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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-NM-28-AD; Amendment 39-13160; AD 2003-11-01]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to all Boeing Model 747 series airplanes, that currently requires periodic inspections and cleaning of the drainage system cavity of the canted pressure deck, aft of the wing center section. This amendment adds new repetitive tests and inspections for discrepancies of the drainage system of the canted pressure deck; and corrective actions, if necessary. This amendment also terminates the requirements of the existing AD. The actions specified by this AD are intended to prevent ice accumulation on the lateral flight control cables and/or components due to water entering the wheel well of the landing gear and freezing, which could restrict or jam control cable movement, resulting in loss of controllability of the airplane. This action is intended to address the identified unsafe condition.

DATES: Effective July 3, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of July 3, 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: Rick Kawaguchi, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6434; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 89-12-07, amendment 39-6232 (54 FR 24161, June 6, 1989), which is applicable to all Boeing Model 747 series airplanes, was published in the Federal

Register on October 16, 2002 (67 FR 63856). The action proposed to continue to require periodic inspections and cleaning of the drainage system cavity of the canted pressure deck, aft of the wing center section. The new action proposed to add new repetitive tests and inspections for discrepancies of the drainage system of the canted pressure deck located in the wheel wells of the main landing gear of the left and right wings; and corrective actions, if necessary. The new action also proposed to terminate the requirements of the existing AD.

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.

Request To Change Compliance Times

One commenter (the manufacturer) asks that the compliance times specified in paragraphs (b), (c), and (d) of the proposed AD be changed to allow a grace period for operators of new airplanes. The commenter states that the drain system is already open and clean when the airplane is delivered.

The FAA agrees with the commenter that the drain system should already be open and clean when the airplane is delivered. Therefore, paragraphs (b), (d), and (e) of this final rule (paragraphs (b), (c), and (d) of the proposed AD) have been changed to allow a grace period relative to the date of issuance of the original airworthiness certificate, or the date of issuance of the export certificate of airworthiness, whichever is first.

Request To Clarify Summary Section

The same commenter asks that the Summary section in the proposed AD be changed, for clarification, to limit the location specified to "the drainage system of the canted pressure deck" to allow operators some leeway when doing the maintenance tasks. The commenter states that the intent of the proposed AD is to keep the drain system open and clean, and the phrase "drainage system of the canted pressure deck" refers to a series of drains normally mounted to the canted pressure deck. The commenter adds that the drain system includes different drains and drain lines, and the drain lines are mounted in the wheel well area and the area above the fairings below the wing. The commenter notes that the phrase "wing landing gear wheel well" is used interchangeably with the phrase "wheel well of the main landing gear" throughout the proposed AD.

We agree with the commenter, and we have changed the applicable sections in this final rule for clarification to the phrase "wheel well of the landing gear."

The same commenter asks that the unsafe condition in the Summary section be changed to "The actions specified by this AD are intended to prevent ice accumulation on the lateral flight control cables and/or components due to water entering the wheel well of the MLG and freezing, which could restrict or jam control cable movement, resulting in degraded or loss of controllability of the airplane." The commenter states that this would provide a better explanation of the unsafe condition.

We agree to add "and/or components," but we do not agree to add the word "degraded." The phrase "loss of controllability of the airplane" adequately describes the end-level effect on the airplane. "Degraded controllability" would not necessarily result in loss of control of the airplane, unless there were other contributing factors. We do not list all possible conditions that could result from ice accumulation—only the end-level effect.

Request To Clarify Certain Sections in the Preamble

The same commenter asks that the first and third paragraphs of the Explanation of Relevant Service Information section in the preamble of the proposed AD be changed to remove the phrase "located in the wheel wells of the main landing gear of the left and right wings" for clarification. The

commenter also asks that the same phrase in the first paragraph of the Explanation of Requirements of Proposed Rule section be removed for clarification. The commenter also asks for minor editorial changes.

We acknowledge and agree with the commenter's remarks on the preamble of the proposed AD; however, the sections referred to are not restated in this final rule. Therefore, no change to the final rule is necessary in this regard.

Request To Change Paragraph (b)(1)

Two commenters ask for changes to paragraph (b)(1) of the proposed AD. One commenter states that the tests specified in paragraph (b)(1) do not allow any leeway to the airline. The commenter adds that operators may find it easier to use a vacuum or "snake" to do the test and notes that this paragraph should be changed to allow other methods to verify the drains are open and clean. The other commenter suggests that the drains at left buttock line (LBL) 45.75 and LBL 65.00 be used as an alternative means for determining the condition of the drainage of the canted pressure deck.

We do not agree to change paragraph (c)(1) of the final rule (paragraph (b)(1) of the proposed AD). We acknowledge that alternate inspection methods can be used to ensure that the drains are open and clean if such methods are submitted to the FAA for approval as an alternative method of compliance (AMOC), as provided in paragraph (g)(1) of this final rule. No change to the final rule is necessary in this regard.

