

[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [66 FR 34526 6/29/2001]

[Docket No. 99-NM-313-AD; Amendment 39-12292; AD 2001-13-12]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747 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 series airplanes. This AD requires repetitive inspections to detect cracks and corrosion around the lower bearing of the actuator attach fittings of the inboard and outboard flaps. This AD also requires repetitive overhauls for certain actuator attach fittings or repetitive replacement of the fittings with new fittings, as applicable, which terminates the repetitive inspections. This AD also provides for replacement of actuator attach fittings with improved fittings, which terminates all requirements of this AD. This amendment is prompted by reports of cracks on the lower bearing journal of the inboard actuator attach fittings of the outboard trailing edge flaps due to stress corrosion. The actions specified by this AD are intended to detect and correct cracking on the actuator attach fittings of the trailing edge flaps, which could result in abnormal operation or retraction of a trailing edge flap, and consequent reduced controllability of the airplane.

DATES: Effective August 3, 2001.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of August 3, 2001.

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: Tamara L. Anderson, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2771; fax (425) 227-1181.

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 all Boeing Model 747-100, -200, -300, -400, and 747SR series airplanes was published in the Federal Register on April 24, 2000 (65 FR 21675). That action proposed to require repetitive inspections to detect cracks and corrosion around the lower bearing of the actuator attach fittings of the inboard and outboard flaps. That action also proposed to require repetitive overhauls for certain attach fittings or repetitive replacement of the attach fittings with new attach fittings, as applicable, which would constitute terminating action for certain repetitive actions.

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.

Support for the Proposal

One commenter supports the proposed rule.

Limit Applicability of AD

One commenter, the airplane manufacturer, requests that the FAA limit the applicability of the proposed rule to airplanes having line numbers up to and including 1265. The commenter states that new, improved actuator attach fittings will be installed during production on airplanes starting at line number 1266. The commenter explains that the new, improved actuator attach fittings in certain positions (i.e., actuator attach fittings number 2 and 7) have an increased cross-sectional area that reduces stress levels and, consequently, the possibility of stress corrosion cracking. Attach fittings in all other locations will have increased bushing interference, and BMS 5-26 sealant will be applied to the new fittings to prevent general corrosion.

The FAA concurs with the intent of the commenter's request to limit the applicability of this AD. However, since they submitted their comment, the airplane manufacturer has advised the FAA that new fittings have been incorporated on airplanes starting with line number 1264. This coincides with the effectivity listing of a new service bulletin related to this AD, Boeing Service Bulletin 747-57A2310, Revision 2, dated February 22, 2001 (which is described in the next section of this final rule). Therefore, the FAA has revised and clarified the applicability of this AD to apply only to Model 747 series airplanes listed in Boeing Service Bulletin 747-57A2310, Revision 2. (Operators may note that, while the applicability of this AD has been reduced, the estimated number of affected airplanes has been increased in the "Cost Impact" section of the preamble. The new estimate includes airplanes delivered after the preparation of the proposed rule.)

Reference New Terminating Action

One commenter notes that, in the preamble of the proposed AD, the FAA identifies the proposed AD as interim action, and states that, once a modification is developed, approved, and available, the FAA may consider additional rulemaking. The commenter states that it is very interested in this terminating modification. The commenter requests that, if release of the modification is imminent, the FAA delay release of this AD until the airplane manufacturer has developed the terminating modification. If the release is not imminent, the commenter requests that the FAA make the modification available as an alternative method of compliance (AMOC) to this AD or issue a superseding AD to include the terminating action as soon as possible.

The FAA partially concurs with the commenter's request. The FAA does not agree that issuance of the final rule should intentionally be delayed pending development of a terminating modification. The commenter provides no technical justification for such a delay.

However, since the issuance of the proposed AD, the FAA has reviewed and approved Boeing Service Bulletin 747-57A2310, Revision 2. (The proposed AD references Boeing Service Bulletin 747-57A2310, Revision 1, dated November 23, 1999, as an appropriate source of service information for certain proposed actions.) Among other actions, Revision 2 of the service bulletin includes procedures for a new terminating action. The new terminating action involves rework of the numbers 1, 3, 4, 5, 6, and 8 actuator attach fittings on both the inboard and outboard flaps, or replacement of the attach fittings with improved attach fittings; and replacement of the number 2 and 7 attach fittings of the trailing edge flap actuators with new, improved attach fittings (of a new design).

