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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2005-23441; Directorate Identifier 2005-NM-199-AD; Amendment 39-14571; AD 2006-09-01]**

**RIN 2120-AA64**

**Airworthiness Directives; Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP Series Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

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**SUMMARY:** The FAA is superseding an existing airworthiness directive (AD), which applies to certain Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes. That AD currently requires repetitive detailed and ultrasonic inspections of the thrust links of the rear engine mounts for any crack or fracture and corrective actions if necessary. This new AD requires repetitive replacement of the thrust links with new or overhauled thrust links, which ends the repetitive detailed and ultrasonic inspections. This AD results from the finding of fractured and cracked forward lugs of the rear engine mount thrust link on the number one strut on two airplanes. We are issuing this AD to prevent cracked or fractured thrust links that could lead to the loss of the load path for the rear engine mount bulkhead and damage to other primary engine mount structure, which could result in the in-flight separation of the engine from the airplane and consequent loss of control of the airplane.

**DATES:** This AD becomes effective May 26, 2006.

On September 30, 2005 (70 FR 54474, September 15, 2005), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-71A2309, dated August 18, 2005.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, room PL-401, Washington, DC.

Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for service information identified in this AD.

**FOR FURTHER INFORMATION CONTACT:** Ivan Li, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6437; fax (425) 917-6590.

## **SUPPLEMENTARY INFORMATION:**

### **Examining the Docket**

You may examine the airworthiness directive (AD) docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the street address stated in the ADDRESSES section.

### **Discussion**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that supersedes AD 2005-19-06, amendment 39-14271 (70 FR 54474, September 15, 2005). The existing AD applies to certain Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes. That NPRM was published in the Federal Register on January 11, 2006 (71 FR 1718). That NPRM proposed to continue to require repetitive detailed and ultrasonic inspections of the thrust links of the rear engine mounts for any crack or fracture and corrective actions if necessary. That NPRM also proposed to require repetitive replacement of the thrust links with new or overhauled thrust links, which ends the repetitive detailed and ultrasonic inspections.

### **Comments**

We provided the public the opportunity to participate in the development of this AD. We have considered the comments that have been received on the NPRM.

### **Support for the NPRM**

Boeing and Northwest Airlines (NWA) support the NPRM.

### **Request for Clarification**

NWA states that, as a result of the inspections required by AD 2005-19-06, some thrust links may have already been replaced with new or overhauled thrust links (prior to the initial compliance time specified in Table 1 of the NPRM). According to NWA's interpretation of paragraph (e) of the NPRM, replacements done previously in accordance with AD 2005-19-06 comply with the initial replacement specified in the NPRM. We infer that the commenter would like us to clarify whether this interpretation is correct.

We agree that, under paragraph (e) of this AD, the actions required by this AD must be accomplished within the specified compliance times, unless the actions have been previously accomplished. Therefore, replacement of a cracked or fractured thrust link in accordance with paragraph (h) of AD 2005-19-06 constitutes compliance with the initial replacement required by paragraph (k) of this AD, for that thrust link only. No change to this AD is necessary.

## Conclusion

We have carefully reviewed the available data, including the comments that have been submitted, and determined that air safety and the public interest require adopting the AD as proposed.

## Costs of Compliance

There are about 274 airplanes of the affected design in the worldwide fleet. The following table provides the estimated costs, at an average labor rate of \$65 per hour, for U.S. operators to comply with this AD.

ESTIMATED COSTS					
Action	Work hours	Parts	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
Inspection (required by AD 2005-19-06).	8 (2 per engine)	None	\$520, per inspection cycle	100	\$52,000, per inspection cycle.
Replacement (new action)	4 (1 per engine)	\$41,424	\$41,684, per replacement cycle.	100	\$4,168,400, per replacement cycle.

## Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in subtitle VII, part A, subpart III, section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## Regulatory Findings

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD 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.

For the reasons discussed above, I certify that this AD:

- (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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the ADDRESSES section for a location to examine the regulatory evaluation.

## List of Subjects in 14 CFR Part 39

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

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 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. The Federal Aviation Administration (FAA) amends § 39.13 by removing amendment 39-14271 (70 FR 54474, September 15, 2005) and by adding the following new airworthiness directive (AD):

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

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

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)

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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).

**2006-09-01 Boeing:** Amendment 39-14571. Docket No. FAA-2005-23441; Directorate Identifier 2005-NM-199-AD.

## Effective Date

- (a) This AD becomes effective May 26, 2006.

## Affected ADs

- (b) This AD supersedes AD 2005-19-06.

## Applicability

(c) This AD applies to Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes, certificated in any category; equipped with Pratt & Whitney JT9D-3 and -7 series engines, except JT9D-70 engines; as identified in Boeing Alert Service Bulletin 747-71A2309, dated August 18, 2005.

## Unsafe Condition

(d) This AD results from the finding of fractured and cracked forward lugs of the rear engine mount thrust link on the number one strut on two airplanes. We are issuing this AD to prevent cracked or fractured thrust links that could lead to the loss of the load path for the rear engine mount bulkhead and damage to other primary engine mount structure, which could result in the in-flight separation of the engine from the airplane and consequent loss of control of the airplane.

## Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

## Restatement of Requirements of AD 2005-19-06

## Service Bulletin References

(f) The term "service bulletin," as used in this AD, means the Accomplishment Instructions of Boeing Alert Service Bulletin 747-71A2309, dated August 18, 2005.

