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## DEPARTMENT OF TRANSPORTATION

## Federal Aviation Administration

## 14 CFR Part 39

**[Docket No. 2003–NM–173–AD; Amendment 39–13364; AD 2003–23–01]**

**RIN 2120–AA64**

## Airworthiness Directives; Boeing Model 747–400, –400D, and –400F Series Airplanes

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 747–400, –400D, and –400F series airplanes, that requires reviewing airplane maintenance records; inspecting the yaw damper actuator portion of the upper and lower rudder power control modules (PCM) for cracking, and replacing the PCMs if necessary; and reporting airplane maintenance records review and inspection results to the manufacturer. This action is necessary to detect and correct cracking in the yaw damper actuator portion of the upper and lower rudder PCMs, which could result in an uncommanded left rudder hardover, consequent increased pilot workload, and possible runway departure upon landing. This action is intended to address the identified unsafe condition.

**DATES:** Effective December 18, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of December 18, 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:** Doug Tsuji, Aerospace Engineer, Systems and Equipment Branch, ANM–130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055–4056; telephone (425) 917–6487; 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 certain Boeing Model 747–400, –400D, and –400F series airplanes was published in the **Federal Register** on August 28, 2003 (68 FR 51735). That action proposed to require reviewing airplane maintenance records; inspecting the yaw damper actuator portion of the upper and lower rudder power control modules (PCM) for cracking, and replacing the PCMs if necessary; and reporting airplane maintenance records review and inspection results to the manufacturer.

### 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.

### Agreement With the Notice of Proposed Rulemaking (NPRM)

Two commenters state that they agree with the NPRM.

### Request To Revise Paragraph (f) of the NPRM

One commenter requests that paragraph (f) of the NPRM be revised to permit installation of the components without continuing inspections at each installation of the components. The commenter states that it does not believe that is the intent of the applicable service bulletin. The commenter further states that, without specific relief, paragraph (f) of the NPRM will eventually require inspections on parts with fewer total flight hours or total flight cycles than the thresholds specified by the NPRM.

The FAA notes that the requirements of paragraph (f) of the final rule to prohibit units that have reached the thresholds specified in paragraph (f) of the final rule (15,000 total flight hours or more or 2,000 total flight cycles or more) may impose a burden to the affected operators. However, as noted in the ''Interim Action'' section of the NPRM, we consider the actions specified in this final rule to be interim actions, since the root cause of the fatigue cracking has not been determined. We are trying to gain better insight into the nature, cause, extent of the cracking, and to develop a final action for the unsafe condition. However, to prevent continuing inspections upon each installation, we acknowledge that some relief should be provided. Therefore, we have revised paragraph (f) of the final rule to specify that a rudder PCM with 15,000 total flight hours or more or 2,000 total flight hours or more may not be installed ''unless it has been inspected within the previous 15,000 flight hours or 2,000 flight cycles'' of the PCM. We have determined that the relief provided by revising paragraph (f) of the final rule will continue to provide an acceptable level of safety for the fleet.

### Request To Clarify the Term Power Control Modules ''PCMs''

One commenter, the airplane manufacturer, requests that use of the term ''PCM'' in the NPRM be clarified by adding the following words: ''with a main manifold.'' The commenter notes that the 15,000 total flight hours and 2,000 total flight cycle thresholds are based on the life of the PCM main manifold.

We agree that clarification is necessary, and have revised the final rule accordingly.

### Request To Extend the Compliance Time

One commenter requests that the compliance time be extended from ''within 3 months after the effective date of the AD'' to ''within 1 year after the effective date of the AD'' for the following reasons:

- Tool Availability—The commenter notes that Boeing Alert Service Bulletin 747–27A2397, dated July 24, 2003, states that no special tools are needed to perform the proposed ultrasonic inspection. However, the commenter points out that two special tools are actually needed and that it was only recently able to obtain them.

• Accessibility—The commenter states that hangar availability will cause a problem, since the hangars available for inspecting airplanes affected by the NPRM are always occupied by airplanes undergoing heavy maintenance. The commenter states that it will lose valuable time for its fleet if it has to inspect within the proposed 3-month compliance time.

• Inspection Criteria—The commenter notes that the applicable service bulletin does not specify repetitive inspections or any terminating action. The commenter thinks that the inspection is mainly to collect data and, therefore, cannot understand the urgency of the 3-month compliance time.

