

 <b>適航指令發布單</b> <b>Airworthiness Directive Issuance Form</b>			
民航局 AD 編號 AD number	CAA-2015-12-007	發布日期 Date issued	2015/12/28
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	This AD applies to The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, and 747SR series airplanes, certificated in any category.		
主旨摘要	WINGS - Outboard Flap Inboard Actuator Attach Fittings - Inspection/ Rework/ Replacement		
民航局 CAA <input type="checkbox"/> 本國產品 Native products <input type="checkbox"/> 其他個案 Other	設計國民航主管機構 Original Authorities <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input checked="" type="checkbox"/> FAA  <input type="checkbox"/> EASA  <input type="checkbox"/> Brazil  <input type="checkbox"/> Transport Canada Civil Aviation  <input type="checkbox"/> DGAC             </div> <div style="width: 50%;"> <input type="checkbox"/> Germany LBA  <input type="checkbox"/> CAA-NL  <input type="checkbox"/> UK CAA  <input type="checkbox"/> Japan CAB  <input type="checkbox"/> CAA of Israel  <input type="checkbox"/> Other _____             </div> </div>		
	設計國 AD 編號 Original AD number	2015-25-03	
	1. 直接採用原 AD 之內容?(Is the original AD directly adopted?) <input checked="" type="checkbox"/> 是(Yes) <input type="checkbox"/> 否(No) _ a. 生效日期另訂為(Re-specify the effective date as) : _____ b. 執行時限另訂為(Re-specify the compliance time or period as) : _____ 2. 使用人是否需要將 AD 執行結果向民航局提出報告?(Do Users need to report the status of compliance to the CAA?) <input type="checkbox"/> 是(Yes) <input checked="" type="checkbox"/> 否(No)		
備註 Note	(i) This AD replaces FAA AD 2013-23-03 (CAA-2013-11-007). (ii) Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.		
註： 1. AD 內容後附。 2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。 3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail： <a href="mailto:adcaa@mail.caa.gov.tw">adcaa@mail.caa.gov.tw</a> Note： 1. The AD text is enclosed. 2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval. 3. For further information, please contact Civil Aeronautics Administration on Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail： <a href="mailto:adcaa@mail.caa.gov.tw">adcaa@mail.caa.gov.tw</a>			

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2015-0828; Directorate Identifier 2014-NM-146-AD; Amendment 39-18341; AD 2015-25-03]**

**RIN 2120-AA64**

#### **Airworthiness Directives; The Boeing Company Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** We are superseding Airworthiness Directive (AD) 2013-23-03, which applies to certain The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, and 747SR series airplanes. AD 2013-23-03 required a detailed inspection of certain attach fittings for a cylindrical defect, and replacement if necessary. For certain airplanes, this new AD requires new inspections of the inboard actuator attach fittings for machining defects, and overhaul or replacement if necessary. This new AD also limits the compliance time for doing the replacement for certain other airplanes. This AD was prompted by a report that a machining defect was also found on some of the actuator assemblies inspected during manufacture. This defect could lead to fatigue cracking and subsequent fracture. We are issuing this AD to detect and correct defective inboard actuator attach fittings which, combined with loss of the outboard actuator load path, could result in uncontrolled retraction of the outboard flap, damage to flight control systems, and consequent reduced controllability of the airplane.

**DATES:** This AD is effective January 28, 2016.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of January 28, 2016.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of November 29, 2013 (78 FR 68345, November 14, 2013).

**ADDRESSES:** For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call

425-227-1221. It is also available on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2015-0828.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-0828; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6428; fax: 425-917-6590; email: [nathan.p.weigand@faa.gov](mailto:nathan.p.weigand@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2013-23-03, Amendment 39-17658 (78 FR 68345, November 14, 2013). AD 2013-23-03 applied to certain The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, and 747SR series airplanes. The NPRM published in the Federal Register on April 15, 2015 (80 FR 20178). The NPRM was prompted by a report that a machining defect was also found on some of the actuator assemblies inspected during manufacture. The NPRM proposed to continue to require doing a detailed inspection of certain attach fittings for a cylindrical defect and replacing if necessary. This defect could lead to fatigue cracking and subsequent fracture. For certain airplanes, the NPRM proposed to mandate new inspections of the inboard actuator attach fittings for machining defects, and overhaul or replacement, if necessary. The NPRM also proposed to limit the compliance time for doing the replacement for certain other airplanes. We are issuing this AD to detect and correct defective inboard actuator attach fittings which, combined with loss of the outboard actuator load path, could result in uncontrolled retraction of the outboard flap, damage to flight control systems, and consequent reduced controllability of the airplane.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM (80 FR 20178, April 15, 2015) and the FAA's response to each comment.