The FAA has determined that, if accomplished, this terminating action would adequately address the unsafe condition. Therefore, the FAA has added subparagraphs to paragraph (e) of this final rule, including paragraph (e)(2) which provides the terminating action specified in Revision 2 of the service bulletin as an option that ends the requirements of this AD. Additionally, the FAA finds that Revision 2 is also an acceptable source of service information for the inspections required by paragraph (c) of this AD. Thus, paragraph (c) of this final rule has also been revised to reference Revision 2 of the service bulletin, in addition to Revision 1, as an acceptable source of service information.

Clarify References in Paragraphs (a) and (b)

One commenter requests that the FAA revise paragraphs (a) and (b) of the proposed rule to state, "Accomplish the actions in paragraphs (c), (d), or (e) of this AD * * *" instead of referring to paragraph (c) only. The commenter provides no justification for its request.

The FAA concurs with the commenter's request because adding references to paragraphs (d) and (e) will clarify the complete range of actions available to operators. Paragraphs (a) and (b) of this final rule have been revised accordingly.

Provide for Previous Overhaul of Actuator Fittings

One commenter requests that the FAA provide for actuator attach fittings of the inboard flaps that have been overhauled in accordance with a revision of Boeing 747 Overhaul Manual (OHM) 57-52-35 that is dated prior to June 10, 1999. The commenter specifically requests that, for airplanes previously overhauled, the FAA revise the compliance times in paragraph (a) of the proposed AD to 8 years or 8,000 flight cycles after overhaul of the actuator attach fittings for the inboard flaps. The commenter notes that this compliance time would agree with the compliance time for the actuator attach fittings of the outboard flaps, which are more critical.

The FAA concurs with the commenters request, and has revised paragraph (a) of this final rule to apply to:

- Actuator attach fittings on the outboard flaps that have NOT been overhauled in accordance with revisions of OHM 57-52-55 dated prior to June 1, 1999, or replaced with a new fitting; and
- Actuator attach fittings on the inboard flaps that have NOT been overhauled in accordance with revisions of OHM 57-52-35, dated prior to June 10, 1999, or replaced with a new fitting.

Also, the FAA has revised paragraph (b) of this final rule to apply to:

- 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; and
- Actuator attach fittings on the inboard flaps that HAVE been overhauled in accordance with revisions of OHM 57-52-35, dated prior to June 10, 1999, or replaced with a new fitting.

Allow Use of Later Revisions of OHM

One commenter requests that the FAA revise paragraph (d) of the proposed rule to specify overhaul of the actuator attach fittings for the flaps in accordance with Boeing OHM 57-52-55, Temporary Revision 57-7, dated June 1, 1999, or Temporary Revision 57-9, dated May 14, 2000; and 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. The commenter also requests that the FAA refer to Boeing OHM 57-52-35, Temporary Revision 57-10, or Full Revision 57-10, in Note 4 of the proposed rule. The commenter states that these later revisions of the OHM chapters describe the same actions as those revisions referred to in the proposed rule but provide additional repair information.

Similarly, a second commenter requests that the FAA revise paragraph (d) of the proposed rule to specify overhaul of the actuator attach fittings in accordance with Boeing OHM 57-52-55, Temporary Revision 57-7, dated June 1, 1999, or later, and Boeing OHM 57-52-35, Temporary Revision 57-8, dated June 10, 1999, or later. The commenter states that this would allow use of the latest revision of the OHM when overhauling the fittings.

The FAA partially concurs with the commenters' requests. The FAA has reviewed the specific revisions referenced by the first commenter and finds them acceptable. The FAA has also reviewed Boeing OHM 57-52-55, Full Revision 57-9, dated July 1, 2000, and finds it acceptable. However, rather than revising paragraph (d) to cite all of these revisions, the FAA finds that paragraph (d) of this AD may be revised to refer to the accomplishment instructions of Boeing Service Bulletin 747-57A2310, Revision 1, dated November 23, 1999, or Revision 2, dated February 22, 2001, as acceptable sources of service information for the accomplishment of the overhaul required by that paragraph. The FAA finds that this change will clarify the requirements of paragraph (d) of this AD,

and make it easier for operators to comply with that paragraph. The FAA has revised paragraph (d) accordingly. In addition, for the actuator attach fittings on the inboard flaps, the FAA has revised Note 4 of this AD to refer to specific OHM revisions referenced by the first commenter and reviewed and accepted by the FAA.

