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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2005-20917; Directorate Identifier 2004-NM-85-AD; Amendment 39-14312; AD 2005-20-18]**

**RIN 2120-AA64**

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

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is superseding two existing airworthiness directives (AD), which apply to certain Boeing transport category airplanes. One AD currently requires doing certain inspections to detect cracks and corrosion around the lower bearing of the actuator attach fittings of the inboard and outboard flaps; repairing if necessary; and either overhauling the fittings or replacing them, which ends certain repetitive inspections. The other AD currently requires certain other inspections to detect discrepancies of the actuator attach fittings of the flaps, and follow-on and corrective actions if necessary, which ends the repetitive inspections of the first AD. For certain airplanes, this AD requires new inspections for discrepancies of the actuator attach fittings of the flaps, and follow-on and corrective actions if necessary, which ends the repetitive inspections of both existing ADs. For all airplanes, this AD requires repetitive overhaul/replacements of the actuator attach fittings of both the inboard and outboard flaps. This AD results from reports of cracks of the actuator attach fittings of the trailing edge flaps. We are issuing this AD to prevent cracking and other damage of the actuator attach fittings of the trailing edge flaps, which could result in abnormal operation or retraction of a trailing edge flap, and possible loss of controllability of the airplane.

**DATES:** This AD becomes effective November 8, 2005.

On May 8, 2003 (68 FR 19937, April 23, 2003), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002.

On August 3, 2001 (66 FR 34526, June 29, 2001), the Director of the Federal Register approved the incorporation by reference of Boeing Service Bulletin 747-57A2310, Revision 1, dated November 23, 1999; and Boeing Service Bulletin 747-57A2310, Revision 2, dated February 22, 2001.

**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 supersedes AD 2001-13-12, amendment 39-12292 (66 FR 34526, June 29, 2001), and AD 2003-08-11, amendment 39-13124 (68 FR 19937, April 23, 2003). AD 2001-13-12 applies to certain Boeing Model 747 series airplanes. AD 2003-08-11 applies to all Boeing Model 747-100, -200B, -200F, -200C, -100B, -300, -100B SUD, -400, -400D, and -400F series airplanes; and Model 747SR series airplanes. That NPRM was published in the Federal Register on April 13, 2005 (70 FR 19345). That NPRM proposed to continue to require the existing requirements of ADs 2001-13-12, and 2003-08-11. For certain airplanes, that NPRM also proposed to require new inspections for discrepancies of the actuator attach fittings of the flaps, and follow-on and corrective actions if necessary, which ends the repetitive inspections of both existing ADs. For all airplanes, that NPRM also proposed to require repetitive overhaul/replacements of the fittings of both the inboard and outboard flaps.

### **Comments**

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

### **Request for Clarification**

One commenter, the airplane manufacturer, requests that paragraph (r) of the NPRM be revised to apply to "fittings" instead of "airplanes." The commenter states that some operators may have complied with paragraph (o)(2) of the NPRM for some fittings, but not others. The commenter also states that the proposed actions in paragraph (r) are not necessary if the proposed actions in paragraph (o)(2) have been done. The commenter also requests that paragraph (r) be revised to clarify this point.

We partially agree. We agree with the commenter to refer to "fittings" rather than "airplanes" in paragraph (r) and have revised the final rule accordingly. However, we do not agree that paragraph (r) needs to be clarified regarding paragraph (o)(2). Although the actions specified in paragraph (o)(2) (refers to Parts 2 through 5 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002) are identical to those in paragraphs (r) and (s), the affected fittings and compliance times in those paragraphs are different.

Paragraph (r) states, "For [fittings] on which \* \* \* the inspections required by [paragraph] (m), (n), or (o)(1) of this AD are being done as of the effective date of this AD." The actions specified in paragraphs (m), (n), and (o)(1) are done in accordance with Part 1 of the Accomplishment Instructions of the referenced service bulletin. Paragraph (r) does not apply to fittings on which the actions specified in paragraph (o)(2) (i.e., Parts 2 through 5) are being done. Operators doing the actions specified in paragraph (o)(2) instead of the actions specified in paragraph (o)(1), must continue to do those actions at the specified times in paragraph (o)(2). Operators doing the actions in paragraph (o)(1) of this AD as of the effective date of this AD, must do the requirements of paragraph (r). We have made no change to the final rule in this regard.

