

# DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [65 FR 81331 12/26/2000]

Docket No. 2000-NM-134-AD; Amendment 39-12047; AD 2000-25-12

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747 Series Airplanes

AGENCY: Federal Aviation Administration, DOT

ACTION: Final rule

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 747 series airplanes, that requires inspections to detect cracking of the front spar web of the wing, and corrective action, if necessary. The actions specified by this AD are 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 January 30, 2001.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of January 30, 2001.

**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 Anderson, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2771; fax (425) 227-1181.

**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 series airplanes was published in the Federal Register on July 31, 2000 (65 FR 46672). That action proposed to require inspections to detect cracking of the front spar web of the wing, and corrective action, 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 comments received.

## Request to Provide for Airplanes With Replaced Front Spar Web

One commenter states that the airplane manufacturer informed it that inspections by Boeing Alert Service Bulletin 747-57A2311, dated January 27, 2000, are not necessary at this time for airplanes modified by Boeing Service Bulletin 747-57A2303. (In a separate comment, addressed below, the airplane manufacturer notes that the original issue of Boeing Alert Service Bulletin 747-57A2311

will be revised to, among other things, extend the compliance threshold for inspection of certain airplanes modified by Boeing Service Bulletin 747-57A2303.)

The commenter makes no specific request for a change to the proposed rule. The FAA infers that the commenter is requesting that the FAA revise the proposed rule to extend the compliance time for the inspections required by paragraph (a) of this AD for airplanes that have been modified by Boeing Service Bulletin 747-57A2303, Revision 1, dated September 25, 1997. The FAA concurs with this request. The modification to which the commenter refers involves replacement of the front spar web of the wing with a new shot-peened front spar web, and it is provided as an optional terminating action in paragraph (c) of AD 99-10-09, amendment 39-11162 (64 FR 25194, May 11, 1999). The FAA finds that, if this optional terminating action has been done, operators are not required to inspect the new section of the front spar web that overlaps with the inspection area specified in this AD (the area between FSSI 668 and FSSI 684) until 13,000 flight cycles or 30,000 flight hours after the accomplishment of the replacement. A new paragraph (b) has been added to this AD to specify this, and subsequent paragraphs have been reordered accordingly.

#### **Request to Specify Method of Compliance for Modified Airplanes**

One commenter requests that the FAA revise the proposed rule to provide special inspection instructions for airplanes modified in accordance with Boeing Service Bulletin 747-57A2303. The commenter points out that if the modification in that service bulletin is installed, it is not possible to accomplish the "Part 2 optional web inspection" given as one option for compliance with paragraph (a) of the proposed AD, due to the proximity of a new web splice on the aft face of the front spar web. Thus, airplanes modified per Boeing Service Bulletin 747-57A2303 can only be inspected using the "Part 1 external web inspection" in paragraph (a) of this AD.

The FAA partially concurs with the commenter's request. The FAA does not find it necessary to revise this AD to include special instructions for airplanes modified with another AD. Operators should note that most AD actions address modifications affecting the subject area of the AD using the note that appears as Note 1 of this AD, which states, "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 (d) of this AD." However, to be clear, the FAA finds that it is appropriate in this case to clarify that operators of airplanes modified by Boeing Service Bulletin 747-57A2303, Revision 1, must apply for an alternative method of compliance, in accordance with paragraph (d) of this AD, if they choose to comply with this AD using the Part 2 optional web inspection. Note 3 has been added to this AD accordingly.

#### **Request to Delay Issuance of Final Rule**

One commenter, the airplane manufacturer, requests that the FAA delay issuance of the proposed AD until a new revision of Boeing Alert Service Bulletin 747-57A2311 is issued. The commenter describes several changes that will be made to this service bulletin, which is referenced as the appropriate source of service information in the proposed rule. These changes include:#

- For certain airplanes modified by Boeing Service Bulletin 747-57A2303, the compliance threshold for inspecting certain areas will be extended. (See "Request to Provide for Airplanes With Replaced Front Spar Web," above.)
- The type of inspection will be revised for certain airplanes on which web splice plates have been installed by Boeing Service Bulletin 747-57A2303. (See "Request to Specify Method of Compliance for Modified Airplanes," above.)
- The inspection area will be expanded.
- Instructions for terminating action and post-modification inspections will be included.

The FAA does not concur with the commenter's request to delay the issuance of this final rule. The FAA finds that, in view of the criticality of the unsafe condition addressed in this AD, it would be inappropriate to delay issuance of this AD pending receipt of a new service bulletin. Once the new service bulletin has been approved, the FAA may consider further rulemaking to mandate the actions in that bulletin. However, note that, based on the requests of another commenter, changes have been made to this AD related to the first two items listed by the commenter. See "Request to Provide for Airplanes With Replaced Front Spar Web" and "Request to Specify Method of Compliance for Modified Airplanes," above, for more information on these changes.

### **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.

### **Cost Impact**

There are approximately 478 Model 747 series 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 one option for compliance with this AD will take approximately 48 work hours per airplane (not including access and close-up), at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the external inspections on U.S. operators is estimated to be \$2,880 per airplane, per inspection cycle.

In lieu of accomplishment of the external inspections, this AD provides an optional web inspection that takes approximately 50 work hours per airplane, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the optional web inspection on U.S. operators is estimated to be \$3,000 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.

### **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:

SUPERSEDED

## AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION  
P.O. BOX 26460  
OKLAHOMA CITY, OKLAHOMA 73125-0460



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

*AD's are posted on the internet at <http://av-info.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).

### **2000-25-12 BOEING: Amendment 39-12047. Docket 2000-NM-134-AD.**

Applicability: Model 747 series airplanes, as listed in Boeing Alert Service Bulletin 747-57A2311, dated January 27, 2000; 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 (d) 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:

#### **Repetitive Inspections**

(a) 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 visual, 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. In lieu of the Part 1 external web inspection, accomplishment of the Part 2 optional web inspection to detect cracking-which also includes detailed visual, ultrasonic, and HFEC inspections-in accordance with Boeing Alert Service Bulletin 747-57A2311, dated January 27, 2000, is acceptable for compliance with this paragraph. Repeat the inspections thereafter at intervals not to exceed 2,000 flight cycles.

Note 2: For the purposes of this AD, a detailed visual 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 the effective date of this AD.

Note 3: Operators of airplanes modified by Boeing Service Bulletin 747-57A2303, Revision 1, dated September 25, 1997; as allowed by paragraph (c) of AD 99-10-09, amendment 39-11162; must apply for an alternative method of compliance, in accordance with paragraph (d) of this AD, if they choose to use the Part 2 optional web inspection to comply with paragraph (a) of this AD.

### **Exception for Modified Airplanes**

(b) For airplanes on which the front spar web between front spar station inboard (FSSI) 668 and FSSI 692 has been replaced 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 front spar station inboard (FSSI) 668 and FSSI 684], dated January 27, 2000, and repeat the inspections thereafter, in accordance with paragraph (a) of this AD.

### **Repair**

(c) If any cracking is detected during any inspection required by paragraph (a) or (b) of 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.

### **Alternative Methods of Compliance**

(d) 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.

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 Permits**

(e) 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**

(f) Except as provided by paragraph (c) of this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 747-57A2311, dated January 27, 2000. 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**

(g) This amendment becomes effective on January 30, 2001.