Allow Approval of Repairs By Designated Engineer Representative (DER)

One commenter requests that the FAA revise the "Alternative Methods of Compliance" paragraph--paragraph (f) in the proposed rule--to allow repairs of corrosion or cracking that is outside the limits specified in the OHM in accordance with a method approved by a Boeing DER, in lieu of requiring replacement of the actuator attach fittings before further flight. The commenter states that this allowance is necessary to prevent unnecessary delays or grounding of airplanes if operators find conditions outside the rework limits in the OHM.

The FAA partially concurs with the commenter's request. The FAA does not concur with the commenter's request to revise the "Alternative Methods of Compliance" paragraph to allow the Boeing DER to approve repairs. However, the FAA finds that a new paragraph may be added to provide for repair of actuator attach fittings, in lieu of replacement. Therefore, the FAA has added paragraph (f) to this final rule (and reordered subsequent paragraphs accordingly), to allow for repair of the actuator attach fittings on the inboard and outboard flaps in accordance with a method approved by the FAA or data approved by a Boeing Company DER who has been authorized to make such findings.

Revise Cost Impact Estimate

One commenter requests that the FAA revise the estimate of the cost impact in the proposed rule. The commenter states that the estimate of 5 work hours per airplane for overhaul of the actuator attach fittings is extremely low. The commenter notes that the procedures for each actuator attach fitting include cleaning, removing sleeves, machining, performing non-destructive tests, and manufacturing and installing new sleeves. The commenter also submits estimates from several vendors as well as their own estimate of 192 work hours per airplane.

The FAA partially concurs with the commenter's request. The FAA does not concur that the commenter's estimate of 192 work hours is appropriate for use in this AD. The cost impact information in AD actions includes only the "direct" costs of the specific actions required by the AD. The FAA recognizes that, in accomplishing the requirements of any AD, operators may incur "incidental" costs in addition to the "direct" costs. The cost analysis in AD rulemaking actions, however, typically does not include incidental costs, such as the time required to gain access and close up; planning time; or time necessitated by other administrative actions. Because incidental costs may vary significantly from operator to operator, they are almost impossible to calculate.

However, the FAA does concur that the estimated number of work hours can be adjusted somewhat. The estimate of 5 work hours included only the time necessary specifically for the overhaul, based on the data included in the manufacturer's service bulletin. The FAA finds it appropriate to include the estimate of work hours needed for removal, inspection, and re-installation, as well as overhaul, of the subject parts. Based on the data provided in the airplane manufacturer's service bulletin, the FAA estimates the number of work hours for these actions to be 37 work hours per airplane. Similarly, the FAA finds that the cost estimate for replacement of the actuators should include time for the inspection that is included in the procedures for the replacement. Thus, the number of work hours for the replacement has been increased from 2 to 4 work hours per airplane. The FAA has revised the cost impact estimate in this final rule accordingly.

Reduce Compliance Time for Actions on Attach Fittings on Outboard Flap

One commenter, an operator, requests that the FAA reduce the proposed initial compliance time for actions on the actuator attach fittings on the outboard flap that have been overhauled per OHM 57-52-55. The commenter requests a compliance time of 6 years or 6,000 flight cycles, whichever occurs first, after the attach fitting was overhauled, for the accomplishment of paragraph (c), (d), or (e) of this AD. The commenter states that the earlier of 6 years or 6,000 flight cycles is its "hard time" interval between overhauls.

The FAA does not concur. The compliance time of 8 years or 8,000 flight cycles, whichever occurs first, is based on when cracking of actuator attach fittings has been found, and the manufacturer's recommendation in the service bulletin. However, an operator may choose to accomplish the actions in this AD prior to the 8-year-or-8,000-flight-cycle threshold. 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 AD.

