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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

[Docket No. 2001-NM-394-AD; Amendment 39-13185; AD 2003-11-25]

**RIN 2120-AA64**

**Airworthiness Directives; Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200F, 747-200C, 747-300, 747SR, and 747SP 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 transport category airplanes listed above. This AD requires an initial inspection to identify all H-11 steel bolts on the outer chord of the body station (BS) 2360 aft pressure bulkhead between stringers 12L and 12R, follow-on repetitive inspections to identify all remaining H-11 steel bolts on the entire outer chord of the BS 2360 aft pressure bulkhead, and follow-on and corrective actions if necessary. This AD also requires eventual replacement of all H-11 steel bolts with Inconel bolts. This action is necessary to prevent broken bolts, which could result in progressive failure of the remaining bolts and consequent structural damage, rapid depressurization, and loss of control of the airplane. This action is intended to address the identified unsafe condition.

**DATES:** Effective July 16, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of July 16, 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:** Rick Kawaguchi, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6434; 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 series airplanes was published in the Federal Register on September 25, 2002 (67 FR 60189). That action proposed to require an initial inspection to identify all H-11 steel bolts on the outer chord of the body station (BS) 2360 aft pressure bulkhead between stringers 12L and 12R, follow-on repetitive inspections to identify all remaining H-11 steel bolts on the entire outer chord of the BS 2360 aft pressure bulkhead, and follow-on and corrective actions if necessary. That action also proposed to require eventual replacement of all H-11 steel bolts with Inconel bolts.

## **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.

### **Request to Revise Statement of Unsafe Condition**

One commenter requests that the FAA revise the unsafe condition in the proposed AD, which states that the consequences of not finding broken H-11 steel bolts is progressive failure of the remaining bolts and consequent structural damage and rapid depressurization of the airplane. The commenter notes that, while these are effects of progressive bolt failure, it is more significant that such failure could result in loss of control of the airplane. We concur and have revised the statement of unsafe condition throughout this final rule.

### **Request to Clarify Subject of Repetitive Inspections**

One commenter requests that we revise paragraph (c) of the proposed AD to clarify that the repeat inspections in that paragraph apply only to the remaining H-11 steel bolts (that is, the H-11 steel bolts that have not been replaced with Inconel bolts). We concur that the repetitive ultrasonic inspections and torque checks for cracked or broken bolts are necessary only for the remaining H-11 steel bolts. We have clarified paragraph (c) of this final rule accordingly.

### **Request to Revise Instructions in Paragraph (d) of Proposed AD**

One commenter requests that we revise the instructions in paragraph (d) of the proposed AD to remove the instruction to coat the Inconel bolt with corrosion-inhibiting compound after installation. The commenter states that the instructions for applying corrosion protection on the replacement Inconel bolt that are stated in paragraph (d) of the proposed AD are incomplete and suggests alternative instructions. The commenter recommends that paragraph (d) refer to Figure 4 of the service bulletin.

We do not agree that any change is necessary. Paragraph (d) of this AD requires replacing all subject H-11 steel bolts per Boeing Alert Service Bulletin 747-53A2474, dated October 25, 2001. When we refer to a service bulletin in this way in an AD, operators are required to follow all procedures in the service bulletin, including the instructions for corrosion prevention that are specified in Figure 4 of the service bulletin. (We note that the Accomplishment Instructions of the service bulletin refer to Figure 4 of the service bulletin for replacement procedures.) No change to the final rule is needed in this regard.

## **Request to Require Inspection or Replacement of Adjacent H-11 Steel Bolts**

One commenter requests that we consider requiring operators to inspect or replace an H-11 steel bolt (including reworking the bolt hole) found on either side of a cracked H-11 steel bolt during the initial inspection. The commenter states that such a requirement should not add significant downtime and will better ensure safety.

We do not agree that any change is necessary. This AD requires inspecting all H-11 steel bolts in the subject area, which would include H-11 bolts adjacent to cracked or broken bolts. While an operator has the option of immediately replacing any H-11 steel bolt that is adjacent to a cracked or broken bolt, we find that performing repetitive inspections of remaining H-11 steel bolts will provide an acceptable level of safety until all H-11 steel bolts are replaced as required by paragraph (d) of this AD. (Such replacement is required within 6 years after the effective date of the AD.) No change to the final rule is needed in this regard.

