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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-NM-64-AD; Amendment 39-13186; AD 2003-12-01]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 777 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to all Boeing Model 777 series airplanes, that requires either a one-time inspection or a review of the airplane maintenance records for both stabilizer trim control modules (STCM) of the trim system of the horizontal stabilizer to determine if STCMs having certain serial numbers are installed; and follow-on corrective actions, if necessary. This amendment also requires eventual replacement of affected STCMs with new or reworked STCMs, which would terminate the follow-on actions. The actions specified by this AD are intended to prevent an uncommanded stabilizer trim due to simultaneous failure of two static seals on one STCM, combined with failure of the automatic shutdown function of the stabilizer trim system. Such failures could result in loss of pitch control and consequent loss of control of the airplane. This action is intended to address the identified unsafe condition.

DATES: Effective July 17, 2003. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of July 17, 2003.

ADDRESSES: The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, 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 Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Kenneth J. Fairhurst, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6456; 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 777 series airplanes was published in the Federal Register on August 30, 2002 (67 FR 55737). That action proposed to require either a one-time inspection or a review of the airplane maintenance records for both stabilizer trim control modules (STCM) of the trim system of the horizontal stabilizer to determine if STCMs having certain serial numbers (S/N) are installed; and follow-on corrective actions, if necessary. That action also proposed to require eventual replacement of affected STCMs with new or reworked STCMs, which would terminate the follow-on actions.

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.

Requests To Change Paragraphs (b) and (d)

Three commenters ask that certain wording in paragraphs (b) and (d) of the proposed AD be changed. Two commenters ask that the wording be changed to specify allowing installation of STCMs having S/Ns 006 through 556 inclusive, if the part has been reworked and marked with an "R" on the nameplate, or if MOOG Aircraft Group Service Bulletin Number 160300-27-124 is marked on the modification plate. The third commenter asks that the information phrase (modified and marked with an "R" suffix) be removed from paragraph (b) of the proposed AD, and that "unless reworked per Part 2 of the Work Instructions of Boeing Service Bulletin 777-27A0047, Revision 2, dated October 11, 2001," be added to paragraph (d) of the proposed AD.

The FAA agrees with the commenters because Part 2 of the Work Instructions of the referenced service bulletin specifies procedures for the installation of STCMs that have been reworked and marked with an "R" on the nameplate, or that include MOOG Aircraft Group Service Bulletin Number 160300-27-124 on the modification plate. We also agree to remove the information phrase (modified and marked with an "R" suffix) from paragraph (b) of the final rule, because the STCM also can be marked with the MOOG service bulletin number. Paragraphs (b) and (d) of this final rule have been changed accordingly.

Requests To Change STCM Serial Numbers

Two commenters state that the range of STCM S/Ns specified in the proposed AD section titled "Explanation of Relevant Service Information" is incorrect and should be changed. The first commenter states that the S/Ns in that section should be corrected to specify 006 through 556 inclusive. The second commenter states that Part 2 of the Work Instructions of the referenced service bulletin references S/Ns 006 through 549 inclusive (however, it actually specifies 006 through 556 inclusive). The commenter states that S/Ns 006 through 556 are the correct S/Ns and recommends those numbers be specified throughout the proposed AD to eliminate any confusion. The commenter also states that listing airplanes having S/Ns 2 through 266 and 273, excluding line numbers 256, 258, and 260 through 263 inclusive, as being subject to the actions specified in service bulletin, could be misinterpreted. The commenter recommends that the S/Ns in the applicability of the proposed AD should match the S/Ns (006 through 556 inclusive) listed in MOOG Aircraft Group Service Bulletin Number 160300-27-124.

Although we acknowledge and agree with both commenters' remarks on the section in the preamble of the proposed AD titled "Explanation of Relevant Service Information," that section is not restated in this final rule.

We do not agree with the second commenter's request to add S/Ns to the applicability specified in the final rule. In the section of the proposed AD titled "Differences Between Service Information and This Proposed AD," we stated that we have determined that the proposed AD applies to all

Model 777 series airplanes. The reason for this is that the subject STCMs are line-replaceable units and may have been installed on other airplanes not included in the effectivity of the referenced service bulletin. Therefore, no change to the final rule is necessary in this regard.