## **Repetitive Inspections of Thrust Links**

(g) Within 90 days after September 30, 2005 (the effective date of AD 2005-19-06), do a detailed inspection and ultrasonic inspection of thrust link lugs having part number (P/N) 65B90360-1 or -4 of the rear engine mount of struts 1, 2, 3, and 4 for any crack or fracture, in accordance with Part 1 of the service bulletin. If the thrust link is not found cracked or fractured: Repeat the inspections thereafter at intervals not to exceed 1,200 flight cycles or 18 months, whichever is first, until the repetitive replacement or overhaul of the thrust link required by paragraph (k) of this AD is accomplished. Accomplishing the repetitive replacement or overhaul of a thrust link as specified in paragraph (h) or (k) of this AD terminates the repetitive inspections for that thrust link only.

## **Corrective Actions**

(h) If a cracked thrust link is found during any inspection required by paragraph (g) of this AD or during any replacement or overhaul done in accordance with the service bulletin: Before further flight, do the actions specified in paragraph (h)(1) of this AD. If a fractured thrust link is found during any inspection required by paragraph (g) of this AD or during any replacement or overhaul done in accordance with the service bulletin: Before further flight, do the actions specified in paragraphs (h)(1) and (h)(2) of this AD.

(1) Replace the thrust link with a new or overhauled thrust link in accordance with Part 2 of the service bulletin; except as provided by paragraph (i) of this AD. Repeat the replacement at the applicable compliance time specified in paragraph (h)(1)(i) or (h)(1)(ii) of this AD.

(i) For replacement with a thrust link assembly having P/N 65B90360-1 or -4: Thereafter at intervals not to exceed 6,000 flight cycles.

(ii) For replacement with a thrust link assembly having P/N 65B90360-7: Thereafter at intervals not to exceed 12,000 flight cycles.

(2) Do the corrective actions in accordance with Parts 3, 4, and 5 of the service bulletin; except as provided by paragraph (i) of this AD.

## **Exception to Service Bulletin**

(i) Where the service bulletin specifies to contact Boeing for appropriate action, do the corrective action using a method approved in accordance with paragraph (l) of this AD.

## **Credit for Certain Corrective Actions**

(j) Reworking the lugs on the bulkhead fitting of the rear engine mount as specified in paragraphs (b)(2), (e), and (f) of AD 2001-15-15, amendment 39-12349, is acceptable for compliance with accomplishing the corrective action specified in "Part 3–Rear Engine Mount Bulkhead Inspection and Lug Overhaul and Upper Fitting Overhaul and Bolt Replacement" of the service bulletin.

## **New Requirements of This AD**

### **Terminating Action–Repetitive Replacement or Overhaul of All Thrust Links**

(k) At the applicable compliance times specified in Table 1 of this AD: Repetitively replace the thrust link of the rear engine mount of struts 1, 2, 3, and 4 with a new or overhauled thrust link, in accordance with Part 2 of the service bulletin; except as provided by paragraph (i) of this AD. During any replacement required by this paragraph, an existing thrust link may be replaced with a new or overhauled thrust link having P/N 65B90360-1, -4 or -7, provided that the applicable repetitive

interval specified in Table 1 of this AD is complied with. If a fractured thrust link is found during any replacement or overhaul done in accordance with this paragraph: Before further flight, do the corrective actions specified in paragraph (h)(2) of this AD. Repetitive replacement of all thrust links having P/N 65B90360-1 or -4 terminates the repetitive inspections required by paragraph (g) of this AD. Accomplishing the repetitive replacement or overhaul of a thrust link required by paragraph (h) of this AD constitutes compliance with the requirements of this paragraph for that thrust link only.

**TABLE 1.—COMPLIANCE TIMES**

<b>For thrust link P/N—</b>	<b>Initial replacement—</b>	<b>Repetitive interval—</b>
65B90360-1 or -4	Within 36 months after the effective date of this AD.	Thereafter at intervals not to exceed 6,000 flight cycles.
65B90360-7	Within 12,000 flight cycles after the new thrust link has been installed.	Thereafter at intervals not to exceed 12,000 flight cycles.

**Alternative Methods of Compliance (AMOCs)**

(1)(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) Before using any AMOC approved in accordance with § 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD, if it is approved by an Authorized Representative for the Boeing Commercial Airplanes Delegation Option Authorization Organization who has been authorized by the Manager, Seattle ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) The actions identified in paragraphs (g) and (k) of this AD are approved as an AMOC to paragraphs (c) and (d) of AD 2004-07-22, amendment 39-13566, for the inspections of structural significant item S-2, for the thrust links only, of Boeing Supplemental Structural Inspection Document D6-35022, Revision G, dated December 2000. All provisions of AD 2004-07-22 that are not specifically referenced in this paragraph, including the initial inspection threshold required by paragraph (d) of AD 2004-07-22, remain fully applicable and must be complied with.

(5) AMOCs approved previously in accordance with AD 2005-19-06, amendment 39-14271, are approved as AMOCs for the corresponding provisions of this AD.

**Material Incorporated by Reference**

(m) You must use Boeing Alert Service Bulletin 747-71A2309, dated August 18, 2005, to perform the actions that are required by this AD, unless the AD specifies otherwise. On September 30, 2005 (70 FR 54474, September 15, 2005), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-71A2309, dated August 18, 2005. Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for a copy of this service information. You may review copies at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., room PL-401, Nassif Building, Washington, DC; on the Internet at <http://dms.dot.gov>; or at the National Archives and Records Administration (NARA). For information on the availability of this material at the NARA, call (202) 741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on April 13, 2006.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 06-3796 Filed 4-20-06; 8:45 am]

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