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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-20325; Directorate Identifier 2003-NM-129-AD; Amendment 39-14217; AD 2005-16-11]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SP, and 747SR Series Airplanes; Equipped With Pratt & Whitney Model JT9D-3 and -7 Series Engines

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

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Boeing transport category airplanes listed above. This AD requires repetitive inspections for cracks of the upper surface of the aft lower spar web of the inboard and outboard struts, as applicable; and repetitive inspections for cracks of the upper surface of the intermediate web bay of the aft lower spar. This AD also requires repetitive inspections and torque checks of the bolts common to the aft lower spar chords and the fitting of the rear engine mount bulkhead for missing, loose, or fractured bolts, as applicable; and corrective action, if necessary. This AD is prompted by reports of cracking in the aft lower spar web and reports of missing and fractured bolts. We are issuing this AD to detect and correct cracking of the aft lower spar web, and to prevent missing, loose, or fractured bolts common to the aft lower spar chords and the fitting of the rear engine mount bulkhead, which could result in the loss of the aft lower spar load path and reduced structural capability of the pylon, which may result in the separation of the engine from the airplane.

DATES: This AD becomes effective September 16, 2005.

The incorporation by reference of a certain publication listed in the AD is approved by the Director of the Federal Register as of September 16, 2005.

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207.

Docket: The AD docket contains the proposed AD, comments, and any final disposition. You can examine the 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 U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Washington, DC. This docket number is FAA-2005-20325; the directorate identifier for this docket is 2003-NM-129-AD.

FOR FURTHER INFORMATION CONTACT: Candice Gerretsen, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6428; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR part 39 with an AD for certain Boeing transport category airplanes. That action, published in the Federal Register on February 10, 2005 (70 FR 7052), proposed to require repetitive inspections for cracks of the upper surface of the aft lower spar web of the inboard and outboard struts, as applicable; and repetitive inspections for cracks of the upper surface of the intermediate web bay of the aft lower spar. That action also proposed to require repetitive inspections and torque checks of the bolts common to the aft lower spar chords and the fitting of the rear engine mount bulkhead for missing, loose, or fractured bolts, as applicable; and corrective action, if necessary.

Comments

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

Request To Revise Applicability

One commenter requests that the applicability be revised to read:

This AD applies to engine strut assemblies installed on Boeing Model 747-100, -100B, -100B SUD, -200B, -200C, -200F, and -300 series airplanes, and Model 747-SP and 747 SR series airplanes; certificated in any category; equipped with Pratt and Whitney Model JT9D-3 and -7 series engines.

The commenter contends that retired airplanes are not included in the applicability of the proposed AD and states that strut assemblies may be interchanged between airplanes.

We do not agree to revise the applicability. Retired airplanes are included by variable number in Boeing Alert Service Bulletin 747-54A2212, dated May 1, 2003 (referenced as the appropriate source of information for the applicability of the proposed AD). Also, it is our policy to not write the applicability of ADs against a part of the airframe, such as the strut. Section 39.3 ("Definition of airworthiness directives") of the Federal Aviation Regulations (14 CFR 39.3) specifies that airworthiness directives apply to the following products: aircraft, aircraft engine, propeller, or appliance (which is not part of the airframe). We have not changed the final rule in this regard.

Request To Advise Operators That Strut Assemblies Are Interchangeable

The same commenter requests that a clause be added to advise operators that the strut assemblies are interchangeable and that, if a strut assembly is installed on another airplane, that airplane must be evaluated to determine if it is applicable to the proposed AD.

We agree that the strut assembly is an interchangeable part. However, we do not agree to revise the final rule to advise operators that the strut assemblies are interchangeable because the strut is a serialized part that can be tracked. Operators should note that they are responsible for maintaining the configuration of its airplanes, especially in an area affected by an AD. As required by section 39.17

of the Federal Aviation Regulations (14 CFR 39.17), for airplanes that have been modified, altered, or repaired so that the accomplishment of the requirements of this final rule is affected, the operator must request approval for an alternative method of compliance according to paragraph (q) of this AD.

Request To Define Airplane Groups by Pylon Web Thickness

One commenter requests that the airplane groups be defined solely by pylon web thickness. The commenter states that the groups identified in the service bulletin do not reflect its airplane configuration. The commenter notes that it has Group 1 airplanes with 0.032-inch pylon webs, Group 3 airplanes with 0.025-inch pylon webs, and some airplanes with mixed 0.025-inch pylon webs and 0.032-inch pylon webs.

We acknowledge that the service bulletin may not reflect an operator's current aircraft configuration because of post-delivery modifications. Since the groupings are not only defined by web thickness but also by the location of web stiffeners and the web material; we do not agree to revise the final rule to define airplane groups by pylon web thickness. Operators are responsible for maintaining the configuration of its airplanes. If the configuration of an airplane has been changed in an area affected by this final rule and the accomplishment of the requirements of this final rule is affected, operators must request approval for an alternative method of compliance according to paragraph (q) of this AD as required by 14 CFR 39.19.

