

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2006-25973; Directorate Identifier 2006-NM-178-AD; Amendment 39-15109; AD 2007-13-05]

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 adopting a new airworthiness directive (AD) for all Boeing Model 777 airplanes. This AD requires repetitive measurements of the freeplay of the right and left elevators, rudder, and rudder tab, and related investigative and corrective actions if necessary. This AD also requires repetitive lubrication of the elevator, rudder, and rudder tab components. This AD results from reports of freeplay-induced vibration of unbalanced control surfaces. Excessive freeplay of control surfaces can cause unacceptable airframe vibration during flight. The potential for vibration of the control surface should be avoided because the point of transition from vibration to divergent flutter is unknown. We are issuing this AD to prevent flutter, which can cause damage to the control surface structure and consequent loss of control of the airplane.

DATES: This AD becomes effective July 25, 2007.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of July 25, 2007.

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: Dennis Stremick, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6450; 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 777 airplanes. That NPRM was published in the Federal Register on October 3, 2006 (71 FR 58323). That NPRM proposed to require repetitive measurements of the freeplay of the right and left elevators, rudder, and rudder tab, and related investigative and corrective actions if necessary. That NPRM also proposed to require repetitive lubrication of the elevator, rudder, and rudder tab components.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

Support for the NPRM

Boeing and United Airlines support the contents of the NPRM.

Request To Accomplish Repetitive Actions at the Later of the Compliance Times

United Airlines requests that we revise the compliance times for the repetitive freeplay measurements and lubrication to specify doing those actions at the later of the proposed compliance times (i.e., whichever occurs later). Boeing Special Attention Service Bulletin 777-27-0062, dated July 18, 2006, recommends repeating the freeplay measurement at intervals of 12,000 flight hours or 36 months, whichever occurs first, and repeating the lubrication at intervals of 5,000 flight hours or 16 months, whichever occurs first. As justification, United Airlines states that the change would allow operators to accomplish the actions within the thresholds specified in the Boeing 777 Maintenance Planning Document (MPD).

We disagree with allowing operators to perform the repetitive actions at the later of the compliance times. Accomplishing the repetitive freeplay measurements and lubrication at the compliance times specified in the MPD has not prevented the unsafe condition from occurring in service on other Boeing airplane models that incorporate the same design features. In developing an appropriate compliance time for this action, we considered the urgency associated with the subject unsafe condition, the practical aspect of accomplishing the required actions within an interval of time that corresponds to the normal scheduled maintenance for most affected operators, and the recommendation of the manufacturer. However, according to the provisions of paragraph (j) of this AD, we may approve requests to adjust the compliance time if the request includes data that substantiate that the new compliance time would provide an acceptable level of safety. We have not changed this AD in this regard.

Request To Revise Compliance Times

British Airways and United Airlines request that we revise the compliance times for the repetitive freeplay measurements and lubrication to match the times in the Boeing 777 MPD. Both commenters state that the MPD requires the freeplay measurement at intervals of 18,000 flight hours and requires the lubrication at intervals of 6,000 flight hours or 560 days. As justification, British Airways states the following: (1) It has been performing these tasks in accordance with the Boeing 777 MPD with no adverse findings for its fleet, (2) it uses BMS 3-33 grease for the lubrication, which improves service life over MIL-PRF-23827C, and (3) Boeing has not reported any freeplay issues on Model 777 airplanes or provided justification for recommending different intervals in the service bulletin. British Airways also states that it considers the MPD intervals adequate and that mandating the intervals in Boeing Special Attention Service Bulletin 777-27-0062, dated July 18, 2006, would not significantly improve safety.

We disagree with revising the compliance times. Accomplishing the required freeplay measurements and lubrication at the compliance times specified in the MPD has not prevented the unsafe condition from occurring in service on other Boeing airplane models that incorporate the same design features. Further, Boeing has advised us that it intends to pursue revising the MPD task to reflect the compliance times specified in this AD at the next revision cycle of the document. We have determined that the compliance times specified in the service bulletin will ensure an acceptable level of safety. However, according to the provisions of paragraph (j) of this AD, we may approve requests to adjust the compliance time if the request includes data that prove that the new compliance time would provide an acceptable level of safety. No change to this AD is necessary in this regard.

Request for Credit for Accomplishment of Certain MPD Tasks

Air China asks if accomplishment of Tasks 12-002-01, 12-004-00, 27-240-00, and 27-430-00 of the Boeing 777 MPD is acceptable for compliance with the initial freeplay check and lubrication. United Airlines also requests that airplanes maintained in accordance with these tasks be considered in compliance.

We do not agree to allow the MPD tasks as an acceptable source of service information for accomplishing the freeplay measurement. We find that neither appropriate procedures nor applicable limits are, at this time, specified in the MPD tasks that describe accomplishing the inspections and lubrication. Thus, the MPD tasks are not adequate to ensure that an acceptable level of safety is maintained. However, according to the provisions of paragraph (j) of this AD, we may approve a request of an alternative method of compliance (AMOC) if data are presented to substantiate that the actions provide an acceptable level of safety. We have not changed this AD in this regard.