We do not agree with the commenter's request. As stated previously in this final rule, the root cause of the fatigue cracking has not been determined. Because the root cause is unknown, we do not know if the fatigue cracking that was reported is a random event or if it may indicate that the structural life of the PCMs with a main manifold is shorter than expected. We agree with the referenced service bulletin that special tools are not necessary to perform the ultrasonic inspection. However, the manufacturer has advised that other tools used as aids in performing the inspection are available to operators. Additionally, we acknowledge that the commenter may lose time for its fleet if it has to inspect within the proposed 3-month compliance time. However, because of the severe consequences of the unsafe condition existing and the fact that there were apparently no indications of a crack developing, we have determined that the 3-month compliance time is prudent and appropriate. No change is necessary to the final rule in this regard. However, under the provisions of paragraph (g) of the final rule, we may approve requests for adjustments to the compliance time if data are submitted to substantiate that such an adjustment would provide an acceptable level of safety.

**Request To Revise Criterion for Applicable Airplanes**

One commenter requests that the criterion for airplanes specified to perform the proposed inspections be revised from 15,000 total flight hours or more or 2,000 total flight cycles or more to 55,000 total flight cycles or 7,500 total flight cycles, as specified by Boeing Alert Service Bulletin 747–27A2397, dated July 24, 2003. The commenter states that its service experience supports the criterion specified in the applicable service bulletin.

We do not agree with the commenter's request. We acknowledge that the applicable service bulletin does specify that the reported incident occurred on a rudder PCM with approximately 55,000 flight hours and 7,500 flight cycles, and that the airplanes that were chosen for the investigation had accumulated at least 55,000 flight hours and 7,500 flight cycles. However, the Accomplishment Instructions (paragraph 3.B.1 of the applicable service bulletin) clearly states that, ''If your records show that the upper and lower rudder PCMs each have a main manifold with less than 15,000 flight hours or 2,000 flight cycles: It is not necessary to do the inspections* * *'' We have evaluated these criteria and conclude that the appropriate criterion for applicable airplanes to be inspected is those airplanes with PCMs that have accumulated 15,000 total flight hours or 2,000 total flight hours. No change to the final rule is necessary in this regard.

**Request To Revise Sensitivity Level of Dye Penetrant Inspection**

One commenter, the PCM manufacturer, requests that the sensitivity level of the dye penetrant inspection for PCMs that are cracked and returned to the manufacturer be revised. The commenter notes that, after the issuance of Boeing Alert Service Bulletin 747–27A2397, it increased the inspection sensitivity level from Level 3 to Level 4 for those PCMs that were returned.

We recognize the commenter's expertise and appreciate the information it has provided. This final rule requires PCMs with any cracking to be returned to the PCM manufacturer, but does not specify the inspection process to be used by the PCM manufacturer. Therefore, the change in sensitivity level of the dye penetrant inspection on PCMs returned to the PCM manufacturer does not directly affect the requirements of this AD. No change to this final rule is necessary in this regard.

**Request for Industry To Provide Operational Procedures**

One commenter states that industry must develop a set of operational procedures to allow flight crews to deal with a flight situation such as the one described in the NPRM. The commenter agrees with the actions proposed in the NPRM, but specifies that additional procedures for flight crews are necessary.

We acknowledge the commenter's concern. As previously explained, we consider this final rule to be interim action. Based on the findings of the reports to be submitted and any other pertinent information, we may consider further rulemaking actions. However, until such findings are made known and further actions developed, we consider the actions specified in the final rule to provide an acceptable level of safety. Therefore, no change to the final rule is necessary in this regard.

**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 final rule.

**Interim Action**

We consider this final rule interim action. The inspection reports that are required by this final rule will enable the manufacturer and the FAA to obtain better insight into the nature, cause, and extent of the cracking, and eventually to develop final action to address the unsafe condition. Once final action has been identified, we may consider further rulemaking.

**Cost Impact**

There are approximately 180 airplanes of the affected design in the worldwide fleet. The FAA estimates that 13 airplanes of U.S. registry will be affected by this AD, that it will take approximately 1 work hour per airplane to accomplish the airplane maintenance records review, and that the average labor rate is $65 per work hour. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be $845, or $65 per airplane.

Should an operator be required to accomplish the inspection, it will take approximately 4 work hours per airplane, at an average labor rate of $65 per work hour. Based on these figures, the cost impact of the inspection is estimated to be $260 per airplane.

The cost impact figures discussed above are 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.

**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:

**2003–23–01 Boeing**: Amendment 39–13364. Docket 2003–NM–173–AD.

*Applicability:* Model 747–400, –400D, and –400F series airplanes, as listed in Boeing Alert Service Bulletin 747–27A2397, dated July 24, 2003; certificated in any category.

*Compliance:* Required as indicated, unless accomplished previously.