Request To Reduce Compliance Time for Terminating Action

Two commenters ask that the compliance time for the terminating action specified in paragraph (b) of the proposed AD be reduced from "Within 2 years after the effective date of this AD" to "Within 1 year after the effective date of this AD." The first commenter gives no reason for this request. The second commenter, the STCM component manufacturer, states that after inspecting 83 percent of STCMs with S/N 006 through 556, the only requirement on the majority of the components was to stamp either the identification plate or the modification plate for the STCM. The commenter also notes that it has accommodated operators in getting their units inspected and returned within 10 days, and adds that a 2-year compliance period is not warranted.

We do not agree to reduce the compliance time to "Within 1 year after the effective date of this AD." In developing an appropriate compliance time for this terminating action, the FAA considered not only the degree of urgency associated with addressing the subject unsafe condition, but the practical aspect of doing the terminating action within an interval of time that parallels normal scheduled maintenance for the majority of affected operators. In addition, we find that the repetitive tests required by paragraph (a)(1) of the final rule, along with adequate maintenance, will provide an acceptable level of safety until the affected STCMs are replaced. However, operators are always permitted to accomplish the actions earlier than the compliance time specified in an AD. No change to the final rule is necessary in this regard.

Request for Editorial Changes

One commenter suggests that the following editorial changes should be made to the proposed AD:

- Change all references from "the trim system of the horizontal stabilizer" to "the horizontal stabilizer trim system."
- Discussion section: Add the word "airplane" right before "nose-down," add that a single STCM seal failure can result in an uncommanded valve motion in the airplane nose-down direction, and add that two static seals in one STCM combined with failure of the automatic shutdown function could result in loss of pitch control and consequent loss of control of the airplane.
- Add the date to the reference to Revision 2 of the service bulletin in the last paragraph of the Explanation of Relevant Service Information section.

We do not agree that these are substantial changes, nor do they make any essential change to the unsafe condition specified in the proposed AD. Therefore, no change to the final rule is necessary in this regard.

Request for Clarification of Terminating Action

One commenter recommends that the wording specified in paragraph (b) of the proposed AD be clarified. The commenter states that there has been confusion in the past, since the directions have been unclear to several operators and maintenance personnel in the field. The commenter reiterates the wording on page 5, Note 2, of MOOG Aircraft Group Service Bulletin Number 160300-27-124, and recommends adding it to paragraph (b) of the proposed AD to ensure that the STCM units that have already been modified are not removed from service.

We agree with the commenter and have added a new Note 3 to this final rule, for clarification, which specifies that STCM assemblies that have been reworked and marked per Part 2 of the Work Instructions of Boeing Service Bulletin 777-27A0047, Revision 2, dated October 11, 2001, are acceptable for compliance with paragraph (b) of this final rule. Subsequent notes have been renumbered accordingly.

Conclusion

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Cost Impact

There are approximately 404 airplanes of the affected design in the worldwide fleet. The FAA estimates that 131 airplanes of U.S. registry will be affected by this AD.

It will take approximately 1 work hour per airplane to accomplish the inspection/review, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the inspection/review required by this AD on U.S. operators is estimated to be \$7,860, or \$60 per airplane.

The cost impact figure discussed above is 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.

Should an operator be required to do the functional test, it will take approximately 1 work hour per airplane to accomplish, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the functional test on U.S. operators is estimated to be \$60 per airplane, per test cycle.

Should an operator be required to do the replacement, it will take approximately 3 work hours per airplane to accomplish, at an average labor rate of \$60 per work hour. Required parts will be provided by the vendor at no cost to operators. Based on these figures, the cost impact of the replacement on U.S. operators is estimated to be \$180 per airplane.

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).

2003-12-01–Boeing: Amendment 39-13186. Docket 2002-NM-64-AD.

