

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 39**

[Docket No. FAA-2005-22288; Directorate Identifier 2005-NM-132-AD]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747-400 Series Airplanes

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

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Boeing Model 747-400 series airplanes. This proposed AD would require doing a conductivity test of the upper deck floor beam at station 400 to identify the floor beam material. If the floor beam is manufactured from 7050 aluminum alloy, this proposed AD would also require inspecting the upper deck floor beam and certain fastener holes at the floor beam upper chord for cracking; repairing any cracking if necessary; and doing a preventative modification. This proposed AD results from several reports indicating that fatigue cracking was found in upper deck floor beams made from 7050 aluminum alloy. We are proposing this AD to find and fix cracking in the upper deck floor beam, which could extend and sever the floor beam. A severed floor beam could result in loss of controllability and rapid decompression of the airplane.

DATES: We must receive comments on this proposed AD by October 21, 2005.

ADDRESSES: Use one of the following addresses to submit comments on this proposed AD.

- DOT Docket Web site: Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically.
- Government-wide rulemaking Web site: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.
- Mail: Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., Nassif Building, Room PL-401, Washington, DC 20590.
- Fax: (202) 493-2251.
- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle,

Washington 98124-2207, for the service information identified in this proposed 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:**Comments Invited**

We invite you to submit any relevant written data, views, or arguments regarding this proposed AD. Include the docket number "FAA-2005-22288; Directorate Identifier 2005-NM-132-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the proposed AD. We will consider all comments received by the closing date and may amend the proposed AD in light of those comments.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this proposed AD. Using the search function of that web site, anyone can find and read the comments in any of our dockets, including the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477-78), or you may visit <http://dms.dot.gov>.

Examining the Docket

You may 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 DOT street address stated in the **ADDRESSES** section. Comments will be available in the AD docket shortly after the Docket Management System receives them.

Discussion

We have received several reports indicating that fatigue cracking was found in upper deck floor beams made from 7050 aluminum alloy, on Boeing Model 747-100, -200F, and -300 series airplanes. The upper deck floor beams on most Model 747-400 series airplanes

are made from 2024 aluminum alloy; however, the manufacturer has informed us that the upper deck floor beam at station 400 on some Model 747-400 series airplanes was made from 7050 aluminum alloy. Investigation revealed that floor beams made from 7050 aluminum alloy are less resistant to fatigue cracking than floor beams made from 2024 aluminum alloy. Cracking in the upper deck floor beam, if not detected and corrected, could extend and sever the floor beam. A severed floor beam could result in loss of controllability and rapid decompression of the airplane.

Upper deck floor beams made from 7050 aluminum alloy at station 400 on certain Model 747-400 series airplanes are similar to those on the affected Model 747-100, -200F, and -300 series airplanes. Therefore, all these models may be subject to the same unsafe condition.

Other Related Rulemaking

On August 30, 2002, we issued AD 2002-18-04, amendment 39-12878 (67 FR 57510, September 11, 2001), applicable to certain Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-300, 747SR, and 747SP series airplanes. That AD requires one-time inspections for cracking in certain upper deck floor beams and follow-on actions. AD 2002-18-04 does not affect the requirements of this proposed AD.

On April 4, 2005, we issued AD 2005-07-21, amendment 39-14046 (70 FR 18277, April 11, 2005), applicable to all Boeing Model 747-200F and -200C series airplanes. That AD requires repetitive detailed inspections or a one-time open-hole high frequency eddy current inspection to detect cracking of certain areas of the upper deck floor beams, and corrective actions if necessary. That AD also requires one-time inspections for cracking of the web, upper chord, and strap of the upper deck floor beams, and modification or repair of the upper deck floor beams. AD 2005-07-21 does not affect the requirements of this proposed AD.

Relevant Service Information

We have reviewed Boeing Alert Service Bulletin 747-53A2509, dated June 9, 2005. The service bulletin describes procedures for doing a conductivity test of the upper deck floor beam at station 400 to identify the floor beam material, and if the floor beam is manufactured from 7050 aluminum alloy, accomplishing the following actions:

- Doing a one-time detailed inspection of the floor beam for cracking.

- Doing a one-time high frequency eddy current inspection (HFEC) of certain fastener holes at the floor beam upper chord for cracking.
- Contacting the manufacturer for repair instructions if any cracking is found during the detailed inspection of the floor beam.
- Oversizing fastener holes if any cracking is found during the HFEC inspection of certain fastener holes; and contacting the manufacturer for repair data if a certain edge margin cannot be maintained when oversizing the fastener holes.
- Contacting the manufacturer for instructions on doing a preventative modification.
- Reporting inspection results to the manufacturer.

Accomplishing the actions specified in the service information is intended to adequately address the unsafe condition.

FAA's Determination and Requirements of the Proposed AD

We have evaluated all pertinent information and identified an unsafe condition that is likely to exist or develop on other airplanes of this same type design. For this reason, we are proposing this AD, which would require accomplishing the actions specified in the service information described previously, except as discussed under "Difference Between the Proposed AD and Service Bulletin." The proposed AD would also require sending the inspection results to the manufacturer.