Request To Change Paragraph (b)(2)

One commenter asks that the last sentence in paragraph (b)(2) of the proposed AD be changed to state, "Accomplishment of paragraphs (b)(1) and (b)(2) of this AD replaces the requirements in paragraph (a) of this AD." The commenter states that the sentence is not accurate as written because doing the procedures specified in Work Package 2 does not verify that the drains are open and clean. The commenter adds that paragraph (b)(2) does not terminate the requirements in paragraph (a) of the proposed AD; it merely replaces them with new requirements.

We do not agree with the commenter. The inspection procedures required by paragraph (c)(2) of the final rule (paragraph (b)(2) of the proposed AD) meet the requirements specified in paragraph (a) of the final rule, which is to verify that all drains are open and clean. We acknowledge that the inspections required by paragraph (c)(1) of the final rule also address inspections of the drains, but the test in that paragraph goes beyond the inspection requirements in paragraph (a) of this final rule. No change to the final rule is necessary in this regard.

Request To Withdraw Proposed AD

Three commenters state that, since the issuance of AD 89-12-07, they have had no findings of drainage problems in the canted pressure deck area on the subject airplanes. The comments are as follows:

- One commenter states that it has incorporated numerous service bulletin modifications to improve the drainage of the subject area. The commenter adds that it would be interesting to determine if such modifications have been incorporated on the airplanes specified in the proposed AD and if the inspections and cleaning required by AD 89-12-07 have been done, as the commenter has done. The commenter also notes that the proposed AD is not necessary for Model 747-400 series airplanes because all the improvement modifications were incorporated per the service bulletins.
- One commenter states that the actions required by the proposed AD are done per AD 89-12-07, and per the current maintenance review board (MRB) inspections.

- One commenter provides data showing its inspection results and states that, as the data indicate, it has found virtually no trapped water in the canted pressure deck, and based on this, the actions required by the proposed AD are not necessary.

We infer that the commenters are asking that the proposed AD be withdrawn, and we do not agree. We have received several reports on Model 747-400 series airplanes, and other airplanes on which the service bulletin modifications have been incorporated to improve the drainage of the subject area, and water is still entering the landing gear wheel well and freezing. Operators of these airplanes have been inspecting the subject area per the requirements in AD 89-12-07. In addition, because the procedures specified in MRBs vary from operator to operator, there are no assurances that each operator's MRB contains the equivalent actions required by this AD. We have determined that the inspections specified in the existing MRB and AD 89-12-07 do not provide an adequate level of safety; therefore, we have determined that this final rule is appropriate and warranted. No change is made to the final rule in this regard.

Request To Extend Repetitive Test Intervals

One commenter asks that the repetitive interval for the cabin pressurization tests required by paragraph (d) of the proposed AD be extended to every 8 years so the tests can be at the "D" check interval because some operators have been using this interval for several years. The commenter states that the intervals specified in the proposed AD are taken from the referenced service information, and seem to be based on the MRB intervals and the present average intervals used by 747 operators. The commenter adds that the proposed AD should provide technically possible maximum intervals with substantiation. The commenter notes that the referenced service information and the proposed AD do not make any distinction between the oldest, least modified Model 747-100 airplane, and the latest Model 747-400 airplane. The commenter states that it would be reasonable to take the airplane type and modification status into account when determining the test intervals.

We do not agree with the commenter that operators are entitled to inspection intervals based on the maximum intervals between maintenance checks, nor do we agree that the intervals should be adjusted based on the level of modification. As stated under "Request To Withdraw Proposed AD," we have received reports of freezing problems found on Model 747-400 series airplanes and modified airplanes, as well as airplanes not yet modified. If operators can provide substantiating data for adjustment of the repetitive test intervals required by paragraph (e) of the final rule (paragraph (d) of the proposed AD), we will consider approving the commenter's request as an AMOC, as provided in paragraph (g)(1) of this final rule.

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 1,127 airplanes of the affected design in the worldwide fleet. The FAA estimates that 255 airplanes of U.S. registry will be affected by this AD.

It takes approximately 1 work hour per airplane to accomplish the actions that are required by AD 89-12-07, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the currently required actions is estimated to be \$60 per airplane, per inspection cycle.

It will take approximately 12 work hours per airplane to accomplish the test/inspection/cleaning of the drainage system specified in Work Packages 1 and 2 of Boeing Alert Service Bulletin 747-51A2057, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of

the test/inspection/cleaning required by this AD on U.S. operators is estimated to be \$183,600, or \$720 per airplane, per cycle.

It will take approximately 4 work hours per airplane to accomplish the inspection specified in Work Package 3 of the service bulletin, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the inspection required by this AD on U.S. operators is estimated to be \$61,200, or \$240 per airplane, per inspection cycle.

It will take approximately 4 work hours per airplane to accomplish the cabin pressurization test specified in Work Package 4 of the service bulletin, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the test required by this AD on U.S. operators is estimated to be \$61,200, or \$240 per airplane, per test cycle.

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 removing amendment 39-6232 (54 FR 24161, June 6, 1989), and by adding a new airworthiness directive (AD), amendment 39-13160, to read as follows:

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).

