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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-21356; Directorate Identifier 2004-NM-223-AD; Amendment 39-14417; AD 2005-25-24]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 777-200 and -300 Series Airplanes

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

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Boeing Model 777-200 and -300 series airplanes. This AD requires repetitive detailed inspections of the forward lugs of the power control unit (PCU), yoke assembly, and forward attachment hardware of the left inboard, left outboard, right inboard, and right outboard flaperon PCUs; and other specified/corrective actions if necessary. For certain airplanes, this AD also requires other related concurrent actions. This AD results from reports indicating that operators have found worn, fretted, and fractured bolts that attach the yoke assembly to the flaperon PCU. We are issuing this AD to prevent damage and eventual fracture of the yoke assembly, pin assembly, and attachment bolts that connect the inboard and outboard PCUs to a flaperon, which could lead to the flaperon becoming unrestrained and consequently departing from the airplane. Loss of a flaperon could result in asymmetric lift and reduced roll control of an airplane. A departing flaperon could also cause damage to the horizontal and vertical stabilizers, which could result in loss of control of the airplane if damage is significant.

DATES: This AD becomes effective January 20, 2006.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of January 20, 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: Gary Oltman, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6443; 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 certain Boeing Model 777-200 and -300 series airplanes. That NPRM was published in the Federal Register on June 3, 2005 (70 FR 32524). That NPRM proposed to require repetitive detailed inspections of the forward lugs of the power control unit (PCU), yoke assembly, and forward attachment hardware of the left inboard, left outboard, right inboard, and right outboard flaperon PCUs; and other specified/corrective actions if necessary. For certain airplanes, the NPRM also proposed to require other related concurrent actions.

Comments

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

Request To Revise Compliance Time for Certain Airplanes

Two commenters request that we revise the compliance times of the initial and repetitive inspections for Model 777-200 and -300 series airplanes powered by Rolls-Royce engines. Both commenters state that the initial inspection in the third row of Table 1 of the NPRM should be specified in flight hours. One commenter, the airplane manufacturer, states that the repetitive inspections in the second and third rows of Table 1 of the NPRM should also be specified in flight hours. The commenters point out that these revisions are consistent with what is recommended in Boeing Service Bulletin 777-27A0056, Revision 1, dated July 8, 2004.

We agree. We did not intend to differ from the compliance time recommended in the service bulletin. Therefore, we have revised the compliance times of the initial inspection in the third row of Table 1 of this AD and the repetitive inspection interval in the second and third rows of Table 1 of this AD.

Request To Clarify Certain Compliance Times

One commenter requests that we clarify when the compliance time clock starts for the initial inspections of the Model 777-200 and -300 series airplanes powered by Rolls-Royce engines. These compliance times are listed in rows 2 and 3, of the second column of Table 1 of the NPRM. The commenter states that, according to Boeing Service Bulletin 777-27A0056, Revision 1, the clock for measuring flight cycles and flight hours should start from the date of airplane delivery. The commenter asserts that compliance times as written in the NPRM do not clearly state that.

We agree. We have revised the compliance times in rows 1, 2, and 3, of the second column of Table 1 of this AD to specify that the threshold of the initial inspection should be measured from "* * the date of issuance of the original standard airworthiness certificate or the date of issuance of the original export certificate of airworthiness."

Request To Add Line Numbers (L/Ns) to Table 1

One commenter, the manufacturer, requests that we make the following changes to Table 1 of the NPRM:

- In row 1 of the first column, add L/Ns 1 through 297 inclusive for Model 777-200 and -300 airplanes powered by General Electric or Pratt & Whitney engines.
- In row 2 of the first column, add L/Ns 1 through 297 inclusive for Model 777-200 and -300 airplanes powered by Rolls-Royce engines.
- In row 3 of the first column, add L/Ns 298 and subsequent for Model 777-200 and -300 airplanes powered by Rolls-Royce engines.
- In row 2 of the second column, add the phrase "* * * date of this AD, whichever is later." For clarification we agree to add "L/Ns 1 through 297 inclusive" to row 1 of the first column of Table 1 of this AD. We have verified that the commenter's other proposed changes were included in the NPRM, as published in the Federal Register on June 3, 2005. That information is retained in this AD, so no additional change to this AD is necessary in this regard.

Request To Identify Engine Type

One commenter requests that, for the proposed initial and repetitive inspections, we clarify whether the applicable airplanes are powered by General Electric, Pratt & Whitney, or Rolls-Royce engines. The commenter states that Boeing Service Bulletin 777-27A0056, Revision 1, identifies the applicable airplanes as Group 1, 2, or 3 airplanes with the inspection details.

