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[Page 26679-26682]
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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-22624; Directorate Identifier 2004-NM-81-AD; Amendment 39-14586; AD 2006-10-02]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747 Airplanes

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

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Boeing Model 747 airplanes. This AD requires the following actions for the drive mechanism of the horizontal stabilizer: Repetitive detailed inspections for discrepancies and loose ball bearings; repetitive lubrication of the ballnut and ballscrew; repetitive measurements of the freeplay between the ballnut and the ballscrew; and corrective action if necessary. This AD results from a report of extensive corrosion of a ballscrew in the drive mechanism of the horizontal stabilizer on a similar airplane model. We are issuing this AD to prevent an undetected failure of the primary load path for the ballscrew in the horizontal stabilizer and subsequent wear and failure of the secondary load path, which could lead to loss of control of the horizontal stabilizer and consequent loss of control of the airplane.

DATES: This AD becomes effective June 12, 2006.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of June 12, 2006.

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: Kelly McGuckin, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Airplane Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6490; 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 would apply to all Boeing Model 747 airplanes. That NPRM was published in the Federal Register on October 7, 2005 (70 FR 58623). That NPRM proposed to require the following actions for the drive mechanism of the horizontal stabilizer: Repetitive detailed inspections for discrepancies and loose ball bearings; repetitive lubrication of the ballnut and ballscrew; repetitive measurements of the freeplay between the ballnut and the ballscrew; 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 received.

Request Credit for Previously Accomplished Inspections

Northwest Airlines (NWA) asks that, in order to avoid accomplishing the initial inspections at the time specified in the NPRM, operators who have already done the initial inspections per the referenced service bulletin be allowed to continue with the repetitive inspections using established maintenance intervals based on the repetitive interval specified in Table 1 of the referenced service bulletin. NWA states that Table 1 of the referenced service bulletin, which provides the compliance intervals, indicates that the compliance time for the initial ballnut to ballscrew freeplay check for airplanes not in the low utilization maintenance program specifies "15,000 flight hours after the last check" and the repetitive interval specifies "18,000 flight hours recommended, but not more than 21,000 flight hours." NWA has been accomplishing the lubrication, detailed visual inspections, and freeplay checks at the intervals specified in Table 1 of the service bulletin. NWA notes that paragraph (e) of the NPRM applies to operators that have been accomplishing the inspections in the referenced service bulletin, and asks that we ensure that the intent of paragraph (e) is maintained in any forthcoming airworthiness directive.

We agree with NWA that operators who have already done the initial inspections per the referenced service bulletin are allowed to continue with the repetitive inspections using established maintenance intervals based on the repetitive interval specified in Table 1 of the referenced service bulletin. Paragraph (e) of the NPRM specifies that you are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done. We have added credit for accomplishing the initial inspections per the referenced service bulletin to paragraph (g) of this AD.

Lufthansa German Airlines (Lufthansa) has performed the initial ballscrew-to-ballnut freeplay inspection per the original issue of the referenced service bulletin, and has scheduled the next inspection within the 18,000 flight hour interval specified therein.

We infer that Lufthansa is asking to be allowed to continue accomplishing their repetitive inspections at the interval of 18,000 flight hours, since they have already done the initial inspection.

As stated above, we agree that operators who have already done the initial inspections per the referenced service bulletin are allowed to continue with the repetitive inspections using established maintenance intervals based on the repetitive interval specified in Table 1 of the referenced service bulletin. No change to the AD is necessary in this regard.

Request To Extend Compliance Time for Initial Inspection

Lufthansa suggests that, for airplanes on which the initial and repetitive inspections have been done, the compliance time be changed to 18,000 flight hours for both the initial and repetitive inspections, as specified in the original issue of the referenced service bulletin. Lufthansa states that the proposed compliance time of 15,000 flight hours for the initial inspection, for all airplanes except those with an FAA-approved low utilization program, is not technically justified and is a burden for maintenance planning. Lufthansa adds that, in its opinion, the compliance time specified for the initial inspection is only justified if the inspection has never been done.

We do not agree to extend the compliance time for the initial inspection to 18,000 flight hours; initial inspections accomplished per the original issue of the referenced service bulletin meet the intent of this AD. In developing an appropriate compliance time, we considered the safety implications, the manufacturer's recommendation, and normal maintenance schedules for timely accomplishment of the initial inspection. We have determined that the compliance time, as proposed, represents the maximum interval of time allowable for the affected airplanes to continue to safely operate before the initial inspection is done. We have made no change to the AD in this regard.

