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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-0933; Directorate Identifier 2007-NM-261-AD; Amendment 39-15956; AD 2009-14-06]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 777 Airplanes

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

ACTION: Final rule.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD), which applies to all Boeing Model 777 airplanes. That AD currently requires, for the drive mechanism of the horizontal stabilizer, repetitive detailed inspections for discrepancies, repetitive lubrication of the ballnut and ballscrew, repetitive measurements of the freeplay between the ballnut and the ballscrew, and corrective action if necessary. This new AD revises the compliance times of the existing AD. This AD results from a report of extensive corrosion of a ballscrew in the drive mechanism of the horizontal stabilizer on a Boeing Model 757 airplane, which is similar in design to the ballscrew on Model 777 airplanes. We are issuing this AD to prevent an undetected failure of the primary load path for the ballscrew in the drive mechanism of 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 August 12, 2009.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of August 12, 2009.

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1, fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal

holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (telephone 800-647-5527) is the Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Kelly McGuckin, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6490; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that supersedes AD 2007-17-12, amendment 39-15170 (72 FR 49158, August 28, 2007). The existing AD applies to all Boeing Model 777 airplanes. That NPRM was published in the Federal Register on August 29, 2008 (73 FR 50896). That NPRM proposed to retain the actions specified in the existing AD (i.e., for the drive mechanism of the horizontal stabilizer, repetitive detailed inspections for discrepancies, repetitive lubrication of the ballnut and ballscrew, repetitive measurements of the freeplay between the ballnut and the ballscrew, and corrective action if necessary) but with new initial inspection compliance times.

New Service Information

Since issuance of the NPRM, we have reviewed Boeing Service Bulletin 777-27A0059, Revision 2, dated January 15, 2009. This revision of the service bulletin is essentially the same as Revision 1 of the service bulletin. (We referred to Boeing Alert Service Bulletin 777-27A0059, Revision 1, August 18, 2005, as the appropriate source of service information for doing the actions proposed in the NPRM.) Revision 2 of the service bulletin specifies similar compliance times as those proposed in the NPRM, adds clarifying language regarding tooling, refers to the superseded AD, and defines the phrase "known serviceable condition" for a horizontal stabilizer trim actuator (HSTA), including defining the term "overhaul."

Explanation of Removed Service Bulletin Reference Paragraph and Note 1

We have removed the "Service Bulletin Reference" paragraph (i.e., paragraph (f) of the NPRM) and Note 1 from this AD and included references to Boeing Service Bulletin 777-27A0059, Revision 2, dated January 15, 2009, in paragraphs (g), (h), (i), and (l) of this AD. We have added Boeing Alert Service Bulletin 777-27A0059, Revision 1, dated August 18, 2005, to paragraph (j) of this AD to give credit for actions done before the effective date of this AD in accordance with Revision 1 of the service bulletin.

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.

Requests for Clarification of "Overhaul" and "Serviceable"

The Air Transport Association, on behalf of one of its members, American Airlines, requests that we clarify the meaning of "overhaul" and "serviceable" in both the NPRM and Boeing Alert Service Bulletin 777-27A0059, Revision 1, August 18, 2005.

American Airlines states that the NPRM specifies to replace an HSTA with a new or "serviceable" unit in accordance with Boeing Alert Service Bulletin 777-27A0059, Revision 1, dated August 18, 2005, and that the NPRM also states that no person shall install, on any airplane, an HSTA that is not new or "overhauled," unless a detailed inspection, freeplay measurement, and lubrication of that actuator have been performed in accordance with paragraphs (h), (i), and (j) of the proposed AD (i.e., paragraphs (g), (h), and (i) of this final rule). In addition, American Airlines states that the component maintenance manual (CMM) for the subject HSTA does not have a defined "overhaul" work scope. American Airlines believes that the NPRM and the service bulletin should provide the specific procedures and/or CMM requirements for what constitutes an "overhauled" and/or "serviceable" HSTA.

We agree with the commenters. Note 6 of paragraph 3.A. of Boeing Service Bulletin 777-27A0059, Revision 2, dated January 15, 2009, now defines the phrase "known serviceable condition" for an HSTA, including defining the term "overhaul." We have added the phrase "known serviceable condition" to paragraphs (f)(2) through (f)(4), (g), and (h) of this AD in place of the words "serviceable HSTA" and "new or overhauled" in the NPRM to be in line with the usage in that service bulletin. We have also changed paragraph (l) of this AD to refer to the definition of "known serviceable condition" in that service bulletin. In addition, new Note 1 referring to "known serviceable condition" has been added to the final rule.

Conclusion

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

Costs of Compliance

There are about 596 airplanes of the affected design in the worldwide fleet. This AD affects about 203 airplanes of U.S. registry. The new requirements of this AD add no additional economic burden. The current costs of the existing AD are repeated for the convenience of affected operators, as follows.