To detect and correct cracking in the yaw damper actuator portion of the upper and lower rudder power control module (PCM) main manifolds, which could result in an uncommanded left rudder hardover, consequent increased pilot workload, and possible runway departure upon landing, accomplish the following:

**Review of Airplane Maintenance Records**

(a) Within 3 months after the effective date of this AD: Review the airplane maintenance records to determine if each PCM has a main manifold with less than 15,000 total flight hours or fewer than 2,000 total flight cycles, or do the inspection required by paragraph (c) of this AD.

**Follow-on Actions: PCMs With a Main Manifold Having Less Than 15,000 Total Flight Hours or Less Than 2,000 Flight Cycles**

(b) If it can be positively determined from the review of the airplane maintenance records that each rudder PCM has a main manifold that is below either of the thresholds specified in paragraph (a) of this AD: Submit a report to the manufacturer in accordance with paragraph (d) of this AD.

**Follow-on Actions: PCMs With a Main Manifold Having 15,000 Total Flight Hours or More and 2,000 Flight Cycles or More**

(c) If it cannot be positively determined that each rudder PCM has a main manifold that is below either of the thresholds specified in paragraph (a) of this AD: Within 3 months after the effective date of this AD, do an ultrasonic inspection of the yaw damper actuator portion of the upper and lower rudder PCM main manifold in accordance with the Accomplishment Instructions specified in Boeing Alert Service Bulletin 747–27A2397, dated July 24, 2003. After completing the actions required by paragraph (c)(1) or (c)(2) of this AD, as applicable, submit a report to the manufacturer in accordance with paragraph (d) of this AD.

(1) If no cracking is found: Apply sealant and a torque stripe and install a lockwire on the applicable rudder PCM per Figure 1 or Figure 2, as applicable, and the Accomplishment Instructions specified in Boeing Alert Service Bulletin 747–27A2397, dated July 24, 2003.

(2) If any cracking is found: Before further flight, replace the affected PCM with a PCM with a main manifold having less than 15,000 total flight hours and less than 2,000 total flight cycles, or a PCM with a main manifold that has been inspected by the supplier (Parker Hannifin Corporation) or ultrasonically inspected in accordance with the Accomplishment Instructions specified in Boeing Alert Service Bulletin 747–27A2397, dated July 24, 2003.

**Reporting Requirements**

(d) At the applicable time specified in paragraph (d)(1) or (d)(2) of this AD, accomplish paragraph (e).

(1) If the inspection was done after the effective date of this AD: Submit the report and PCM, if applicable, within 20 days after the inspection.

(2) If the inspection was accomplished prior to the effective date of this AD: Submit the report and PCM, if applicable, within 20 days after the effective date of this AD.

(e) Do the requirements of paragraphs (e)(1) and (e)(2) of this AD. Information collection requirements contained in this regulation have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*) and have been assigned OMB Control Number 2120–0056.

(1) Submit a report of the airplane maintenance records review or the inspection findings (positive and negative) to: The Boeing Company, Service Engineering—Mechanical Systems, Attn: R. Adams, fax: (425) 342–5224. The report must contain the airplane and rudder PCM serial numbers, the total flight hours and flight cycles for each rudder PCM (and rudder PCM main manifold, if known), and a description of any damage found. Submission of the Inspection Report Form (Figure 3 of Boeing Alert Service Bulletin 747–27A2397, dated July 24, 2003) is an acceptable method of complying with this requirement.

(2) Send parts to Parker Hannifin Corporation in accordance with the shipping instructions specified in Appendix A of the service bulletin.

**Parts Installation**

(f) As of the effective date of this AD, no person shall install on any airplane a rudder PCM with a main manifold having 15,000 total flight hours or more, or 2,000 total flight cycles or more, unless it has been ultrasonically inspected (either by the operator or the supplier) within the previous 15,000 flight hours or 2,000 flight cycles, in accordance with the Accomplishment Instructions specified in Boeing Alert Service Bulletin 747–27A2397, dated July 24, 2003.

**Alternative Methods of Compliance**

(g) In accordance with 14 CFR 39.19, the Manager, Seattle Aircraft Certification Office, FAA, is authorized to approve alternative methods of compliance for this AD.

**Incorporation by Reference**

(h) Unless otherwise specified, the actions shall be done in accordance with Boeing Alert Service Bulletin 747–27A2397, dated July 24, 2003. 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**

(i) This amendment becomes effective on December 18, 2003.

Issued in Renton, Washington, on November 3, 2003.

**Kalene C. Yanamura,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*

[FR Doc. 03–28089 Filed 11–12–03; 8:45 am]

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