:** Boeing Special Attention Service Bulletin 747-57-2313, Revision 1, dated February 21, 2002, recommends prior or concurrent accomplishment of Boeing Alert Service Bulletins 747-57A2259, 747-57A2266, and 747-54A2159. The modifications in those service bulletins are required by AD 95-10-16, amendment 39-9233.

## **Alternative Methods of Compliance**

(f) 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 Aircraft Certification Office (ACO), FAA. 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.

**Note 4:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

## **Special Flight Permit**

(g) 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**

(h) Unless otherwise specified in this AD, the actions shall be done in accordance with Boeing Special Attention Service Bulletin 747-57-2313, Revision 1, dated February 21, 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 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**

(i) This amendment becomes effective on September 24, 2003.

Issued in Renton, Washington, on August 12, 2003.

Kyle L. Olsen,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 03-20986 Filed 8-19-03; 8:45 am]

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