The maintenance records check takes about 1 work hour per airplane, at an average labor rate of \$80 per work hour. Based on these figures, the estimated cost of the maintenance records check for U.S. operators is \$16,240, or \$80 per airplane.

The detailed inspection takes about 1 work hour per airplane, at an average labor rate of \$80 per work hour. Based on these figures, the estimated cost of the inspection for U.S. operators is \$16,240, or \$80 per airplane, per inspection cycle.

The freeplay measurement takes about 5 work hours per airplane, at an average labor rate of \$80 per work hour. Based on these figures, the estimated cost of the freeplay measurement for U.S. operators is \$81,200, or \$400 per airplane, per measurement cycle.

The required lubrication takes about 1 work hour per airplane, at an average labor rate of \$80 per work hour. Based on these figures, the estimated cost of the lubrication for U.S. operators is \$16,240, or \$80 per airplane, per lubrication 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 39-15170 (72 FR 49158, August 28, 2007) and by adding the following new airworthiness directive (AD):



2009-14-06 Boeing: Amendment 39-15956. Docket No. FAA-2008-0933; Directorate Identifier 2007-NM-261-AD.

Effective Date

- (a) This AD becomes effective August 12, 2009.

Affected ADs

- (b) This AD supersedes AD 2007-17-12.

Applicability

- (c) This AD applies to all Boeing Model 777 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 Boeing Model 757 airplane, which is similar in design to the ballscrew on Model 777 airplanes. We are issuing this AD to prevent an undetected failure of the primary load path for the ballscrew in the drive mechanism of 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.

Restatement of Requirements of AD 2007-17-12 With Revised Compliance Times and Updated Service Information

Maintenance Records Check

(f) For airplanes that have received an original airworthiness certificate or original export certificate of airworthiness prior to the effective date of this AD: Within 180 days or 3,500 flight hours after the effective date of this AD, whichever occurs first, perform a maintenance records check or inspect to determine the status of the horizontal stabilizer trim actuator (HSTA) as specified in paragraph (f)(1), (f)(2), (f)(3), or (f)(4) of this AD, as applicable:

- (1) The original HSTA delivered with the airplane has not been removed and is still installed on the airplane;
- (2) The original HSTA has been replaced with an HSTA in a known serviceable condition;
- (3) The original HSTA has been replaced with an HSTA that is not in a known serviceable condition, and which has not received a detailed inspection and freeplay measurement as described in paragraphs (g) and (h) of this AD since that replacement; or

(4) The original HSTA has been replaced with an HSTA that is not in a known serviceable condition, and which has received a detailed inspection and freeplay measurement as described in paragraphs (g) and (h) of this AD since that replacement.

Note 1: The phrase "known serviceable condition" is defined in section 3.A., Note 6, of Boeing Service Bulletin 777-27A0059, Revision 2, dated January 15, 2009.

Detailed Inspection

(g) Within the compliance times specified in paragraphs (g)(1), (g)(2), (g)(3), and (g)(4) of this AD, as applicable: Perform a detailed inspection for discrepancies of the horizontal stabilizer trim actuator ballnut and ballscrew, in accordance with Part 1 of the Accomplishment Instructions of Boeing Service Bulletin 777-27A0059, Revision 2, dated January 15, 2009. Repeat the detailed inspection thereafter at intervals not to exceed 3,500 flight hours or 12 months, whichever occurs first. If any discrepancy is found during any inspection required by this AD, before further flight, replace the actuator with an actuator in a known serviceable condition, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-27A0059, Revision 2, dated January 15, 2009.

(1) For airplanes identified in paragraph (f)(1) of this AD: Before the accumulation of 15,000 total flight hours, or within 18 months after the effective date of this AD, whichever occurs later.

(2) For airplanes identified in paragraph (f)(2) or (f)(4) of this AD: Before the accumulation of 15,000 flight hours since the replacement of the HSTA, or within 18 months after the effective date of this AD, whichever occurs later.

(3) For airplanes identified in paragraph (f)(3) of this AD: Before the accumulation of 3,500 flight hours since the replacement of the HSTA, or within 12 months after the effective date of this AD, whichever occurs later.

(4) For airplanes that have received an original airworthiness certificate or original export certificate of airworthiness on or after the effective date of this AD: Before the accumulation of 15,000 total flight hours, or within 18 months after the issuance of the original airworthiness certificate or original export certificate of airworthiness, whichever occurs later.