The same commenter notes that paragraph (t) of the NPRM states, "at the applicable time specified in Figures 1 and 2 of the service bulletin." The commenter requests that the reference to Figure 2 in that paragraph be deleted, because Figure 2 does not specify compliance times.

We agree and have revised paragraph (t) accordingly.

### **Explanation of Editorial Changes**

Based on the comment above that fittings may be overhauled at different times, we have clarified the terminating action in paragraphs (j)(1) and (j)(2) of the NPRM. Overhauling an actuator attach fitting on an applicable flap constitutes terminating action for the repetitive inspection requirements for that fitting. The remaining fittings that are not being repetitively overhauled must be repetitively inspected. Therefore, we have revised paragraphs (j)(1) and (j)(2) of this AD accordingly.

Paragraph (r) of the NPRM applies to fittings on which the repetitive borescopic, detailed, "or" ultrasonic (as applicable) inspections required by paragraph (m), (n), or (o)(1) of this AD are being done as of the effective date of this AD. Paragraph (m) of the NPRM proposed to require both borescopic and detailed inspections. Paragraph (n) of the NPRM proposed to require borescopic, detailed, and ultrasonic inspections. Paragraph (o)(1) of the NPRM proposed to require applicable inspections specified in paragraphs (m) and (n). It was our intent that paragraph (r) apply to fittings on which the repetitive borescopic, detailed, "and" ultrasonic (as applicable) inspections required by paragraph (m), (n), or (o)(1) of this AD are being done as of the effective date of this AD. Therefore, we have revised paragraph (r) accordingly.

Boeing Commercial Airplanes has received a Delegation Option Authorization (DOA). We have revised this AD to delegate the authority to approve an alternative method of compliance for any repair required by this AD to an Authorized Representative for the Boeing Commercial Airplanes DOA rather than a Designated Engineering Representative.

Although paragraph (s) of the NPRM states, "except as provided by paragraph (u) of this AD," paragraph (u) does not refer to paragraph (s). We have corrected this mistake in this AD.

Although paragraph (t) of the NPRM states, "except as provided by paragraph (v) of this AD," paragraph (v) incorrectly refers to paragraph (s) rather than paragraph (t). In addition, paragraph (t) states, "If any discrepancy is detected during any inspection required by paragraph (r) \* \* \*" The requirements of paragraph (t) also are required if any discrepancy is detected during an inspection required by paragraph (s), as specified in Boeing Alert Service Bulletin 747-57A2316, described in the preamble of the NPRM. We have corrected these mistakes in this AD.

### **Clarification of Alternative Method of Compliance (AMOC) Paragraph**

We have added a new paragraph (y)(2) and renumbered subsequent paragraphs 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 comment 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**

This AD will affect about 1,000 Model 747-100, -200B, -200F, -200C, -100B, -300, -100B SUD, -400, -400D, and -400F series airplanes; and Model 747SR series airplanes worldwide. There are about 181 airplanes on the U.S. registry. The average labor rate is \$65 per hour. The following two tables provide the estimated costs for U.S. operators to comply with this AD.

**TABLE 1.—ESTIMATED COSTS**

<b>Action</b>	<b>Work hours</b>	<b>Parts</b>	<b>Cost per airplane</b>	<b>Fleet cost</b>
Inspections (required by AD 2001–13–12)	2	None	\$130, per inspection cycle.	\$23,530, per inspection cycle.
Inspections specified in Part 1 of the Accomplishment Instruction (AI) of the referenced service bulletin (required by AD 2003–08–11).	2	None	\$130 per inspection cycle.	\$23,530 per inspection cycle.
Inspections specified in Part 2 of the AI of the referenced service bulletin (new proposed actions).	5	None	\$325 per inspection cycle.	\$58,825 per inspection cycle.

**TABLE 2.—ESTIMATED COSTS**

<b>Action</b>	<b>Work hours</b>	<b>Parts</b>	<b>Cost per airplane</b>
Overhaul(s) as an alternative to the replacement.	37	None	\$2,405.
Replacement(s) as an alternative to the overhaul.	4	\$6,623 (for the four actuator attach fittings on the outboard flaps) and \$7,566 (for the four actuator attach fittings on the inboard flaps).	\$6,883 (for the four actuator attach fittings on the outboard flaps) and \$7,826 (for the four actuator attach fittings on the inboard flaps), per replacement cycle.