We agree. We have revised Table 1 of this AD to identify the affected airplanes as Group 1, 2, or 3 airplanes, in addition to including the line numbers and engine types. With the changes discussed previously, this information is consistent with what is specified in the effectivity of Boeing Service Bulletin 777-27A0056, Revision 1.

Request To Delete Compliance Time for Corrective Actions

One commenter requests that we delete the last sentence of paragraph (f) of the NPRM: "Do the applicable corrective actions before further flight." The commenter states that this sentence conflicts with the compliance times in Table 1 of the NPRM.

We do not agree to delete the sentence. Table 1 of this AD specifies compliance times for doing the initial and repetitive inspections. The last sentence of paragraph (f) of this AD specifies the compliance time for doing the corrective actions if, during any inspection, any damage to the attachment hardware, PCU lug, or yoke assembly is found, or a migrated or rotated bearing is found. We defined these corrective actions in the "Relevant Service Information" paragraph of the NPRM. These corrective actions must be done before further flight after finding damage.

We inadvertently omitted the compliance time for the other specified action, which is tightening the attachment bolts to a higher torque value. The other specified action must also be done before further flight after accomplishing the inspections specified in paragraphs (f)(1) through (f)(5) of this AD. Therefore, we have added that action to the last sentence of paragraph (f) of this AD.

Request To Add Concurrent Requirement

One commenter requests that we delete reference to Boeing Service Bulletin 777-27-0049, dated August 30, 2001, from paragraph (h) of the NPRM, and add it to paragraph (g) of the NPRM. As

justification, the commenter states that Boeing Service Bulletin 777-27A0056, Revision 1, recommends accomplishing both Boeing Service Bulletin 777-27-0009, Revision 1, dated May 8, 2003, and Boeing Service Bulletin 777-27-0049 concurrently with Boeing Service Bulletin 777-27A0056, Revision 1.

We disagree. As we stated in the difference paragraph of the NPRM, this AD does not require concurrent accomplishment of Boeing Service Bulletin 777-27-0049. Instead, paragraph (g) of this AD requires concurrent accomplishment of Boeing Service Bulletin 777-27-0009, Revision 1, with the exception to install new, improved steel yoke assemblies having improved bearing retention, part number (P/N) 251W1130-3. We have determined that installing P/N 251W1130-3 concurrently with doing the detailed inspections of the forward lugs of the PCU and of the attachment hardware for damage (required by paragraphs (f)(1) and (f)(5) of this AD), in accordance with Boeing Service Bulletin 777-27A0056, Revision 1, adequately addresses the concurrent requirements identified in Boeing Service Bulletin 777-27-0049. Therefore, no change to this AD is necessary in this regard.

Request for Credit for Group 1 Airplanes

One commenter requests that we revise paragraph (h) of the NPRM to give credit to Group 1 airplanes for the inspections specified in paragraphs (f)(1) through (f)(5) of the NPRM. The commenter points out that Note 3 in the Accomplishment Instructions of Boeing Service Bulletin 777-27A0056, Revision 1, states that Group 1 airplanes have accomplished the intent of that service bulletin if those airplanes have incorporated the modification in Boeing Service Bulletin 777-27-0049 and tightened the PCU attach bolts to the higher torque values given in Boeing Service Bulletin 777-27A0056, Revision 1. The commenter has accomplished the actions specified in Boeing Service Bulletin 777-27-0049 and has tightened the bolts in accordance with Boeing Service Letter 777-SL-27-030, dated January 4, 2001. The commenter asserts that these actions should terminate the proposed inspections for Group 1 airplanes.

We disagree. Boeing Service Bulletin 777-27-0049 does not specify doing a detailed inspection of the aft lugs of the yoke assembly for fretting damage, which is required by paragraph (f)(2) of this AD. In addition, we must ensure that the inspections specified in paragraphs (f)(1) through (f)(5) of this AD are accomplished concurrently with tightening the attachment bolts to a higher torque value (the other specified action required by paragraph (f) of this AD). Operators, who installed the new, improved yoke assembly having improved bearing retention, P/N 251W1130-3, but tightened the attachment bolts to the lower torque values specified in the Boeing 777 Airplane Maintenance Manual, have reported finding loose or fretted bolts, and at least one fractured bolt, with significant damage to the yoke and PCU. However, under the provisions of paragraph (k) of this AD, we may consider requests for approval of an alternative method of compliance if sufficient data are submitted to substantiate that such method would provide an acceptable level of safety.