Freeplay Measurement (Inspection)

(h) Within the compliance times specified in paragraphs (h)(1), (h)(2), (h)(3), and (h)(4) of this AD, as applicable: Perform a freeplay measurement of the ballnut and ballscrew in accordance with Part 2 of the Accomplishment Instructions of Boeing Service Bulletin 777-27A0059, Revision 2, dated January 15, 2009. Repeat the freeplay measurement thereafter at intervals not to exceed 18,000 flight hours or 60 months, whichever occurs first. If the freeplay is found to exceed the limits specified in the service bulletin during any measurement required by this AD, before further flight, replace the actuator with an actuator in a known serviceable condition, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-27A0059, Revision 2, dated January 15, 2009.

(1) For airplanes identified in paragraph (f)(1) of this AD: Before the accumulation of 15,000 total flight hours, or within 18 months after the effective date of this AD, whichever occurs later.

(2) For airplanes identified in paragraph (f)(2) or (f)(4) of this AD: Before the accumulation of 15,000 flight hours since the replacement of the HSTA, or within 18 months after the effective date of this AD, whichever occurs later.

(3) For airplanes identified in paragraph (f)(3) of this AD: Before the accumulation of 3,500 flight hours since the replacement of the HSTA, or within 12 months after the effective date of this AD, whichever occurs later.

(4) For airplanes that have received an original airworthiness certificate or original export certificate of airworthiness on or after the effective date of this AD: Before the accumulation of

15,000 total flight hours, or within 18 months after the issuance of the original airworthiness certificate or original export certificate of airworthiness, whichever occurs later.

Lubrication

(i) Within the compliance times specified in paragraphs (i)(1), (i)(2), (i)(3), and (i)(4) of this AD, as applicable: Lubricate the ballnut and ballscrew in accordance with Part 3 of the Accomplishment Instructions of Boeing Service Bulletin 777-27A0059, Revision 2, dated January 15, 2009. Repeat the lubrication thereafter at intervals not to exceed 2,000 flight hours or 12 months, whichever occurs first.

(1) For airplanes identified in paragraph (f)(1) of this AD: Before the accumulation of 15,000 total flight hours, or within 18 months after the effective date of this AD, whichever occurs later.

(2) For airplanes identified in paragraph (f)(2) or (f)(4) of this AD: Before the accumulation of 15,000 flight hours since the replacement of the HSTA, or within 18 months after the effective date of this AD, whichever occurs later.

(3) For airplanes identified in paragraph (f)(3) of this AD: Before the accumulation of 3,500 flight hours since the replacement of the HSTA, or within 12 months after the effective date of this AD, whichever occurs later.

(4) For airplanes that have received an original airworthiness certificate or original export certificate of airworthiness on or after the effective date of this AD: Before the accumulation of 15,000 total flight hours, or within 18 months after the issuance of the original airworthiness certificate or original export certificate of airworthiness, whichever occurs later.

Credit for Actions Accomplished According to Earlier Issues of the Service Bulletin

(j) Actions performed prior to the effective date of this AD, in accordance with Boeing Alert Service Bulletin 777-27A0059, dated September 18, 2003; or Boeing Alert Service Bulletin 777-27A0059, Revision 1, dated August 18, 2005; are considered acceptable for compliance with the corresponding actions specified in paragraphs (g), (h), and (i) of this AD.

Credit for Hard-Time Replacement of HSTA

(k) Any HSTA overhauled within the compliance times specified in paragraphs (g), (h), and (i) of this AD or before the effective date of this AD—as part of a "hard-time" replacement program that includes removal of the HSTA from the airplane and overhaul of the stabilizer ballscrew in accordance with original equipment manufacturer component maintenance manual instructions—meets the intent of one detailed inspection, one freeplay inspection, and one lubrication of the HSTA. Therefore, any such HSTA is considered acceptable for compliance with the initial accomplishment of the actions specified in paragraphs (g), (h), and (i) of this AD, and repetitions of those actions may be determined from the performance date of that overhaul.

Parts Installation

(l) As of the effective date of this AD, no person may install, on any airplane, a horizontal stabilizer trim actuator that is not in a "known serviceable condition" as defined in Note 6, section 3.A., of Boeing Alert Service Bulletin 777-27A0059, Revision 2, dated January 15, 2009; unless a detailed inspection, freeplay measurement, and lubrication of that actuator are performed in accordance with paragraphs (g), (h), and (i) of this AD, as applicable.

Alternative Methods of Compliance (AMOCs)

(m)(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, ATTN: Kelly McGuckin, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle ACO, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6490; fax (425) 917-6590; has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Material Incorporated by Reference

(n) You must use Boeing Service Bulletin 777-27A0059, Revision 2, dated January 15, 2009, to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of this service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1, fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221 or 425-227-1152.

(4) You may also review copies of the service information that is incorporated by reference 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.

Issued in Renton, WA, on June 24, 2009.

Ali Bahrami,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.