Difference Between the Proposed AD and Service Bulletin

The service bulletin specifies to contact the manufacturer for instructions on how to repair certain conditions, but this proposed AD would require repairing those conditions in one of the following ways:

- Using a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by an Authorized Representative for the Boeing Commercial Airplanes Delegation Option Authorization Organization whom we have authorized to make those findings.

Costs of Compliance

There are about 123 airplanes of the affected design in the worldwide fleet. This proposed AD would affect about 17 airplanes of U.S. registry. The proposed conductivity test would take about 2 work hours per airplane, at an average labor rate of \$65 per work hour. Based on these figures, the estimated cost of

the proposed AD for U.S. operators is \$2,210, or \$130 per airplane.

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 proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 the proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the 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 proposed 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, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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 adding the following new airworthiness directive (AD):

Boeing: Docket No. FAA-2005-22288; Directorate Identifier 2005-NM-132-AD.

Comments Due Date

(a) The FAA must receive comments on this AD action by October 21, 2005.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Boeing Model 747-400 series airplanes, certificated in any category; as identified in Boeing Alert Service Bulletin 747-53A2509, dated June 9, 2005.

Unsafe Condition

(d) This AD results from several reports indicating that fatigue cracking was found in upper deck floor beams made from 7050 aluminum alloy. We are issuing this AD to find and fix cracking in the upper deck floor beam, which could extend and sever the floor beam. A severed floor beam could result in loss of controllability and rapid decompression 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.

Conductivity Test

(f) Before an airplane has accumulated 15,000 total flight cycles, do a conductivity test of the upper deck floor beam at station 400 to identify the floor beam material, in accordance with Part II of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2509, dated June 9, 2005. If the upper deck floor beam is not made from 7050 aluminum alloy, no further action is required by this AD. If the upper deck floor beam is made from 7050 aluminum alloy, do the actions specified in paragraphs (f)(1), (f)(2), and (f)(3) of this AD.

Inspections and Corrective Actions, if Applicable

(1) Before an airplane has accumulated 15,000 total flight cycles, do a detailed inspection of the upper deck floor beam at station 400 for cracking, and do a high frequency eddy current (HFEC) inspection of certain fastener holes at the floor beam upper chord for cracking, in accordance with Part III of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2509, dated June 9, 2005. If any cracking is found during the HFEC inspection of certain fasteners holes, before further flight, repair

the cracking in accordance with Figure 3 of the service bulletin. If any cracking is found during the detailed inspection of the upper deck floor beam, and the service bulletin specifies to contact Boeing for appropriate action: Before further flight, repair the cracking using a method approved in accordance with paragraph (g) of this AD.

Reporting Requirement

(2) Submit a report of the findings (both positive and negative) of the inspections required by paragraph (f)(1) of this AD to Boeing Commercial Airplanes; Attention: Manager, Airline Support; P.O. Box 3707 MC 04-ER; Seattle, Washington 98124-2207; fax (425) 266-5562; at the applicable time specified in paragraph (f)(2)(i) or (f)(2)(ii) of this AD. The report must include the inspection results, a description of any discrepancies found, the airplane serial number, and the number of landings and flight hours on the airplane. Under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*), the Office of Management and Budget (OMB) has approved the information collection requirements contained in this AD and has assigned OMB Control Number 2120-0056.

(i) If the inspections were done after the effective date of this AD: Submit the report within 30 days after the inspection.

(ii) If the inspections were done prior to the effective date of this AD: Submit the report within 30 days after the effective date of this AD.

Preventative Modification

(3) Before an airplane has accumulated 20,000 total flight cycles, do a preventative modification using a method approved in accordance with paragraph (g) of this AD.

Alternative Methods of Compliance (AMOCs)

(g)(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) 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.

Issued in Renton, Washington, on August 29, 2005.

Kalene C. Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.
[FR Doc. 05-17608 Filed 9-2-05; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-22289; Directorate Identifier 2005-NM-101-AD]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747-100, 747-100B, 747-200B, 747-200C, 747-200F, 747-400F, 747SR, and 747SP Series Airplanes

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

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Boeing Model 747-100, 747-100B, 747-200B, 747-200C, 747-200F, 747-400F, 747SR, and 747SP series airplanes, without a stretched upper deck or stretched upper deck modification. This proposed AD would require detailed and high-frequency eddy current inspections for cracks at the outboard ends of each affected tension tie and of the surrounding structure, and related investigative and corrective actions if necessary. This proposed AD results from a report of a crack in the tension tie at the body station 820 frame connection, and cracks found on the Boeing 747SR fatigue-test airplane in both the tension ties and frames at the tension tie to frame connections at body stations 800, 820, and 840. We are proposing this AD to find and fix cracks in the tension ties, which could lead to cracks in the skin and body frame and result in rapid in-flight depressurization of the airplane. **DATES:** We must receive comments on this proposed AD by October 21, 2005. **ADDRESSES:** Use one of the following addresses to submit comments on this proposed AD.

- DOT Docket Web site: Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically.

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

Comments Invited

We invite you to submit any relevant written data, views, or arguments regarding this proposed AD. Include the docket number "FAA-2005-22289; Directorate Identifier 2005-NM-101-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the proposed AD. We will consider all comments received by the closing date and may amend the proposed AD in light of those comments.

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Discussion

We have received a report indicating that, during routing maintenance on a 747-200F series airplane, one operator found a crack in the tension tie at the body station (STA) 820 frame