Request To Identify Airplanes by Group Number

One commenter requests that we revise paragraph (h) of the NPRM to identify the applicable airplanes by group numbers for terminating certain inspections. The commenter states that accomplishing Boeing Service Bulletin 777-27-0049 on Group 1 airplanes terminates the inspections specified in paragraphs (f)(1) through (f)(5) of the NPRM. The commenter also states that accomplishing Boeing Service Bulletin 777-27-0049 on Group 2 and 3 airplanes terminates the inspections specified in paragraphs (f)(3) and (f)(4) of the NPRM.

We disagree. As discussed in the previous comment, we have determined that, for Group 1 airplanes, accomplishing the actions in Boeing Service Bulletin 777-27-0049 terminates only the inspections required by paragraphs (f)(3) and (f)(4) of this AD. Consequently, we do not need to distinguish between airplane groups in this regard. In addition, the effectivity of Boeing Service Bulletin 777-27-0049 is different than the effectivity of Boeing Service Bulletin 777-27A0056,

Revision 1. Therefore, paragraph (h) of this AD is only applicable to the airplanes identified in the effectivity of Boeing Service Bulletin 777-27-0049. No change is necessary to this AD in this regard.

Request To Revise the Difference Paragraph

One commenter requests that we revise the last sentence of the difference paragraph in the NPRM. The commenter asserts that the paragraph should state that accomplishing Boeing Service Bulletin 777-27-0049 is an optional terminating action for certain repetitive inspections "*** on certain Model 777-200 and -300 series airplanes."

We do not agree to add the additional phrase. Although we agree that the commenter's statement is true, we do not publish difference paragraphs in a final rule. In addition, no change is needed to paragraph (h) of this AD in this regard, since that paragraph identifies the certain Model 777-200 and -300 series airplanes that are allowed credit for the optional terminating action.

Request To Revise "Costs of Compliance"

One commenter, an operator, states that the cost impact of the proposed inspections for its fleet is \$34,820, per inspection cycle. The commenter states it has completed the proposed inspections on 35 of 45 of its affected airplanes. The commenter has based the cost impact on a figure of 8.5 man-hours to complete the proposed inspection. We infer the commenter would like us to revise the "Costs of Compliance" section of this AD.

We disagree. The estimated work hours 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. In this case, we agree with the manufacturer's estimate; Boeing Service Bulletin 777-27A0056, Revision 1, estimates 4 man-hours to do the inspection. Therefore, no change is necessary to this AD in this regard.

Explanation of Changes Made to This AD

We have revised the "Alternative Methods of Compliance (AMOCs)" paragraph in this AD to clarify the delegation authority for Authorized Representatives for the Boeing Commercial Airplanes Delegation Option Authorization.

We have also revised this AD 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. 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 483 airplanes of the affected design in the worldwide fleet. This AD affects about 131 airplanes of U.S. registry. The inspections take about 4 work hours per airplane, at an average labor rate of \$65 per work hour. Based on these figures, the estimated cost of the inspections for U.S. operators is \$34,060, or \$260 per airplane, per inspection cycle.

The concurrent actions of Boeing Service Bulletin 777-27-0009, if required, take about 7 work hours per airplane. Required parts cost about \$12,758 per airplane. Based on these figures, the estimated cost of these concurrent actions is \$13,213 per airplane.

The concurrent actions of Boeing Service Bulletin 777-27-0049, if required, take about 5 work hours per airplane. Required parts cost about \$3,245 per airplane. Based on these figures, the estimated cost of these concurrent actions is \$3,570 per airplane.

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

We post ADs on the internet at 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).

2005-25-24 Boeing: Amendment 39-14417. Docket No. FAA-2005-21356; Directorate Identifier 2004-NM-223-AD.

Effective Date

(a) This AD becomes effective January 20, 2006.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Boeing Model 777-200 and -300 series airplanes, certificated in any category, as identified in Boeing Service Bulletin 777-27A0056, Revision 1, dated July 8, 2004.

Unsafe Condition

(d) This AD results from reports indicating that operators have found worn, fretted, and fractured bolts that attach the yoke assembly to the flaperon power control unit (PCU). We are issuing this AD to prevent damage and eventual fracture of the yoke assembly, pin assembly, and attachment bolts that connect the inboard and outboard PCUs to a flaperon, which could lead to the flaperon becoming unrestrained and consequently departing from the airplane. Loss of a flaperon could result in asymmetric lift and reduced roll control of an airplane. A departing flaperon could also cause damage to the horizontal and vertical stabilizers, which could result in loss of control of the airplane if damage is significant.

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.

Detailed Inspections

(f) At the applicable compliance time(s) specified in Table 1 of this AD, do detailed inspections of the parts specified in paragraphs (f)(1) through (f)(5) of the left inboard, left outboard, right inboard, and right outboard flaperon PCUs; and do any other specified and corrective actions as applicable; by doing all of the actions specified in the Accomplishment Instructions of Boeing

Service Bulletin 777-27A0056, Revision 1, dated July 8, 2004. Do the other specified action and applicable corrective actions before further flight.