2003-11-01 Boeing: Amendment 39-13160. Docket 2002-NM-28-AD. Supersedes AD 89-12-07, Amendment 39-6232.

Applicability: All Model 747 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 (g)(1) 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 ice accumulation on the lateral flight control cables and/or components due to water entering the wheel well of the landing gear and freezing, which could restrict or jam control cable movement, resulting in loss of controllability of the airplane, accomplish the following:

Restatement of Requirements of AD 89-12-07

Repetitive Inspections/Cleaning

(a) Within 15 months after July 10, 1989 (the effective date of AD 89-12-07, amendment 39-6232), unless accomplished 3 months before July 10, 1989, and thereafter at intervals not to exceed 18 months: Gain access to the cavity aft of the wing center section and remove all debris and foreign material, clean the cavity, and verify all drains are open and clean.

New Requirements of This AD

Repetitive Tests/Inspections of the Drainage System/Corrective Action

(b) At the later of the times specified in paragraphs (b)(1) and (b)(2) of this AD, do the actions required by paragraph (c) of this AD.

(1) Within 18 months after the effective date of this AD.

(2) Within 18 months since date of issuance of the original airworthiness certificate, or since date of issuance of the export certificate of airworthiness, whichever is first.

(c) Do the actions specified in paragraphs (c)(1), (c)(2), and (c)(3) of this AD per the Work Instructions of Boeing Alert Service Bulletin 747-51A2057, dated February 21, 2002.

(1) Do a test (including doing a general visual inspection of the external drains, reducer, and drain lines, and sending 3 to 5 pounds per square inch compressed air through the drain line) of the drainage system of the canted pressure deck for discrepancies (including damage, holes, signs of frozen water, and signs of blockage), per Work Package 1 of the Work Instructions of the service bulletin. Repeat the test at least every 18 months.

(2) Clean the drainage system for the canted pressure deck, and do a general visual inspection of the system for discrepancies, per Work Package 2 of the Work Instructions of the service bulletin. Repeat the cleaning and inspection at least every 18 months. Accomplishment of this paragraph terminates the requirements in paragraph (a) of this AD.

(3) Except as required by paragraph (f) of this AD: If any discrepancy is found during any inspection or test required by paragraphs (c)(1) and (c)(2) of this AD, before further flight, repair per the Work Instructions of the service bulletin.

Repetitive Inspections of the Canted Pressure Deck/Corrective Action

(d) At the later of the times specified in paragraphs (d)(1) and (d)(2) of this AD: Do a general visual inspection of the canted pressure deck for discrepancies (including loose or missing fasteners; loose, missing, or cracked sealant; and leak paths), per Work Package 3 of the Work Instructions of Boeing Alert Service Bulletin 747-51A2057, dated February 21, 2002. If any discrepancy is found, before further flight, repair (including replacing any loose or missing fastener or loose, missing, or cracked sealant; and repairing any leak found) per the service bulletin; except as required by paragraph (f) of this AD. Repeat the inspection at least every 36 months.

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."

(1) Within 36 months after the effective date of this AD.

(2) Within 36 months since date of issuance of the original airworthiness certificate, or since date of issuance of the export certificate of airworthiness, whichever is first.

Repetitive Cabin Pressurization Tests/Corrective Action

(e) At the later of the times specified in paragraphs (e)(1) and (e)(2) of this AD: Do a cabin pressurization test to check for leaks in the canted pressure deck, per Work Package 4 of the Work Instructions of Boeing Alert Service Bulletin 747-51A2057, dated February 21, 2002. If any leak is found, before further flight, repair per the service bulletin; except as required by paragraph (f) of this AD. Repeat the cabin pressurization test at least every 72 months.

(1) Within 72 months after the effective date of this AD.

(2) Within 72 months since date of issuance of the original airworthiness certificate, or since date of issuance of the export certificate of airworthiness, whichever is first.

Corrective Action per Seattle Aircraft Certification Office (ACO)

(f) If any discrepancy is found during any inspection or test required by this AD and the service bulletin specifies to contact Boeing for appropriate action: Before further flight, repair per a method approved by the Manager, Seattle ACO, FAA; or per data meeting the type certification basis of the airplane approved by a Boeing Company Designated Engineering Representative who has been authorized by the Manager, Seattle ACO, to make such findings. For a repair method to be approved, the approval must specifically reference this AD.

Alternative Methods of Compliance

(g)(1) 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 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.

(2) Alternative methods of compliance, approved previously in accordance with AD 89-12-07, amendment 39-6232, are approved as alternative methods of compliance with paragraph (c)(2) of this AD.

Note 3: 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

(h) 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.

Incorporation by Reference

(i) Unless otherwise provided in this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 747-51A2057, dated February 21, 2002. 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

(j) This amendment becomes effective on July 3, 2003.

Issued in Renton, Washington, on May 20, 2003.

Ali Bahrami,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 03-13118 Filed 5-28-03; 8:45 am]

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