**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.s

## **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 removing amendments 39-12292 (66 FR 34526, June 29, 2001) and 39-13124 (68 FR 19937, April 23, 2003) and 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/](http://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).

**2005-20-18 Boeing:** Amendment 39-14312. Docket No. FAA-2005-20917; Directorate Identifier 2004-NM-85-AD.

## Effective Date

- (a) This AD becomes effective November 8, 2005.

## Affected ADs

- (b) This AD supersedes AD 2001-13-12, amendment 39-12292; and AD 2003-08-11, amendment 39-13124.

## Applicability

- (c) This AD applies to all Boeing Model 747-100, -200B, -200F, -200C, -100B, -300, -100B SUD, -400, -400D, and -400F series airplanes; and Model 747SR series airplanes; certificated in any category.

## Unsafe Condition

- (d) This AD results from reports of cracks of the actuator attach fittings of the trailing edge flaps. We are issuing this AD to prevent cracking and other damage of the actuator attach fittings of the trailing edge flaps, which could result in abnormal operation or retraction of a trailing edge flap, and possible loss of controllability of the airplane.

## 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.

## Requirements of AD 2001-13-12

## Affected Airplanes

- (f) For Boeing Model 747 series airplanes, as listed in Boeing Service Bulletin 747-57A2310, Revision 2, dated February 22, 2001, do the actions required by paragraphs (g) through (l) of this AD, as applicable.

## **Actuator Attach Fittings That Have Not Been Overhauled or Replaced**

(g) For actuator attach fittings on the outboard flaps that have not been overhauled in accordance with revisions of Boeing 747 Overhaul Manual (OHM) 57-52-55 dated prior to June 1, 1999, or replaced with a new fitting, prior to August 3, 2001 (the effective date of AD 2001-13-12); and for actuator attach fittings on the inboard flap actuators that have not been overhauled in accordance with revisions of OHM 57-52-35, dated prior to June 1, 1999, or replaced with a new fitting, prior to August 3, 2001: Accomplish the actions in paragraph (i), (j), or (k) of this AD at the later of the times specified in paragraphs (g)(1) and (g)(2) of this AD.

(1) Prior to the accumulation of 8 years since date of manufacture or 8,000 total flight cycles, whichever occurs first.

(2) Within 6 months after August 3, 2001.

## **Actuator Attach Fittings That Have Been Overhauled or Replaced**

(h) For actuator attach fittings on the outboard flaps that have been overhauled in accordance with revisions of OHM 57-52-55 dated prior to June 1, 1999, or replaced with a new fitting, prior to August 3, 2001; and for actuator attach fittings on the inboard flap actuators that have been overhauled in accordance with revisions of OHM 57-52-35 dated prior to June 1, 1999, or replaced with a new fitting, prior to August 3, 2001: Accomplish the actions in paragraph (i), (j), or (k) of this AD at the later of the times specified in paragraphs (h)(1) and (h)(2) of this AD.

(1) Within 8 years or 8,000 total flight cycles after the attach fitting was overhauled or replaced, whichever occurs first.

(2) Within 6 months after August 3, 2001.

## **Inspections and Corrective Action**

(i) Perform a detailed inspection to detect corrosion around the lower bearing journal on the actuator attach fittings on the inboard and outboard flaps, and perform an ultrasonic inspection to detect cracks around the lower bearing journal of the actuator attach fittings on the outboard flaps, in accordance with Boeing Service Bulletin 747-57A2310, Revision 1, dated November 23, 1999; or Revision 2, dated February 22, 2001.

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

**Note 2:** Inspections, overhauls, and replacements accomplished in accordance with Boeing Alert Service Bulletin 747-57A2310, dated June 17, 1999, are acceptable for compliance with the requirements of paragraph (i) of this AD.

(1) If no corrosion or cracks are detected, repeat the inspections required by paragraph (i) of this AD at intervals not to exceed 18 months. Within 5 years after the initial inspections required by paragraph (i) of this AD, accomplish the actions specified in paragraph (j) or (k) of this AD.