Lufthansa also suggests that, for airplanes with more than 15,000 total flight hours, the compliance time for the detailed inspection specified in paragraph (f) of the NPRM be changed to within 18 months from the issue date of the referenced service bulletin. Lufthansa adds that another option would be to state that accomplishment of the detailed inspection task specified in the original issue of the referenced service bulletin meets the initial inspection requirements. The commenter states that the proposed compliance time is too short for airplanes with more than 15,000 total flight hours to perform the detailed inspection.

We do not agree with Lufthansa. As discussed previously, initial inspections accomplished per the original issue of the referenced service bulletin meet the intent of this AD. As specified in paragraph (f) of this AD, the compliance time is relative to the effective date of this AD.

Requests To Change Paragraph (h)

UPS, Lufthansa, and NWA ask that paragraph (h) of the NPRM be changed to clarify that the overhaul instructions for the horizontal stabilizer actuator are not contained in the referenced service bulletin.

UPS reiterates the language in paragraph (h) and contends that no overhaul instructions are provided in the referenced service bulletin. UPS states that the service bulletin specifies that if replacement is required, and a new or overhauled unit is not installed, then a detailed inspection and freeplay check are required. UPS adds that when a unit is overhauled per the component maintenance manual (CMM), it provides sufficient inspection requirements to meet the intent of the AD. Therefore, UPS recommends paragraph (h) be changed as follows: "As of the effective date of this AD, no person may install on any airplane a horizontal stabilizer trim actuator unless it is new or has been overhauled in accordance with the CMM; or has been inspected, lubricated, and measured in accordance with paragraph (f) of this AD." UPS notes that the referenced service bulletin does not provide any direction over and above the requirements of the CMM.

Lufthansa also reiterates the language in paragraph (h) and states that the referenced service bulletin does not provide overhaul procedures. Lufthansa adds that the Boeing Overhaul Manual (OHM 27-41-31) does not provide overhaul procedures either, but contains Inspection/Check and

Repair sections. The overhaul limits are contained in OHM 27-40-05 (Lear Siegler) and CMM 27-31-01 (Beaver). Lufthansa states that it is inappropriate for the NPRM to refer to an overhaul procedure in a document which was not intended to include it. Lufthansa recommends that paragraph (h) be changed to specify "the appropriate component manufacturer's overhaul procedures" instead of the referenced service bulletin.

NWA states that it does not overhaul any components in accordance with service bulletins. NWA recommends that the statement "or has been overhauled in accordance with Boeing Alert Service Bulletin 747-27A2396, Revision 1" be changed to "or has been overhauled in accordance with Boeing Alert Service Bulletin 747-27A2396, Revision 1 or subsequent."

We partially agree with UPS, Lufthansa, and NWA. We agree to change paragraph (h) of this AD as follows: "As of the effective date of this AD, no person may install on any airplane a horizontal stabilizer trim actuator unless it is new or overhauled in accordance with Boeing Alert Service Bulletin 747-27A2396, Revision 1, dated August 4, 2005 (which refers to the applicable overhaul manual); or has been inspected, lubricated, and measured in accordance with paragraph (f) of this AD." We find that there are no overhaul procedures in the referenced service bulletin; therefore, we have removed that reference accordingly.

Request To Change Relevant Service Information Section

Boeing and Lufthansa ask that we clarify the "Relevant Service Information" section of the NPRM.

Boeing asks that the first sentence in the last paragraph of that section be changed to read, "For airplanes on which an FAA-approved low utilization maintenance program is in effect." That sentence, as written in the NPRM, specifies "For all airplanes except those on which an FAA-approved low utilization maintenance program is in effect." Boeing suggests that the words "all" and "except those" which were included in that sentence, be deleted. Boeing states that this paragraph addresses compliance requirements for "low utilization" airplanes, but as written in the NPRM includes the words for normal utilization airplanes.

Lufthansa also suggests that there is a typographical error within that section. Lufthansa states that the fourth and fifth paragraphs start with the same sentence, and asks if the first sentence in the fifth paragraph should read "For airplanes with an FAA-approved low maintenance program."

We agree with Boeing and Lufthansa that clarifying the first sentence in the last paragraph of the "Relevant Service Information" section would be helpful, because the first sentence in the last paragraph, which describes "low utilization" airplanes, is incorrect. That sentence should specify "For airplanes on which an FAA-approved low utilization maintenance program is in effect:" However, since the "Relevant Service Information" section of the NPRM does not reappear in the final rule, no change to the AD is necessary in this regard.

Lufthansa also asks that the compliance time specified in the "Relevant Service Information" section, the "18 months after the original issue date of the service bulletin," specify which revision of the service bulletin.

We do not agree with Lufthansa. The first sentence under the "Relevant Service Information" section specifies that we have reviewed Boeing Alert Service Bulletin 747-27A2396, Revision 1, dated August 4, 2005. The second sentence defines the compliance times in that service bulletin. That section is not restated in this AD and no change to the AD is necessary in this regard.