- (1) Forward lugs of the PCU for nicks, gouges, and fretting damage.
- (2) Aft lugs of the yoke assembly for fretting damage.
- (3) Aft lugs of the yoke assembly for signs of wear on the anti-rotation lugs, unless paragraph (g) or (h) of this AD, as applicable, has been accomplished.
- (4) Aft lugs of the yoke assembly bearings for signs of migration or rotation, unless paragraph (g) or (h) of this AD, as applicable, has been accomplished.
 - (5) Attachment hardware for the PCU to yoke assembly for damage.

TABLE 1.—COMPLIANCE TIMES

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Applicable airplanes	Initial inspection	Repetitive inspections
Group 1 airplanes: Model 777–200 and –300 airplanes powered by General Electric or Pratt & Whitney engines, line numbers (L/Ns) 1 through 297 inclusive.	Before the accumulation of 5,000 total flight cycles since the date of issuance of the original standard airworthiness and certificate or the date of issuance of the original export certificate of airworthiness; or within 12 months after the effective date of this AD; whichever is later.	None.
Group 2 airplanes: Model 777–200 and –300 airplanes powered by Rolls-Royce engines, L/Ns 1 through 297 inclusive.	Before the accumulation of 1,000 total flight cycles since the date of issuance of the original standard airworthiness certificate or the date of issuance of the original export certificate of airworthiness; or within 180 days after the effective date of this AD; whichever is later.	At intervals not to exceed 5,000 flight hours or 750 days, whichever is later.
Group 3 airplanes: Model 777–200 and –300 airplanes powered by Rolls-Royce engines, L/Ns 298 and subsequent.	Before the accumulation of 5,000 total flight hours since the date of issuance of the original standard airworthiness certificate or the date of issuance of the original export certificate of airworthiness; or within 750 days after the effective date of this AD; whichever is later.	At intervals not to exceed 5,000 flight hours or 750 days, whichever is later.

Concurrent Actions for Certain Airplanes

(g) For Model 777-200 series airplanes identified in Boeing Service Bulletin 777-27-0009, Revision 1, dated May 8, 2003: Before or concurrently with accomplishing paragraph (f) of this AD, replace the yoke assemblies and pins of the left inboard, left outboard, right inboard, and right outboard flaperon PCUs with new, improved yoke assemblies and pins by doing all of the actions specified in the Accomplishment Instructions of Boeing Service Bulletin 777-27-0009, Revision 1, dated May 8, 2003; except where the service bulletin specifies installing yoke assembly having part number (P/N) 251W1130-1, install yoke assembly having P/N 251W1130-3.

Optional Terminating Action for Certain Repetitive Inspections

(h) For Model 777-200 and -300 series airplanes identified in Boeing Service Bulletin 777-27-0049, dated August 30, 2001: Replacing the yoke assemblies of the left inboard, left outboard, right inboard, and right outboard flaperon PCUs with new, improved yoke assemblies having improved bearing retention, and doing any other specified and corrective actions, by doing all of the actions specified in the Accomplishment Instructions of Boeing Service Bulletin 777-27-0049, dated August 30, 2001, terminates the detailed inspections required by paragraphs (f)(3) and (f)(4) of this AD.

Credit for Pin Replacements of the Outboard Flaperon PCUs

(i) Accomplishment of the actions specified in paragraph (b) or (d) of AD 99-13-05, amendment 39-11198, before the effective date of this AD is acceptable for compliance with the pin replacements of the left and right outboard flaperon PCUs required by paragraph (g) of this AD.

Parts Installation

(j) As of the effective date of this AD, no person may install on any airplane the following parts: Yoke assembly having P/N S251W115-3 or P/N 251W1130-1; and pin having P/N S251W115-2.

Alternative Methods of Compliance (AMOCs)

- (k)(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 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.
- (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

(l) You must use Boeing Service Bulletin 777-27A0056, Revision 1, dated July 8, 2004; and Boeing Service Bulletin 777-27-0009, Revision 1, dated May 8, 2003, as applicable, to perform the actions that are required by this AD, unless the AD specifies otherwise. The optional terminating action provided by paragraph (h) of this AD, if accomplished, must be done in accordance with Boeing Service Bulletin 777-27-0049, dated August 30, 2001. The Director of the Federal Register approved the incorporation by reference of these documents 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, December 6, 2005.

Kevin M. Mullin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 05-24050 Filed 12-15-05; 8:45 am]

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