(2) If any corrosion is detected, prior to further flight, remove the corrosion by accomplishing the actions of either paragraph (i)(2)(i) or (i)(2)(ii) of this AD.

(i) If corrosion is within the limits of the Boeing 747 OHM: Prior to further flight, accomplish the actions specified in paragraph (j) or (k) of this AD.

(ii) If corrosion is not within the limits of the Boeing 747 OHM: Prior to further flight, accomplish the actions specified in paragraph (k) or (l) of this AD.

(3) If any crack is detected: Prior to further flight, accomplish the actions specified in paragraph (k) or (l) of this AD.

## **Overhaul**

(j) Do the actions as specified in paragraphs (j)(1) and (j)(2) of this AD in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-57A2310, Revision 1, dated November 23, 1999; or Revision 2, dated February 22, 2001.

(1) Overhaul the actuator attach fittings on the outboard flaps. Repeat the overhaul of the fittings on the outboard flaps as specified in Part 2 of the Work Instructions of the service bulletin thereafter at intervals not to exceed 8 years or 8,000 flight cycles, whichever occurs first. As of the effective date of this AD, the repetitive overhauls must be done in accordance with Part 5 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002, at intervals not to exceed 8 years since last overhaul. Overhauling an actuator attach fitting on an outboard flap constitutes terminating action for the repetitive inspection requirements of paragraph (i)(1) of this AD for that fitting.

(2) Overhaul the actuator attach fittings on the inboard flaps. Overhauling an actuator attach fitting on an inboard flap constitutes terminating action for the requirements of paragraphs (g) through (l) of this AD for that fitting.

## **Replacement**

(k) Replace the actuator attach fittings on the inboard and outboard flaps in accordance with paragraph (k)(1) or (k)(2) of this AD.

(1) Replace the actuator attach fittings on the inboard and outboard flaps with new actuator attach fittings in accordance with "Part 3–Replacement" of Boeing Service Bulletin 747-57A2310, Revision 1, dated November 23, 1999; or Revision 2, dated February 22, 2001. Accomplishment of this replacement constitutes terminating action for the repetitive inspections required by paragraph (i) of this AD for the replaced fitting. Within 8 years or 8,000 flight cycles following accomplishment of the replacement, whichever occurs first, repeat this replacement or accomplish the overhaul specified in paragraph (j) of this AD. As of the effective date of this AD, the repetitive replacements must be done in accordance with Part 5 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002, at intervals not to exceed 8 years since last replacement.

(2) Replace the actuator attach fittings on the inboard and outboard flaps with improved actuator attach fittings in accordance with "Part 4–Terminating Action" of Boeing Service Bulletin 747-57A2310, Revision 2, dated February 22, 2001. If accomplished, this replacement with improved fittings terminates the requirements of paragraphs (g) through (l) of this AD for the replaced fitting.

**Note 3:** Replacement of the actuator attach fittings on the inboard flaps with fittings that have been overhauled before the effective date of this AD, in accordance with Boeing OHM 57-52-35, Temporary Revision 57-8, dated June 10, 1999; Temporary Revision 57-10, dated May 8, 2000; or Full Revision 57-10, dated July 1, 2000; constitutes terminating action for the requirements of paragraphs (g) through (l) of this AD for the actuator attach fittings on the inboard flaps.

## **Repair**

(l) During any inspection done in accordance with paragraph (i) of this AD, if corrosion is found that is outside the limits specified in the Boeing 747 OHM, or if any crack is detected: In lieu of

replacement of the actuator attach fittings in accordance with paragraph (k) of this AD, repair the actuator attach fittings on the inboard and outboard flaps in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA; or using a method approved in accordance with paragraph (y)(3) of this AD.

## **Requirements of AD 2003-08-11**

### **Inspection: Inboard Flap Actuator Attach Fittings**

(m) Perform borescopic and detailed inspections to detect discrepancies of the actuator attach fittings of the inboard flap , in accordance with Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002. Discrepancies include corrosion, pitting, and damaged or missing cadmium plating. Do the inspection at the applicable time specified in paragraph (m)(1) or (m)(2) of this AD.

(1) If the age of the fittings can be determined: Inspect within 14 years since the fittings were new or last overhauled, or within 90 days after May 8, 2003 (the effective date of AD 2003-08-11), whichever occurs later.