Request for Clarification of Lubrication Action

Lufthansa suggests that we clarify that the lubrication action specified in the NPRM is not related to oil servicing of the stabilizer actuator drive gearbox.

We disagree that clarification is necessary. The NPRM and referenced service bulletin contain clear and specific instructions for the lubrication of the horizontal stabilizer ballscrew and ballnut. No change to the AD is necessary in this regard.

Clarification of Alternative Method of Compliance (AMOC) Paragraph

We have revised this action to clarify the appropriate procedure for notifying the principal inspector before using any approved AMOC on any airplane to which the AMOC applies.

Conclusion

We have carefully reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. These changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

This AD affects about 1,082 Model 747 series airplanes worldwide. The following table provides the estimated costs for U.S. operators to comply with this AD, per cycle.

ESTIMATED COSTS						
Repetitive actions	Work hours	Average labor rate per hour	Parts	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
Detailed inspection	1	\$65	None	\$65	236	\$15,340
Lubrication	1	65	None	65	236	15,340
Freeplay measurement	3	65	None	195	236	46,020

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 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/

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).

2006-10-02 Boeing: Amendment 39-14586; Docket No. FAA-2005-22624; Directorate Identifier 2004-NM-81-AD.

Effective Date

- (a) This AD becomes effective June 12, 2006.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to all Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes; certificated in any category.

Unsafe Condition

(d) This AD results from a report of extensive corrosion of a ballscrew in the drive mechanism of the horizontal stabilizer on a similar airplane model. We are issuing this AD to prevent an undetected failure of the primary load path for the ballscrew in the horizontal stabilizer and subsequent wear and failure of the secondary load path, which could lead to loss of control of the horizontal stabilizer 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.

Repetitive Detailed Inspection/Lubrication/Freeplay Measurement and Corrective Action

(f) Do all the applicable actions, including any applicable corrective action, specified in Work Packages 1, 2, and 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-27A2396, Revision 1, dated August 4, 2005. Do the actions at the applicable compliance time specified in Table 1 of paragraph 1.E. "Compliance" of the service bulletin; except, where the service bulletin specifies a compliance time relative to the original issue date of the service bulletin, this AD requires compliance relative to the effective date of this AD. Where the service bulletin specifies a compliance time relative to the delivery date of the airplane, this AD requires compliance relative to

the date of issuance of the original standard airworthiness certificate or the date of issuance of the original export certificate of airworthiness. Do any applicable corrective action before further flight. Repeat the actions at the applicable repeat interval specified in Table 1 of paragraph 1.E "Compliance" of the service bulletin.

Note 1: Boeing Alert Service Bulletin 747-27A2396, Revision 1, dated August 4, 2005, refers to the airplane maintenance manuals (AMMs) in Table 1 of this AD as additional sources of service information for accomplishing the detailed visual inspections, lubrications, freeplay measurements, and corrective actions.

TABLE 1.—ADDITIONAL SOURCES OF SERVICE INFORMATION

Boeing AMM	Subject
747-100/200/300 AMM	12-21-19
747-100/200/300 AMM	27-41-06
747-400 AMM	12-21-19
747-400 AMM	27-41-06

Previously Accomplished Actions

(g) Initial inspections accomplished before the effective date of this AD in accordance with Boeing Alert Service Bulletin 747-27A2396, dated September 4, 2003, are considered acceptable for compliance with the corresponding action specified in this AD. For airplanes on which the drive mechanism of the horizontal stabilizer was replaced before the effective date of this AD with a drive mechanism that was not new or overhauled, and the detailed and freeplay inspections were not accomplished in accordance with Boeing Alert Service Bulletin 747-27A2396, dated September 4, 2003: Within 4,000 flight hours or 24 months after the effective date of this AD, whichever is first, accomplish the inspections, and perform any applicable corrective action before further flight, in accordance with Work Package 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-27A2396, Revision 1, dated August 4, 2005.

Parts Installation

(h) As of the effective date of this AD, no person may install on any airplane a horizontal stabilizer trim actuator unless it is new or has been overhauled in accordance with Boeing Alert Service Bulletin 747-27A2396, Revision 1, dated August 4, 2005 (which refers to the applicable overhaul manual); or has been inspected, lubricated, and measured in accordance with paragraph (f) of this AD.

Alternative Methods of Compliance (AMOCs)

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

(2) Before using any AMOC approved in accordance with 14 CFR 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

Material Incorporated by Reference

(j) You must use Boeing Alert Service Bulletin 747-27A2396, Revision 1, dated August 4, 2005, to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director

of the Federal Register approved the incorporation by reference of this document in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. 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.

Issued in Renton, Washington, on April 28, 2006.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 06-4230 Filed 5-5-06; 8:45 am]

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