### **Request to Add Terminating Action**

Boeing asked that we revise the NPRM (80 FR 20178, April 15, 2015) to specify that no additional action is required for a wall thickness of 0.140 inch or greater with no machining defect present, as also provided in Table 1 of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

We agree with the commenter that no additional action is required for a wall thickness of 0.140 inch or greater with no machining defect present. However, we do not agree with the request to revise the AD because if this condition exists, no action is required by this AD. Only actions that are

required to address the identified unsafe condition are specified in this AD. We have made no change to the AD in this regard.

### **Request to Revise Certain Requirements**

Paragraph (k) of the proposed AD (80 FR 20178, April 15, 2015) would have affected certain inboard actuator attach fittings that were inspected using Boeing Alert Service Bulletin 747-57A2443, dated September 12, 2013. United Airlines (UAL) requested that we remove this inspection criterion. UAL noted that there was no requirement to identify the actuators; therefore, operators would not be likely to positively identify them. UAL added that actuators are not likely to be tracked in position, and could have been moved between airplanes as a result of maintenance. UAL also stated that, in general, it would be better if the AD as a whole was worded not to depend on a record of previous inspection accomplishment, but rather on parts identification.

We acknowledge the commenter's concerns. We realize that paragraph (k) of this AD is predicated on the fact that operators kept records from the inspection specified in Boeing Alert Service Bulletin 747-57A2443, dated September 12, 2013. The intent of this AD is to either replace inboard actuator attach fittings having part number (P/N) 65B08564-7, or to inspect P/N 65B08564-7 for cylindrical defects, machining defects, and wall thickness, and accomplish applicable corrective actions. For that reason we have changed the introductory text of paragraph (k) of this AD so that it applies to airplanes on which doing the detailed inspection required by paragraph (h)(1) of this AD was done before the effective date of this AD and a cylindrical defect was found but a replacement was not done. We have also revised paragraph (k)(1) of this AD to require an ultrasonic inspection to determine the minimum thickness or mechanically determine the minimum thickness and to allow a records review for the inspections. This change ensures all inspections are done on airplanes with P/N 65B08564-7 that did not replace P/N 65B08564-7 after complying with AD 2013-23-03, Amendment 39-17658 (78 FR 68345, November 14, 2013).

To address airplanes on which inboard actuator attach fittings were replaced after complying with paragraph (h)(1) of AD 2013-23-03, Amendment 39-17658 (78 FR 68345, November 14, 2013), we have added new paragraph (m) to this AD, which specifies that for airplanes on which the detailed inspection required by paragraph (h)(1) of this AD is done before the effective date of this AD and the inboard actuator attach fitting has been replaced since that inspection, the inspection to determine the part number specified in paragraph (g) of this AD must be done within 90 days after the effective date of this AD, and the applicable actions specified in paragraphs (h), (i), and (j) of this AD must be done within the applicable times specified in paragraphs (h), (i), and (j) of this AD. We have also added a records review as an option if records are available that can conclusively determine the part number. We redesignated subsequent paragraphs accordingly.

### **Request to Add Inspection**

UAL stated that the actions specified in paragraph (l) of the proposed AD (80 FR 20178, April 15, 2015) would also depend on the record of findings from inspections made in accordance with AD 2013-23-03, Amendment 39-17658 (78 FR 68345, November 14, 2013). UAL added that there was no AD requirement to record these findings. UAL noted that operators conducted the inspections and took actions that were required. UAL stated that it would be better to call out a new inspection in the AD to determine which condition the actuator is in, and then take action as appropriate.

We acknowledge the commenter's concerns. We have revised paragraph (l) of this AD to specify that no actuator attach fitting having P/N 65B08564-7 may be installed on any airplane unless the inspection specified in paragraph (h)(1) of this AD is done prior to installation and the applicable actions specified in paragraphs (i) and (j) of this AD are done within the applicable times specified in paragraphs (i) and (j) of this AD. We have also added a records review as an option if records are available that can conclusively determine if the actions have been done.

## Change to Paragraph (h)(2) of the Proposed AD ((80 FR 20178, April 15, 2015)

We have revised paragraph (h)(2) of this AD by referring to Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014, as an appropriate source of service information for accomplishing the required actions.

### Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the change described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (80 FR 20178, April 15, 2015) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (80 FR 20178, April 15, 2015).