Request To Publish Service Information

The Modification and Replacement Parts Association (MARPA) states that, typically, ADs are based on service information originating with the type certificate holder or its suppliers. MARPA adds that manufacturer service documents are privately authored instruments generally having copyright protection against duplication and distribution. MARPA notes that when a service document is incorporated by reference into a public document, such as an AD, it loses its private, protected status and becomes a public document. MARPA adds that if a service document is used as a mandatory element of compliance, it should not simply be referenced, but should be incorporated into the regulatory document; by definition, public laws must be public, which means they cannot rely upon private writings. MARPA adds that incorporated by reference service documents should be made available to the public by publication in the Department of Transportation's Docket Management System (DMS), keyed to the action that incorporates them. MARPA notes that the stated purpose of the incorporation by reference method is brevity, to keep from expanding the

Federal Register needlessly by publishing documents already in the hands of the affected individuals; traditionally, "affected individuals" means aircraft owners and operators, who are generally provided service information by the manufacturer. MARPA adds that a new class of affected individuals has emerged, since the majority of aircraft maintenance is now performed by specialty shops instead of aircraft owners and operators. MARPA notes that this new class includes maintenance and repair organizations, component servicing and repair shops, parts purveyors and distributors, and organizations manufacturing or servicing alternatively certified parts under section 21.303 ("Replacement and modification parts") of the Federal Aviation Regulations (14 CFR 21.303). MARPA adds that the concept of brevity is now nearly archaic as documents exist more frequently in electronic format than on paper. Therefore, MARPA asks that the service document deemed essential to the accomplishment of the NPRM be incorporated by reference into the regulatory instrument and published in DMS.

We acknowledge MARPA's comment concerning incorporation by reference. The Office of the Federal Register (OFR) requires that documents that are necessary to accomplish the requirements of the AD be incorporated by reference during the final rule phase of rulemaking. This AD incorporates by reference the document necessary for the accomplishment of the requirements mandated by this AD. Further, we point out that while documents that are incorporated by reference do become public information, they do not lose their copyright protection. For that reason, we advise the public to contact the manufacturer to obtain copies of the referenced service information.

In regard to the commenter's request to post the service bulletin on DMS, we are currently in the process of reviewing issues surrounding the posting of service bulletins on DMS as part of an AD docket. Once we have thoroughly examined all aspects of this issue and have made a final determination, we will consider whether our current practice needs to be revised. No change to this AD is necessary in response to this comment.

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 as proposed.

Costs of Compliance

There are about 695 airplanes of the affected design in the worldwide fleet. The following table provides the estimated costs, at an average labor rate of \$80 per work hour, for U.S. operators to comply with this AD.

Estimated Costs

Action	Work hours	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
Measurement of elevators	4	\$320, per measurement cycle	145	\$46,400, per measurement cycle
Lubrication of elevators	17	\$1,360, per lubrication cycle	145	\$197,200, per lubrication cycle
Measurement of rudder	4	\$320, per measurement cycle	145	\$46,400, per measurement cycle
Lubrication of rudder	7	\$560, per lubrication cycle	145	\$81,200, per lubrication cycle

Measurement of rudder tab	3	\$240, per measurement cycle	145	\$34,800, per measurement cycle
Lubrication of rudder tab	5	\$400, per lubrication cycle	145	\$58,000, 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 adding the following new airworthiness directive (AD):



2007-13-05 Boeing: Amendment 39-15109. Docket No. FAA-2006-25973; Directorate Identifier 2006-NM-178-AD.

Effective Date

- (a) This AD becomes effective July 25, 2007.

Affected ADs

- (b) None.

Applicability

- (c) This AD applies to all Boeing Model 777-200, -200LR, -300, and -300ER series airplanes, certificated in any category.

Unsafe Condition

(d) This AD results from reports of freeplay-induced vibration of unbalanced control surfaces. Excessive freeplay of control surfaces can cause unacceptable airframe vibration during flight. The potential for vibration of the control surface should be avoided because the point of transition from vibration to divergent flutter is unknown. We are issuing this AD to prevent flutter, which can cause damage to the control surface structure 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 Measurements

(f) At the applicable times specified in Tables 1, 2, and 3 of paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 777-27-0062, dated July 18, 2006, except as provided by paragraph (i) of this AD: Measure the freeplay of the right and left elevators, rudder, and rudder tab; and do all related investigative and corrective actions before further flight; by accomplishing all the actions specified in Parts 1, 3, and 5 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-27-0062, dated July 18, 2006, as applicable. Repeat the measurements and related investigative and corrective actions thereafter at the interval specified in Table 1, 2, or 3 of the service bulletin, as applicable.

Repetitive Lubrication

(g) At the applicable times specified in Tables 1, 2, and 3 of paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 777-27-0062, dated July 18, 2006, except as provided by

paragraph (i) of this AD: Lubricate the elevator components, rudder components, and rudder tab components, by accomplishing all the actions specified in Parts 2, 4, and 6 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-27-0062, dated July 18, 2006, as applicable. Repeat the lubrication thereafter at the interval specified in Table 1, 2, or 3 of the service bulletin, as applicable.

Concurrent Compliance Times

(h) If a freeplay measurement of a specified part required by paragraph (f) of this AD and a lubrication of the same part required by paragraph (g) of this AD are due at the same time or will be accomplished during the same maintenance visit, the freeplay measurement and all related investigative and corrective actions must be done before the lubrication is accomplished.

Exceptions to Compliance Times

(i) Where Boeing Special Attention Service Bulletin 777-27-0062, dated July 18, 2006, recommends an initial compliance threshold of "Within 36 months after the date on this service bulletin" for Parts 1, 3, and 5 of the service bulletin, this AD requires an initial compliance threshold of "within 36 months after the effective date of this AD." Where Boeing Special Attention Service Bulletin 777-27-0062, dated July 18, 2006, recommends an initial compliance threshold of "Within 16 months after the date on this service bulletin" for Parts 2, 4, and 6 of the service bulletin, this AD requires an initial compliance threshold of "within 16 months after the effective date of this AD."

Alternative Methods of Compliance (AMOCs)

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

(3) 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.

Material Incorporated by Reference

(k) You must use Boeing Special Attention Service Bulletin 777-27-0062, dated July 18, 2006, 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 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 the NARA, call (202) 741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on April 11, 2007.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

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