Explanation of Change to Applicability

We have revised the applicability of the proposed AD to identify model designations as published in the most recent type certificate data sheet for the affected models.

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 with the change described previously. We have determined that this change will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

There are about 244 airplanes of the affected design in the worldwide fleet. This AD will affect about 82 airplanes of U.S. registry. The following table provides the estimated costs for U.S. operators to comply with this AD.

ESTIMATED COSTS

Applicable airplanes identified in Boeing Alert Service Bulletin 747–54A2212 As—	Action	Work hours	Average labor rate per hour	Cost per airplane, per inspection cycle
Groups 1–6	Web inspection	8	$65	$520
Groups 7–8	Web inspection	4	65	260
Groups 1–5	Web bay inspection	4	65	260
Groups 1–6	Bolt inspection	4	65	260

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. 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 FAA amends § 39.13 by adding the following new airworthiness directive (AD):

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).

2005-16-11 Boeing: Amendment 39-14217. Docket No. FAA-2005-20325; Directorate Identifier 2003-NM-129-AD.

Effective Date

(a) This AD becomes effective September 16, 2005.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SP, and 747SR series airplanes; certificated in any category; equipped with Pratt & Whitney Model JT9D-3 and -7 series engines; as identified in Boeing Alert Service Bulletin 747-54A2212, dated May 1, 2003.

Unsafe Condition

(d) This AD was prompted by reports of cracking in the aft lower spar web and reports of missing and fractured bolts. We are issuing this AD to detect and correct cracking of the aft lower spar web, and to prevent missing, loose, or fractured bolts common to the aft lower spar chords and the fitting of the rear engine mount bulkhead, which could result in the loss of the aft lower spar load path and reduced structural capability of the pylon, which may result in the separation of the engine from 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.

Service Bulletin Reference

(f) The term "service bulletin," as used in this AD, means Boeing Alert Service Bulletin 747-54A2212, dated May 1, 2003.

Part 1–Web Inspections

(g) At the applicable times specified in paragraph (g)(1), (g)(2), or (g)(3) of Table 1 of this AD, do initial and repetitive detailed inspections for cracks of the upper surface of the aft lower spar web of the inboard and outboard struts, as applicable; and before further flight, do any applicable repair; by doing all the actions specified in "Part 1–Web Inspection" of the Work Instructions of the service bulletin. For certain airplanes, the repetitive inspections may be deferred or ended provided that the optional stiffener addition specified in paragraph (k) of this AD is done.

Note 1: For the purposes of this AD, a detailed inspection is "An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses, etc. may be necessary. Surface cleaning and elaborate procedures may be required."

TABLE 1.—COMPLIANCE TIMES FOR WEB INSPECTION

For airplanes identified in the Service Bulletin as—	Initial compliance time is—	Repetitive interval is—
(1) Group 1 airplanes on which the modification specified in Boeing Service Bulletin 747–54–2028, dated August 1, 1972, has been done; and Group 2 airplanes.	Within 12 months after the effective date of this AD.	At intervals not to exceed 2,400 flight cycles.
(2) Group 1 airplanes on which the modification specified in Boeing Service Bulletin 747–54–2028, dated August 1, 1972, has not been done; and Group 7 airplanes.	Within 6 months after the effective date of this AD.	At intervals not to exceed 350 flight cycles.
(3) Group 3, 4, 5, 6, and 8 airplanes	Within 12 months after the effective date of this AD.	At intervals not to exceed 1,200 flight cycles.

Part 2–Intermediate Web Bay Inspection

(h) At the applicable times specified in paragraph (h)(1) or (h)(2) of Table 2 of this AD, do initial and repetitive detailed inspections for cracks of the upper surface of the intermediate web bay of the aft lower spar; and before further flight do any applicable repair; by doing all the actions specified in "Part 2–Intermediate Web Bay Inspection" of the Work Instructions of the service bulletin. The repetitive inspections may be ended provided that the optional intermediate stiffener addition specified in paragraph (l) of this AD is done.

TABLE 2.—COMPLIANCE TIMES FOR INTERMEDIATE WEB BAY INSPECTIONS

For airplanes identified in the Service Bulletin as—	Initial compliance time is—	Repetitive interval is—
(1) Group 1 through 4 airplanes on which the modification specified in Boeing Service Bulletin 747–71–2188, dated March 14, 1983, has been done and on which the additional work specified in Boeing Service Bulletin 747–71–2188, Revision 1, dated January 17, 1986; or Revision 2, dated March 26, 1987; has not been done.	Within 6 months after the effective date of this AD.	At intervals not to exceed 350 flight cycles.

For airplanes identified in the Service Bulletin as—	Initial compliance time is—	Repetitive interval is—
(2) Group 5 airplanes on which the modification specified in Boeing Service Bulletin 747–54–2115, dated February 14, 1986; or Revision 1, dated May 12, 1988; has not been done.	Within 6 months after the effective date of this AD.	At intervals not to exceed 350 flight cycles.