Applicability: All Model 777 series airplanes, certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent an uncommanded stabilizer trim due to simultaneous failure of two static seals on one stabilizer trim control module (STCM), combined with failure of the automatic shutdown function of the stabilizer trim system, which could result in loss of pitch control and consequent loss of control of the airplane, accomplish the following:

One-Time Inspection/Review of Maintenance Records

(a) Within 30 days after the effective date of this AD: Do either a one-time general visual inspection or a review of the airplane maintenance records of both STCMs of the trim system of the horizontal stabilizer to determine the serial numbers (S/N), per Part 2 of the Work Instructions of Boeing Service Bulletin 777-27A0047, Revision 2, dated October 11, 2001. If any affected S/N (6 through 556 inclusive) is found on either STCM, within 150 flight hours after doing the inspection or review, do the actions specified in either paragraph (a)(1) or (a)(2) of this AD. If no affected serial number is found, no further action is required by this AD.

Note 2: For the purposes of this AD, a general visual inspection is defined as: "A visual examination of an interior or exterior area, installation, or assembly to detect obvious damage, failure, or irregularity. This level of inspection is made from within touching distance unless otherwise specified. A mirror may be necessary to enhance visual access to all exposed surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight, or droplight and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked."

Follow-on Corrective Actions

(1) Do a functional test of the trim system of the horizontal stabilizer per Part 1 of the Work Instructions of the service bulletin.

(i) If a test condition of PASSED is reported per Part 1.A.1. of the service bulletin, or considered serviceable per Part 1.A.5.a. of the service bulletin, repeat the test at intervals not to exceed 150 flight hours until the terminating action required by paragraph (b) of this AD is done.

(ii) If a test condition of FAILED is reported, or if the stabilizer does not move, correct the condition as specified in the Boeing 777 Airplane Maintenance Manual, and repeat the functional test at intervals not to exceed 150 flight hours until the terminating action specified in paragraph (b) of this AD is done. If failure of either STCM is found during the test, before further flight, replace the affected STCM with a new or reworked STCM as required by paragraph (b) of this AD.

(2) Replace any affected STCM with a new or reworked STCM as required by paragraph (b) of this AD.

Terminating Action

(b) Except as provided by paragraphs (a)(1)(ii) and (a)(2) of this AD: Within 2 years after the effective date of this AD, replace any STCM having an affected serial number identified in paragraph (a) of this AD with a new or reworked STCM per Part 2 of the Work Instructions of Boeing Service Bulletin 777-27A0047, Revision 2, dated October 11, 2001. Such replacement ends the repetitive functional tests required by paragraph (a)(1) of this AD.

Note 3: STCM assemblies having an affected serial number, as identified in paragraph (a) of this AD, that have been reworked and marked per Part 2 of the Work Instructions of Boeing Service Bulletin 777-27A0047, Revision 2, dated October 11, 2001, are acceptable for compliance with paragraph (b) of this AD.

Credit for Actions Accomplished Per Previous Revisions of Service Bulletin

(c) Replacement of affected STCMs before the effective date of this AD per Boeing Alert Service Bulletin 777-27A0047, dated September 21, 2000; or Boeing Service Bulletin 777-27A0047, Revision 1, dated November 2, 2000; is considered acceptable for compliance with paragraph (b) of this AD.

Part Installation

(d) As of the effective date of this AD, no person may install on any airplane a STCM having S/N 6 through 556 inclusive, unless reworked and marked per Part 2 of the Work Instructions of Boeing Service Bulletin 777-27A0047, Revision 2, dated October 11, 2001.

Alternative Methods of Compliance

(e) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle Aircraft Certification Office (ACO). Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

Note 4: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

Special Flight Permits

(f) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished, provided there has been no known failure of any STCM during any functional test required by paragraph (a)(1) of this AD.

Incorporation by Reference

(g) Unless provided otherwise in this AD, the actions shall be done in accordance with Boeing Service Bulletin 777-27A0047, Revision 2, dated October 11, 2001. 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 Airplane Group, 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 Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Effective Date

(h) This amendment becomes effective on July 17, 2003.

Issued in Renton, Washington, on June 4, 2003.

Ali Bahrami,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 03-14521 Filed 6-11-03; 8:45 am]

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