### **Clarification of Applicability**

We have revised the applicability statement of this AD to clarify that Boeing Model 747-400, -400D, and -400F series airplanes are not affected by this AD. The airplanes with line numbers 1 through 644 inclusive are Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200F, 747-200C, 747-300, 747SR, and 747SP series airplanes.

### **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 487 airplanes of the affected design in the worldwide fleet. The FAA estimates that 165 airplanes of U.S. registry will be affected by this AD.

It will take approximately 9 work hours per airplane to accomplish the required initial inspection, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the initial inspection on U.S. operators is estimated to be \$89,100, or \$540 per airplane.

It will take approximately 35 work hours per airplane to accomplish the required follow-on inspection to identify all remaining H-11 steel bolts on the entire outer chord, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the follow-on inspection on U.S. operators is estimated to be \$346,500, or \$2,100 per airplane, per inspection cycle.

Should an operator be required to replace the H-11 steel bolts, it will take approximately 108 work hours per airplane to accomplish the replacement, at an average labor rate of \$60 per work hour. Required parts will cost approximately \$3,233 per airplane. Based on these figures, the cost impact is estimated to be \$9,713 per airplane.

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:

# 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"*

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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).

**2003-11-25 Boeing:** Amendment 39-13185. Docket 2001-NM-394-AD.

**Applicability:** Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200F, 747-200C, 747-300, 747SR, and 747SP series airplanes; line numbers 1 through 644 inclusive; 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 (g) 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 prevent broken H-11 steel bolts, which could result in progressive failure of the remaining bolts and consequent structural damage, rapid depressurization, and loss of control of the airplane, accomplish the following:

## **Initial Inspection**

(a) Within 18 months after the effective date of this AD: Do a detailed inspection to identify all H-11 steel bolts on the outer chord of the body station (BS) 2360 aft pressure bulkhead between stringers 12L and 12R. Do the inspection by checking the bolt part number stamped on the bolt head, or verifying the bolt is steel by using a magnet, per Boeing Alert Service Bulletin 747-53A2474, dated October 25, 2001. If no H-11 steel bolt is found, no further action is required by this paragraph. If any H-11 steel bolt is found, do the requirements specified in paragraph (c) of this AD.

**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."

## **Follow-On Inspections/Corrective Actions**

(b) Within 18 months after doing the inspection required by paragraph (a) of this AD, or within 18 months after the effective date of this AD, whichever is later: Do a detailed inspection to identify all remaining H-11 steel bolts on the entire outer chord of the BS 2360 aft pressure bulkhead, per Boeing Alert Service Bulletin 747-53A2474, dated October 25, 2001. If no H-11 steel bolt is found, no further action is required by this paragraph. If any H-11 steel bolt is found, do the requirements specified in paragraph (c) of this AD.

(c) For any H-11 steel bolt found during any inspection required by paragraph (a) or (b) of this AD: Before further flight, do either an ultrasonic inspection or a torque check for cracked or broken bolts, or replace the H-11 steel bolt with an Inconel bolt per Boeing Alert Service Bulletin 747-53A2474, dated October 25, 2001. Replace any cracked or broken bolt with an Inconel bolt before further flight per the service bulletin. Then repeat the inspection of the remaining H-11 steel bolts at intervals not to exceed 18 months until the terminating action required by paragraph (d) of this AD is done.

## **Terminating Action**

(d) Within 6 years after the effective date of this AD: Replace all H-11 steel bolts on the entire outer chord of the BS 2360 aft pressure bulkhead with Inconel bolts (including visually inspecting the bolt hole for corrosion, oversizing the hole up to 1/32 inch to remove any corrosion, and, after installing an Inconel bolt, coating the bolt with corrosion inhibitor compound), per Boeing Alert Service Bulletin 747-53A2474, dated October 25, 2001. When this paragraph is done, the requirements of this AD are terminated.

## **Exceptions to Service Information**

(e) Where Boeing Alert Service Bulletin 747-53A2474, dated October 25, 2001, specifies to contact Boeing for appropriate action: Before further flight, repair in accordance with 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.

## **Spares**

(f) As of the effective date of this AD: No person shall install an H-11 steel bolt on the outer chord of the BS 2360 aft pressure bulkhead on any airplane.

## **Alternative Methods of Compliance**

(g) 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 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**

(h) 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**

(i) Unless otherwise provided by this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 747-53A2474, dated October 25, 2001. 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**

(j) This amendment becomes effective on July 16, 2003.

Issued in Renton, Washington, on May 30, 2003.

Ali Bahrami,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 03-14274 Filed 6-10-03; 8:45 am]

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