Part 3–Maraging or H-11 Steel Bolt Inspection

(i) For Group 1 through 6 airplanes identified in the service bulletin: Within 12 months after the effective date of this AD, do a detailed inspection and torque check of the bolts common to the aft lower spar chords and the fitting of the rear engine mount bulkhead for missing, loose, or fractured bolts, and do any applicable replacement (including related investigative actions and corrective action), by doing all the actions specified in "Part 3–Maraging or H-11 Steel Bolt Inspection" of the Work Instructions of the service bulletin, except as provided by paragraph (o) of this AD. Do any applicable replacements (including related investigative actions and corrective action) before further flight, except as provided by paragraph (j) of this AD. Repeat the actions thereafter at intervals not to exceed 18 months. The inspections and torque checks specified in paragraph (i) of this AD may be ended provided that the replacement specified in paragraph (n) of this AD is done.

(j) If during any inspection required by paragraph (i) of this AD, one of the conditions specified in paragraphs (j)(1) and (j)(2) of this AD is found, do the applicable actions specified in paragraphs (j)(1) and (j)(2) of this AD.

(1) If a missing or fractured bolt is found on the inboard strut in any one bay, within 36 months after replacing the bolt with a new bolt, do the replacement specified in paragraph (n) of this AD.

(2) If two or more missing or fractured bolts are found in any one bay, before further flight, do the replacement specified in paragraph (n) of this AD.

Part 4–Optional Stiffener Addition

(k) Except as provided by paragraph (o) of this AD, accomplishing the optional stiffener addition for the inboard and outboard struts, doing the related investigation actions, and doing any applicable repair, by doing all the actions specified in "Part 4–Stiffener Addition" of the Work Instructions of the service bulletin before further flight after accomplishing the actions specified in paragraph (g) of this AD, defers or ends the repetitive inspections required by paragraph (g) of this AD as follows:

(1) For airplanes listed in paragraph (g)(2) of Table 1 of this AD, accomplishing the optional stiffener addition extends the repetitive inspections required by paragraph (g) of this AD to intervals not to exceed 2,400 flight cycles.

(2) For airplanes listed in paragraph (g)(3) of Table 1 of this AD, accomplishing the optional stiffener addition ends the repetitive inspections required by paragraph (g) of this AD.

Part 5–Optional Intermediate Stiffener Addition

(l) For airplanes identified in paragraphs (h)(1) and (h)(2) of Table 2 of this AD: Accomplishing the optional intermediate stiffener addition for the inboard and outboard struts, by doing all the actions specified in "Part 5–Intermediate Stiffener Addition" of the Work Instructions of the service bulletin before further flight after accomplishing the actions specified in paragraph (h) of this AD, except as provided by paragraph (m) of this AD, ends the repetitive inspections required by paragraph (h) of this AD.

(m) Where the service bulletin specifies to install stiffeners as shown in "service bulletin 747-71-2188 Revision 1 or later releases (Group 1, 2, 3, and 4 Airplanes) or 747-54-2115 Original Issue or Revision 1 (Group 5 Airplanes)," this AD requires that those actions be done in accordance with

Boeing Service Bulletin 747-71-2188, Revision 1, dated January 17, 1986, or Revision 2, dated March 26, 1987; or Boeing Service Bulletin 747-54-2115, dated February 14, 1986, or Revision 1, dated May 12, 1988; as applicable, except as provided by paragraph (o) of this AD.

Part 6–Maraging or H-11 Steel Bolt Replacement

(n) For Group 1 through 6 airplanes identified in the service bulletin: Except as provided by paragraph (o) of this AD, replacing all Maraging or H-11 steel bolts with new inconel bolts, doing the related investigation actions, and doing any applicable corrective action, by doing all the actions specified in "Part 6–Maraging or H-11 Steel Bolt Replacement" of the Work Instructions of the service bulletin ends the inspections and torque checks required by paragraph (i) of this AD.

Contact the FAA

(o) If during any action required by this AD the service bulletin specifies to contact Boeing for additional instructions; or if Boeing Service Bulletin 747-71-2188, Revision 1, dated January 17, 1986, or Revision 2, dated March 26, 1987; or Boeing Service Bulletin 747-54-2115, dated February 14, 1986, or Revision 1, dated May 12, 1988; specifies to repair according to operators equivalent procedures: Before further flight, repair according to a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA; or according to data meeting the certification basis of the airplane approved by an Authorized Representative for the Boeing 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 approval must specifically reference this AD.

Parts Installation

(p) As of the effective date of this AD, no person may install a Maraging or H-11 steel bolt in the locations specified in this AD, on any airplane.

Alternative Methods of Compliance (AMOCs)

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

Material Incorporated by Reference

(r) You must use Boeing Alert Service Bulletin 747-54A2212, dated May 1, 2003, to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approves the incorporation by reference of this document in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To get copies of the service information, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207. To view the AD docket, go to the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Nassif Building, Washington, DC. To review copies of the service information, go to 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*.

Issued in Renton, Washington, on August 4, 2005.
Kevin M. Mullin,
Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.
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