(2) If the age of the fittings cannot be determined: Inspect within 90 days after May 8, 2003.

**Note 4:** The exceptions specified in flag note 4 of Figure 1 of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002, apply to the requirements of paragraphs (m) and (n) of this AD.

### **Inspection: Outboard Flap Actuator Attach Fittings**

(n) Perform borescopic, detailed, and ultrasonic inspections to detect discrepancies of the actuator attach fittings of the outboard flap , in accordance with Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002. Discrepancies include surface corrosion, pitting, damaged or missing cadmium plating, and cracks. Do the inspection at the applicable time specified in paragraph (n)(1) or (n)(2) of this AD.

(1) If the age of the fittings can be determined: Inspect within 8 years since the fittings were new or last overhauled, or within 90 days after May 8, 2003, whichever occurs later.

(2) If the age of the fittings cannot be determined: Inspect within 90 days after May 8, 2003.

### **Follow-on Actions: No Discrepancies Found**

(o) If no discrepancy is found during any inspection required by paragraph (m) through (p) of this AD: Do the actions specified by either paragraph (o)(1) or paragraph (o)(2) of this AD.

(1) Repeat the applicable inspections specified in paragraphs (m) and (n) of this AD at intervals not to exceed 9 months until the actions specified in paragraph (o)(2) of this AD have been accomplished.

(2) Perform a detailed inspection of the fitting to detect cracks, corrosion, damaged cadmium plating, or bushing migration, in accordance with and at the time specified in Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002. Do the follow-on actions in accordance with Parts 3, 4, and 5 of the Accomplishment Instructions of the service bulletin at the times specified in Figure 1 of the service bulletin, as applicable. Accomplishment of these actions terminates the initial and repetitive inspection requirements of paragraphs (m), (n), and (o)(1) of this AD.

**Note 5:** The exceptions specified in flag note 2 of Figure 1 of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002, apply to those requirements of paragraphs (o)(2) and (p) of this AD that are specified in Part 2 of the service bulletin.

**Corrective/Follow-on Actions: Discrepancies Found**

(p) If any discrepancy is found during any inspection required by paragraph (m), (n), or (o) of this AD: Perform applicable corrective and follow-on actions at the time specified and in accordance with Figure 1 of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002. Before further flight: Replace any discrepant fitting in accordance with Part 5 of the Accomplishment Instructions of the service bulletin, and accomplish the follow-on actions for the other fittings common to that flap in accordance with Part 2 of the Accomplishment Instructions of the service bulletin. Replacement of a fitting terminates the initial and repetitive inspections—specified in paragraphs (m), (n), and (o) of this AD—for that fitting only.

**Terminating Action for Certain Requirements**

(q) Accomplishment of the actions required by paragraphs (m) and (n) of this AD ends the requirements of paragraphs (g) through (k) of this AD, except for the repetitive overhauls and repetitive replacements required by paragraphs (j)(1) and (k)(1) of this AD, respectively.

**New Actions Required by This AD**

**Inspections: Actuator Attach Fittings of the Inboard and Outboard Flaps**

(r) For fittings on which the repetitive borescopic, detailed, and ultrasonic (as applicable) inspections required by paragraph (m), (n), or (o)(1) of this AD are being done as of the effective date of this AD: Inspect as specified in Table 1 of this AD. Accomplishing these actions ends the initial and repetitive inspections required by paragraphs (m), (n), and (o)(1) of this AD.

**TABLE 1.—INSPECTIONS OF ACTUATOR ATTACH FITTINGS**

<b>Requirements</b>	<b>Description</b>
(1) Compliance time:	Except as provided by paragraph (u) of this AD, at the applicable time specified in Figure 1 of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002.
(2) Area to inspect:	The actuator attach fittings of the inboard and outboard flaps.
(3) Type of inspection:	Detailed inspection (inboard and outboard flaps) and ultrasonic inspection (outboard flaps only).
(4) Discrepancies to detect:	Surface corrosion, pitting, cracks, migrated or rotated bushings, and damaged or missing cadmium plating.
(5) In accordance with:	Part 2 of the Work Instructions of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002.

