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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001-NM-117-AD; Amendment 39-13261; AD 2003-16-08]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747-100, -100B, -100B SUD, -200B, -200C, -200F, -300, -400, -400D, and -400F Series Airplanes; and Model 747SR Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 747-100, -100B, -100B SUD, -200B, -200C, -200F, -300, -400, -400D, and -400F series airplanes; and Model 747SR series airplanes. For certain airplanes, this AD requires repetitive inspections of the clevis bushings on the inboard and outboard sequence carriages of the wing foreflap for bushing migration, and corrective action if necessary; replacement of existing bushings with new bushings, which terminates the repetitive inspections; and replacement of the bushing markers with new markers, if necessary, to indicate the correct bushing orientation. For certain other airplanes, this AD requires a one-time inspection to determine whether the bushings are in the correct orientation, and follow-on actions. The actions specified by this AD are intended to prevent the loss of an inboard trailing edge foreflap during flight, and subsequent damage to the airplane in flight. This action is intended to address the identified unsafe condition.

DATES: Effective September 12, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of September 12, 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: 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: 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 747-100, -100B, -100B SUD, -200B, -200C, -200F, -300, -400, -400D, and -400F series airplanes; and Model 747SR series airplanes; was published in the Federal Register on January 4, 2002 (67 FR 544). For certain airplanes, that action proposed to require repetitive inspections of the clevis bushings on the inboard and outboard sequence carriages of the wing foreflap for bushing migration, and corrective action if necessary; replacement of existing bushings with new bushings, which would terminate the repetitive inspections; and replacement of the bushing markers with new markers, if necessary, to indicate the correct bushing orientation. For certain other airplanes, that action proposed to require a one-time inspection to determine whether the bushings are in the correct orientation, and follow-on actions.

Explanation of Relevant Service Information

The proposed AD cited Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993, as the appropriate source of service information for accomplishment of the proposed requirements. Since the proposed AD was issued, Boeing has further revised the service bulletin; however, Revision 6, dated January 16, 2003, adds no new requirements.

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 Withdraw Proposed AD

One operator disagrees that the proposed AD is necessary or justified. The operator questions the need for additional rulemaking in light of existing regulatory actions that address a similar incident and unsafe condition. The operator notes that inspection of the bushings that are the subject of the proposed AD is also required by AD 92-27-04, amendment 39-8437 (57 FR 59801, December 16, 1992), as corrected (58 FR 8693, February 17, 1993). In addition, the operator considers the incident described in the proposed AD (involving a foreflap separating from and colliding with an airplane in flight) to be the same situation addressed by AD 99-05-02, amendment 39-11051 (64 FR 9906, March 1, 1999). The operator further suggests that the proposed requirement to permanently install markers would subject the markers to considerable wear and, in combination with other related ADs, could have long-term and costly effects on operations and maintenance. Moreover, the operator doubts that incorrect markers would still be installed on airplanes after 8 years in service, asserting that the manufacturer has purged all stocks of incorrect markers.

The FAA does not concur with the request to withdraw the proposed AD. In the incident that led to this rulemaking, the foreflap departed the airplane during flight and collided with the fuselage, resulting in a 5\1/2\-foot by 3-foot hole in the fuselage–despite the prior accomplishment of the requirements of AD 92-27-04 on that airplane. This incident illustrates the danger of large pieces of airplane structure departing the airplane. AD 99-05-02 was issued to correct certain conditions with certain shims and fasteners associated with flap carriages and is not related to the bushing problem addressed by this AD.

Also, the commenter did not provide adequate data to support the claim that no incorrect markers would still be installed on an airplane after 8 years in service. Contrary to the commenter's assertion, Boeing reports that its supply of incorrect markers has not been purged. When Boeing first revised the marker to show the correct orientation, the part number of the new marker was the same as the marker showing the incorrect orientation (part number BAC27EWG-24). Boeing created a new

marker with a new part number (BAC27EWG-39). According to Boeing Service Letter 747-SL-57-77, "* * * due to the large numbers of correct BAC27EWG-24 markers already in stock, the BAC27EWG-39 was made an option to the correct BAC27EWG-24 marker. This may have allowed some of the incorrect BAC27EWG-24 markers to be installed." Therefore, because some markers showing incorrect orientation may still be installed on affected airplanes, the FAA finds it necessary to issue this AD.

Request To Reconcile Applicability

One commenter identifies a difference between the applicability of the proposed AD and the effectivity of Service Bulletin 747-57-2166. The proposed AD includes Model 747-400s, which are not listed in the service bulletin. The commenter requests that this disagreement be corrected before the AD is issued.

The FAA acknowledges the disagreement; however, as explained in the proposed AD, Boeing had reported (via Service Letter 747-SL-57-77, dated November 18, 1993) that the subject incorrect markers may also be installed on Model 747-400 airplanes. Model 747-400 airplanes (except the Model 747SP, which has flaps of a different design) are correctly included in the applicability of this AD. No change to the final rule is necessary regarding this issue.

