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[Page 76839-76841]
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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001-NM-179-AD; Amendment 39-13911; AD 2004-25-23]

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 all Boeing Model 747 series airplanes, that requires repetitive inspections for cracking of the top and side panel webs and panel stiffeners of the nose wheel well (NWW), and corrective actions if necessary. This action is necessary to detect and correct fatigue cracks in the top and side panel webs and stiffeners of the NWW, which could compromise the structural integrity of the NWW and could lead to the rapid depressurization of the airplane. This action is intended to address the identified unsafe condition.

DATES: Effective January 27, 2005.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of January 27, 2005.

ADDRESSES: The service information referenced in this AD may be obtained from Boeing Commercial Airplanes, 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 National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*.

FOR FURTHER INFORMATION CONTACT: Nick Kusz, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6432; 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 all

Boeing Model 747 series airplanes was published in the Federal Register on May 7, 2004 (69 FR 25519). That notice of proposed rulemaking (NPRM) proposed to require repetitive inspections for cracking of the top and side panel webs and panel stiffeners of the nose wheel well (NWW), and corrective actions if necessary.

Explanation of New Service Information

Since the issuance of the NPRM, Boeing has issued and we have reviewed Revision 2 of Boeing Alert Service Bulletin 747-53A2465, dated November 11, 2004 (the NPRM referred to Revision 1 of the service bulletin as the appropriate source of service information for accomplishing the proposed actions). Revision 2 of the service bulletin
describes procedures for performing repetitive external detailed inspections for cracking of the top and side panel webs of the NWW (specified as Area 1 and Area 2 in the service bulletin), as applicable; performing repetitive internal detailed and surface high frequency eddy current (HFEC) inspections for cracking of the top and side panel stiffeners of the NWW (specified as Area 3 in the service bulletin); replacing cracked stiffeners with new stiffeners; and repairing any cracked panel web.

We have revised the final rule by adding new paragraph (a)(2) as an option to accomplishing the repetitive inspections required by paragraph (a)(1) (specified as paragraph (a) of the NPRM). The option allows operators to do the repetitive inspections specified in Revision 2 of the service bulletin. The compliance time intervals for the new, optional repetitive inspections are: (1) 1,000 flight cycles for the external detailed inspection, and (2) 6,000 flight cycles for the internal detailed and suface HFEC inspections, which is less stringent than the 1,000 flight-cycle interval for the repetitive inspections required by paragraph (a)(1) of this final rule.

We have also added Revision 2 of the service bulletin to paragraph (b) of the final rule to allow repairs to be done according to either Revision 1 or Revision 2 of the service bulletin, as applicable.

Accomplishing the actions specified in either Revision 1 or Revision 2 of the service bulletin at the times specified in the final rule is intended to adequately address the identified unsafe condition.

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 Revise or Cancel the NPRM

Two commenters request that the NPRM be revised or cancelled due to the upcoming release of Revision 2 of Boeing Alert Service Bulletin 747-53A2465. One commenter, the airplane manufacturer, notes that Revision 2 of the service bulletin will have different inspections and compliance times than what is specified in paragraph (a) of the NPRM. The commenter states that the procedures for ultrasonic inspection will be removed from the service bulletin and that the repetitive interval recommended for the detailed inspection of the NWW sidewall and top webs will be changed. The commenter notes that the detailed inspection will be performed every 1,000 flight cycles, starting at 16,000 total flight cycles, and then, after accumulating 25,000 flight cycles, the detailed inspection will be performed every 100 flight cycles for the web common to the fore-aft stiffeners at water lines (WL) 150, 160 and 170 (left and right sides). The commenter suggests that paragraph (a) of the NPRM be revised to reflect these changes.

The other commenter suggests that the NPRM be revised or cancelled because of the differences between the NPRM and Revision 2 of the service bulletin. The commenter also asks that a new proposal be issued that cites the changes specified in Revision 2 of the service bulletin.

We do not agree with the commenters' requests to revise or cancel the NPRM. Revision 2 of the service bulletin does not contain a 25,000 flight-cycle inspection threshold to reduce the repetitive inspection interval. In addition, as stated earlier, we have revised the final rule by adding the actions specified in Revision 2 of the service bulletin as an option to doing the actions specified in Revision 1 of the service bulletin.

Request To Extend Inspection Threshold

One commenter requests that the second inspection threshold be extended from 25,000 flight cycles to 28,000 flight cycles for Model 747-400D series airplanes. The commenter states that the fatigue cracks are caused by cabin pressurization and Model 747-400D series airplanes operate with lower cabin differential pressure.