**Follow-on Actions: No Discrepancies Detected**

(s) If no discrepancy is detected during any inspection required by paragraph (r) of this AD: Do the follow-on actions in accordance with Parts 3, 4, and 5, as applicable, of the Work Instructions of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002, at the applicable times specified in Figure 1 of the service bulletin, except as provided by paragraph (u) of this AD.

## Overhaul/Replacement and Follow-on/Corrective Actions: Discrepancies Detected

(t) If any discrepancy is detected during any inspection required by paragraph (r) or (s) of this AD: Do the actions specified in Table 2 of this AD at the applicable times specified in Figure 1 of the service bulletin, except as provided by paragraph (v) of this AD.

**TABLE 2.—DISCREPANCIES FOUND**

<b>Requirements</b>	<b>In accordance with Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002—</b>
(1) Overhaul or replace discrepant fitting with new fitting	Part 5 of Work Instructions.
(2) Do the follow-on and corrective actions for the other fitting common to that flap, except as specified in flag note 2 in Figure 1 of the service bulletin.	Parts 2 and 5 of Work Instructions, as applicable.

### Compliance Time Requirements

(u) For the requirements of paragraphs (r) and (s) of this AD: Where Figure 1 of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002, states a compliance time "after the original issue date of the service bulletin," this AD requires compliance within the applicable compliance time after the effective date of this AD.

(v) For the requirements of paragraph (t) of this AD: Where Figure 1 of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002, specifies to repeat the overhaul or replacement "every 8 years," this AD requires compliance at intervals not to exceed 8 years.

### Repetitive Overhaul or Replacement

(w) Except as provided in paragraph (x) of this AD, at the applicable time specified in paragraph (w)(1) or (w)(2) of this AD, overhaul the actuator attach fittings on the outboard and inboard flaps or replace the actuator attach fittings with new or overhauled fittings, in accordance with Part 5 of the Work Instructions of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002. Repeat the overhaul or replacement thereafter at intervals not to exceed 8 years.

(1) If the age of the fittings can be determined: Overhaul or replace within 8 years since the fittings were new or last overhauled, or within 2 years after the effective date of this AD, whichever occurs later.

(2) If the age of the fittings cannot be determined: Assume that the fittings are more than 14 years old, and overhaul or replace within 2 years after the effective date of this AD.

(x) Accomplishing the repetitive overhauls required by paragraph (j)(1) or repetitive replacements required by paragraph (k)(1) of this AD is acceptable for compliance with the requirements of paragraph (w) of this AD.

### Alternative Methods of Compliance (AMOCs)

(y)(1) The Manager, Seattle 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 § 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.

(4) AMOCs approved previously in accordance with AD 2001-13-12 are approved as AMOCs with the actions required by paragraphs (g) through (l) of this AD, as applicable. However, AMOCs approved previously are not considered terminating action for the repetitive overhauls or replacements requirements of this AD.

(5) AMOCs approved previously in accordance with AD 2003-08-11 are approved as AMOCs with the actions required by paragraphs (m) through (p) of this AD, as applicable.

### **Material Incorporated by Reference**

(z) You must use the service bulletin in Table 3 of this AD to perform the actions that are required by this AD, unless the AD specifies otherwise.

(1) On May 8, 2003 (68 FR 19937, April 23, 2003), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-57A2316, dated December 19, 2002.

(2) On August 3, 2001 (66 FR 34526, June 29, 2001), the Director of the Federal Register approved the incorporation by reference of Boeing Service Bulletin 747-57A2310, Revision 1, dated November 23, 1999; and Boeing Service Bulletin 747-57A2310, Revision 2, dated February 22, 2001.

(3) Contact Boeing Commercial Airplanes, Long Beach Division, 3855 Lakewood Boulevard, Long Beach, California 90846, Attention: Data and Service Management, Dept. C1-L5A (D800-0024), 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](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

**TABLE 3.—MATERIAL INCORPORATED BY REFERENCE**

<b>Service bulletin</b>	<b>Revision level</b>	<b>Date</b>
Boeing Alert Service Bulletin 747-57A2316	Original	December 19, 2002.
Boeing Service Bulletin 747-57A2310	1	November 23, 1999.
Boeing Service Bulletin 747-57A2310	2	February 22, 2001.

Issued in Renton, Washington, on September 26, 2005.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

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