Request To Revise Identity of Airplanes Affected by Certain Requirements

One operator requests that paragraphs (a) and (b) of the proposed AD be revised to clarify the group of airplanes subject to those proposed requirements. Paragraphs (a) and (b), as proposed, identify airplanes with respect to bushing replacement done in accordance with a certain service bulletin. However, for certain airplanes (i.e., those with line numbers after 316), the bushings were installed correctly by means of a production change. The operator concludes that paragraphs (a) and (b), as written in the proposed AD, would have excluded airplanes on which the production change had been completed.

The FAA concurs with the request, for the reasons provided by the commenter. The intent of paragraphs (a) and (b)–as well as (c) and (d)–of this AD is to consider the status of the bushing installation–
regardless of the method followed (i.e., the service bulletin or the production change). Paragraphs (a) through (d) have been revised in the final rule to reflect this intent.

Request To Revise Compliance Time

One operator requests that the proposed grace period and repetitive inspection interval be revised to correspond to the operator's C-check schedule. The proposed 1,200-flight-cycle interval would not conform to the operator's C-check schedule, so the operator would need to schedule intermediate maintenance to comply with the proposed AD. This commenter suggests that the proposed grace period and repetitive inspection interval be changed to "1,200 flight cycles or 18 months, whichever occurs later," which would allow the inspections to be accomplished during the operator's regularly scheduled maintenance.

The FAA does not concur. Failure of the clevis lug is flight-cycle-dependent, not time-dependent. Allowing an 18-month interval between inspections for high utilization airplanes would not provide an acceptable level of safety. No change to the final rule is necessary in this regard.

Request To Require Operator To Revise Maintenance Manual

One operator suggests that the Boeing 747 Airplane Maintenance Manual may contribute to the identified unsafe condition because the Boeing overhaul manual (referenced in the maintenance manual) does not specify that the bushings be installed in the orientation specified in the proposed AD. The operator adds that a manual revision would be more effective than an AD in addressing the unsafe condition.

The FAA disagrees. The operator may have been considering a now-obsolete airplane maintenance manual; the most recent version of the maintenance manual specifies the correct installation of the bushing. No change to the final rule is necessary in this regard.

Request To Clarify Terminating Action Requirement

One commenter requests clarification of paragraph (c) of the proposed AD. The commenter questions whether the intent of the requirement is to replace all bushings–whether or not the bushing installation is properly oriented–in accordance with Revision 5 of the service bulletin.

The FAA agrees that clarification of the requirement might be necessary. However, as stated previously, paragraph (c) has been revised in the final rule. The changes made to paragraph (c) of this AD address this commenter's concerns.

Explanation of Additional Changes to Proposed AD

Several changes have been made to the proposed AD. Paragraphs (a) and (b) of the proposed AD specify accomplishment of a "general visual inspection." The FAA has recharacterized this as a "detailed inspection" in the final rule to clarify the type of inspection required; the inspection procedures remain the same. Note 1 in this final rule defines a detailed inspection.

Paragraph (d) of the proposed AD has been retitled "Part Installation" to more accurately identify the requirement. In addition, the text of paragraph (d) has been revised for clarification.

Although the applicability identified in the proposed AD remains the same, the number of airplanes affected by this final rule has been corrected (as specified in the Cost Impact section).

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.

Changes to 14 CFR Part 39/Effect on the Proposed AD

On July 10, 2002, the FAA issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's airworthiness directives system. The regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance (AMOCs). The office authorized to approve AMOCs is identified in paragraph (e) of this proposed AD.

Change to Labor Rate Estimate

We have reviewed the figures we have used over the past several years to calculate AD costs to operators. To account for various inflationary costs in the airline industry, we find it necessary to increase the labor rate used in these calculations from $60 per work hour to $65 per work hour. The cost impact information, below, reflects this increase in the specified hourly labor rate.

Cost Impact

There are approximately 731 airplanes of the affected design in the worldwide fleet. The FAA estimates that 137 airplanes of U.S. registry will be affected by this AD, that it will take approximately 7 work hours per airplane to accomplish the required actions, and that the average labor rate is $65 per work hour. The cost of required parts is negligible. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be $62,335, or $455 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.

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).

2003-16-08 Boeing: Amendment 39-13261. Docket 2001-NM-117-AD.

Applicability: Model 747-100, -100B, -100B SUD, -200B, -200C, -200F, -300, -400, -400D, and -400F series airplanes; and Model 747SR series airplanes; certificated in any category; line numbers 1 through 1009, except 968, 999, 1004, and 1007.

Compliance: Required as indicated, unless accomplished previously.

To prevent the loss of an inboard trailing edge foreflap during flight, and subsequent damage to the airplane in flight, accomplish the following:

Inspections (Bushings Not Yet Replaced)

(a) For airplanes having line numbers 1 through 316 on which the bushings have not been replaced prior to the effective date of this AD: Prior to the accumulation of 5,000 total flight cycles, or within 1,200 flight cycles after the effective date of this AD, whichever occurs later, perform a detailed inspection for migration of the bushings of the clevis on the inboard and outboard sequence carriages, flap tracks 3, 4, 5, and 6 of the inboard trailing edge foreflap. Do the inspection in accordance with Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; or Revision 6, dated January 16, 2003.