Cost Impact

There are approximately 1,111 Model 747 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 237 airplanes of U.S. registry will be affected by this AD.

It will take approximately 2 work hours per airplane to accomplish the required inspection, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of this inspection on U.S. operators is estimated to be \$28,440, or \$120 per airplane, per inspection cycle.

The overhaul of actuator attach fittings, which is offered as one alternative for compliance with this AD action, will take approximately 37 work hours per airplane to accomplish, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of this overhaul is estimated to be \$2,220 per airplane, per overhaul cycle.

In lieu of the overhaul, this AD provides for a replacement of actuator attach fittings, which would take approximately 4 work hours per airplane to accomplish, at an average labor rate of \$60 per work hour. Required parts will cost approximately \$6,623 (for the four attach fittings on the outboard flaps) and \$7,566 (for the four attach fittings on the inboard flaps). Based on these figures, the cost impact of this replacement is estimated to be \$14,429, per airplane, per replacement 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.

Should an operator elect to accomplish the optional replacement with improved attach fittings, which terminates the requirements of this AD, it would take approximately 16 work hours to accomplish, at an average labor rate of \$60 per work hour. The cost of required parts would be approximately \$15,322 per airplane. Based on these figures, the cost impact of the optional terminating action would be \$16,282 per airplane.

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.

Sec. 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

SUPERSEDED

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "av-info.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).

2001-13-12 Boeing: Amendment 39-12292. Docket 99-NM-313-AD.

Applicability: Model 747 series airplanes, as listed in Boeing Service Bulletin 747-57A2310, Revision 2, dated February 22, 2001; 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) 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 detect and correct cracking on the actuator attach fittings of the trailing edge flaps, which could result in abnormal operation or retraction of a trailing edge flap, and consequent reduced controllability of the airplane, accomplish the following:

Actuator Attach Fittings That Have Not Been Overhauled or Replaced

(a) 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 the effective date of this AD; 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 the effective date of this AD: Accomplish the actions in paragraph (c), (d), or (e) of this AD at the later of the times specified in paragraphs (a)(1) and (a)(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 the effective date of this AD.

Actuator Attach Fittings That Have Been Overhauled or Replaced

(b) 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 the effective date of this AD; 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 the effective date of this AD: Accomplish the actions in paragraph (c), (d), or (e) of this AD at the later of the times specified in paragraphs (b)(1) and (b)(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 the effective date of this AD.

Inspections and Corrective Action

(c) Perform a detailed visual 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 2: For the purposes of this AD, a detailed visual 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."

Note 3: Inspections 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 (c) of this AD.

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

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

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

Overhaul

(d) Overhaul the actuator attach fittings on the outboard flaps 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. Repeat the overhaul of actuators 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. Accomplishment of the overhaul of the actuator attach fittings on the outboard flaps constitutes terminating action for the repetitive inspection requirements of paragraph (c)(1) of this AD. Overhaul the actuator attach fittings on the inboard flaps 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. Accomplishment of the overhaul of the actuator attach fittings on the inboard flaps constitutes terminating action for the requirements of this AD for the actuator attach fittings on the inboard flaps.

Replacement

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

(1) Replace the actuator attach fittings on the inboard and outboard flaps with new 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 (c) 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 (d) of this AD.

(2) Replace the actuator attach fittings on the inboard and outboard flaps with improved 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 this AD for the replaced fitting.

Note 4: Replacement of the actuator attach fittings on the inboard flaps with fittings that have been overhauled 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 this AD for the actuator attach fittings on the inboard flaps.

Repair

(f) During any inspection done in accordance with paragraph (c) 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 (e) 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 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 by the Manager, Seattle ACO, as required by this paragraph, the Manager's approval letter must specifically reference this AD.

Alternative Methods of Compliance

(g) 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.

Note 5: 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) Except as provided by paragraph (f) of this AD, the actions shall be done in accordance with Boeing Service Bulletin 747-57A2310, Revision 1, dated November 23, 1999; or Boeing Service Bulletin 747-57A2310, Revision 2, dated February 22, 2001; as applicable. 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 August 3, 2001.

Issued in Renton, Washington, on June 20, 2001.

Kalene C. Yanamura, Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.