We do not agree with the commenter. We infer that the commenter is referring to Revision 2 of Boeing Alert Service Bulletin 747-53A2465, but as stated earlier, Revision 2 does not contain a second inspection threshold. No change is made to the final rule in this regard.

Conclusion

After careful review of the available data, including the comments noted above, we have determined that air safety and the public interest require adopting the AD with the changes previously described. These changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Cost Impact

There are approximately 1,127 airplanes of the affected design in the worldwide fleet. We estimate that 255 airplanes of U.S. registry will be affected by this AD.

It will take approximately 42 work hours per airplane to accomplish the required inspections specified in Boeing Service Bulletin 747-53A2465, Revision 1, dated October 16, 2003, and that the average labor rate is $65 per work hour. Based on these figures, the cost impact of the required inspections on U.S. operators is estimated to be $2,730 per airplane, per inspection cycle.

In lieu of the inspections specified in Revision 1 of Boeing Service Bulletin 747-53A2465, it will take approximately 87 or 97 work hours per airplane (depending on the airplane configuration) to accomplish the required inspections specified in Boeing Alert Service Bulletin 747-53A2465, Revision 2, dated November 11, 2004, and that the average labor rate is $65 per work hour. Based on these figures, the cost impact of the required inspections on U.S. operators is estimated to be $5,655 or $6,305 per airplane, per inspection cycle (depending on the airplane configuration).

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.

Authority for This Rulemaking

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States Code. 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.

This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, the FAA is charged 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 AD.

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"

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).

2004-25-23 Boeing: Amendment 39-13911. Docket 2001-NM-179-AD.

Applicability: All Model 747 series airplanes, certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To detect and correct fatigue cracks in the top and side panel webs and stiffeners of the nose wheel well (NWW), which could compromise the structural integrity of the NWW and could lead to the rapid depressurization of the airplane, accomplish the following:

Initial and Repetitive Inspections

(a) Prior to the accumulation of 16,000 total flight cycles, or within 1,000 flight cycles after the effective date of this AD, whichever is later, do the inspections specified in either paragraph (a)(1) or (a)(2) of this AD.

(1) Do the inspections specified in paragraphs (a)(1)(i) and (a)(1)(ii) of this AD in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2465, Revision 1, dated October 16, 2003. Repeat the inspections thereafter at intervals not to exceed 1,000 flight cycles.

(i) Do detailed and ultrasonic inspections of the top and side panel webs of the NWW for cracks.

(ii) Do detailed and surface high frequency eddy current (HFEC) inspections of the top and side panel stiffeners of the NWW for cracks.

(2) Do the inspections specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this AD in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2465, Revision 2, dated November 11, 2004. Repeat the inspections thereafter at the intervals specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this AD.

(i) Do external detailed inspections of the top and side panel webs of the NWW (specified as Area 1 and Area 2 in the service bulletin), as applicable, for cracks. Repeat the inspections thereafter at intervals not to exceed 1,000 flight cycles.

(ii) Do internal detailed and surface HFEC inspections of the top and side panel stiffeners of the NWW (specified as Area 3 in the service bulletin) for cracks. Repeat the inspections thereafter at intervals not to exceed 6,000 flight cycles.

Note 1: 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 mirrors, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required."

Corrective Actions

(b) If any crack is found during any inspection required by paragraph (a) of this AD: Prior to further flight, do the applicable corrective actions specified in paragraphs (b)(1) and (b)(2) of this AD, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2465, Revision 1, dated October 16, 2003; or Boeing Alert Service Bulletin 747-53A2465, Revision 2, dated November 11, 2004; as applicable. Thereafter, repeat the inspections required by paragraph (a) of this AD at the time specified in paragraph (a)(1) or (a)(2) of this AD, as applicable.

(1) Repair web cracks.

(2) Replace cracked stiffeners with new stiffeners.

Inspections Accomplished per Previous Issue of Service Bulletin

(c) Inspections accomplished before the effective date of this AD in accordance with Boeing Alert Service Bulletin 747-53A2465, dated April 5, 2001, are considered acceptable for compliance with the corresponding inspections specified in paragraph (a) of this AD.

Alternative Methods of Compliance

(d) In accordance with 14 CFR 39.19, the Manager, Seattle Aircraft Certification Office, FAA, is authorized to approve alternative methods of compliance for this AD.

Incorporation by Reference

(e) Unless otherwise specified in this AD, the actions shall be done in accordance with Boeing Service Bulletin 747-53A2465, Revision 1, dated October 16, 2003; or Boeing Alert Service Bulletin 747-53A2465, Revision 2, dated November 11, 2004. 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 Airplanes, 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 National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

Effective Date

(f) This amendment becomes effective on January 27, 2005.

Issued in Renton, Washington, on December 7, 2004.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

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