Note 1: For the purposes of this AD, a detailed inspection is defined as: "An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required."

(1) For each nondiscrepant bushing (with no migration): Repeat the inspection of that bushing at intervals not to exceed 1,200 flight cycles, until the terminating action required by paragraph (c) of this AD has been accomplished.

(2) For any discrepant bushing: Prior to further flight, replace the discrepant bushing with a new bushing and, if applicable, replace the bushing marker with a new marker, in accordance with Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; or Revision 6, dated January 16, 2003. No further action is required by this AD for that bushing only.

Note 2: It is not necessary to replace the marker if the marker installed on the airplane shows the correct bushing orientation (flange reversed, as shown in NEW CONFIGURATION, Figure 1, of Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; and Revision 6, dated January 16, 2003).

Inspection (Bushings Replaced)

(b) For airplanes having line numbers 1 through 316 inclusive on which the bushings have been replaced before the effective date of this AD in accordance with any instructions other than Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; or Revision 6, dated January 16, 2003; and for airplanes having line numbers 317 through 1009 inclusive, except line numbers 968, 999, 1004, and 1007: Prior to the accumulation of 5,000 total flight cycles, or within 1,200 flight cycles after the effective date of this AD, whichever occurs later, perform a one-time detailed inspection of the orientation of the bushings of the clevis on the inboard and outboard sequence carriages, flap tracks 3, 4, 5, and 6 of the inboard trailing edge foreflap. Do the actions in accordance with Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; or Revision 6, dated January 16, 2003. For airplanes having line numbers 1 through 316 inclusive on which a bushing has been replaced before the effective date of this AD in accordance with Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; or Revision 6, dated January 16, 2003: This AD requires no further action for that bushing only.

(1) For each bushing that is oriented correctly: Within 5 years after the effective date of this AD, replace the markers installed on the airplane with new markers, as applicable, in accordance with Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; or Revision 6, dated January 16, 2003.

Note 3: It is not necessary to replace the marker if the marker installed on the airplane shows the correct bushing orientation (flange reversed, as shown in NEW CONFIGURATION, Figure 1, of Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; and Revision 6, dated January 16, 2003).

(2) For any bushing that is oriented incorrectly: Prior to further flight, perform a detailed inspection of the bushing for bushing migration, in accordance with Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; or Revision 6, dated January 16, 2003.

(i) For each nondiscrepant bushing (with no migration): Repeat the inspection specified in paragraph (b)(2) of this AD at intervals not to exceed 1,200 flight cycles, until the terminating action required by paragraph (c) of this AD has been accomplished.

(ii) For any discrepant bushing: Prior to further flight, replace the discrepant bushing with a new bushing and, if applicable, replace the bushing marker with a new marker, in accordance with the service bulletin. No further action is required by this paragraph for that bushing only.

Note 4: It is not necessary to replace the marker if the marker installed on the airplane shows the correct bushing orientation (flange reversed, as shown in NEW CONFIGURATION, Figure 1, of Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; and Revision 6, dated January 16, 2003).

Terminating Action

(c) Within 5 years after the effective date of this AD: Replace the existing bushings of the clevis on the inboard and outboard sequence carriages, in flap tracks 3, 4, 5, and 6 of the inboard trailing edge foreflap. Do the actions in accordance with Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; or Revision 6, dated January 16, 2003. Replacement of the bushings in accordance with Boeing Service Bulletin 747-57-2166, Revision 4, dated December 6, 1990, or previous revision, is acceptable, provided the bushings are inspected as required by paragraph (b) of this AD and found to be in the correct orientation. The initial bushing installation by the manufacturer for airplanes having line numbers 317 and subsequent is also acceptable, provided the bushings are inspected at the specified time and as required by paragraph (b) of this AD and found to

be in the correct orientation. Also, as applicable, before further flight, replace the markers installed on the airplane with new markers in accordance with Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; or Revision 6, dated January 16, 2003. Replacement of all bushings, and markers as applicable, terminates the requirements of this AD.

Note 5: It is not necessary to replace the marker if the marker installed on the airplane shows the correct bushing orientation (flange reversed, as shown in NEW CONFIGURATION, Figure 1, of Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; and Revision 6, dated January 16, 2003).

Part Installation

(d) As of the effective date of this AD, no person shall install on any airplane a carriage and toggle assembly unless the requirements of paragraph (c) of this AD have been accomplished for that assembly.

Alternative Methods of Compliance

(e) In accordance with 14 CFR 39.19, the Manager, Seattle ACO, is authorized to approve alternative methods of compliance for this AD.

Incorporation by Reference

(f) Unless otherwise specified in this AD, the actions shall be done in accordance with Boeing Service Bulletin 747-57-2166, Revision 5, dated May 13, 1993; or Boeing Service Bulletin 747-57-2166, Revision 6, dated January 16, 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

(g) This amendment becomes effective on September 12, 2003.

Issued in Renton, Washington, on July 31, 2003.
Ali Bahrami,
Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.
[FR Doc. 03-19983 Filed 8-7-03; 8:45 am]
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