We also determined that this change will not increase the economic burden on any operator or increase the scope of this AD.

### Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 747-57A2443, dated September 12, 2013; and Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014. The service information describes procedures for new inspections of the inboard actuator attach fittings for machining defects, and overhaul or replacement, if necessary. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### Costs of Compliance

We estimate that this AD affects 184 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated Costs				
Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Retained inspection for part number in AD 2013-23-03, Amendment 39-17658 ( <a href="#">78 FR 68345</a> , November 14, 2013)	7 work-hours × \$85 per hour = \$595	\$0	\$595	\$109,480
New proposed inspections for machining defect	8 work-hours × \$85 per hour = \$680	0	680	\$125,120
Replacement for airplanes without any defect	6 work-hours × \$85 per hour = \$510	13,720	14,230	\$14,230 per airplane

We have received no definitive data that would enable us to provide a cost estimate for the on-condition actions specified in this AD.

## **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),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **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 FAA amends § 39.13 by removing Airworthiness Directive (AD) 2013-23-03, Amendment 39-17658 (78 FR 68345, November 14, 2013), and adding the following new AD:



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**2015-25-03 The Boeing Company:** Amendment 39-18341; Docket No. FAA-2015-0828; Directorate Identifier 2014-NM-146-AD.

**(a) Effective Date**

This AD is effective January 28, 2016.

**(b) Affected ADs**

This AD replaces AD 2013-23-03, Amendment 39-17658 (78 FR 68345, November 14, 2013).

**(c) Applicability**

This AD applies to The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, and 747SR series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

**(d) Subject**

Air Transport Association (ATA) of America Code 57, Wings.

**(e) Unsafe Condition**

This AD was prompted by a report of the fracture of an inboard actuator attach fitting of the outboard flap. An inspection of the attach fitting revealed that it was incorrectly machined with a cylindrical profile instead of a conical profile, resulting in reduced wall thickness. A machining defect was also found on some actuator assemblies inspected during manufacture at the point where the tapered machining transitioned to the hemispherical machining at the top of the inner surface. This defect could lead to fatigue cracking and subsequent fracture. We are issuing this AD to detect and correct defective inboard actuator attach fittings which, combined with loss of the outboard actuator load path, could result in uncontrolled retraction of the outboard flap, damage to flight control systems, and consequent reduced controllability of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Retained Part Number Inspection With Revised Service Information**

This paragraph restates the requirements of paragraph (g) of AD 2013-23-03, Amendment 39-17658 (78 FR 68345, November 14, 2013), with revised service information. Within 90 days after November 29, 2013 (the effective date of AD 2013-23-03): Inspect to determine the part number of the inboard actuator attach fittings of the outboard flaps, in accordance with Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, dated September 12,

2013; or Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014. As of the effective date of this AD, only Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014, may be used.

**(h) Retained Actions for Certain Attach Fittings With Revised Service Information**

This paragraph restates the requirements of paragraph (h) of AD 2013-23-03, Amendment 39-17658 (78 FR 68345, November 14, 2013), with revised service information. If, during the inspection required by paragraph (g) of this AD, any inboard actuator attach fitting having part number (P/N) 65B08564-7 is found, before further flight, do the actions specified in paragraph (h)(1) or (h)(2) of this AD.

(1) Do a detailed inspection of the inboard actuator attach fitting for a cylindrical defect, in accordance with Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, dated September 12, 2013; or Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014. As of the effective date of this AD, only Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014, may be used. For airplanes on which the detailed inspection is done before the effective date of this AD: If any cylindrical defect is found, before further flight, do the actions specified in paragraph (h)(1)(i) or (h)(1)(ii) of this AD.

(i) Do a minimum thickness inspection of the inboard actuator attach fitting to determine minimum wall thickness of the actuator fitting assembly, in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, dated September 12, 2013; or Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014. If the minimum thickness of the wall is less than 0.130 inch: Before further flight, replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, dated September 12, 2013.

(ii) Replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, dated September 12, 2013.

(2) Replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, dated September 12, 2013; or Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014. As of the effective date of this AD, only Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014, may be used.

**(i) New Actions for Certain Airplanes on Which Any Cylindrical Defect Is Found**

For airplanes on which the detailed inspection required by paragraph (h)(1) of this AD is done on or after the effective date of this AD: If any cylindrical defect is found during any inspection required by paragraph (h)(1) of this AD, before further flight, do the actions specified in paragraph (i)(1) or (i)(2) of this AD.

(1) Determine the minimum wall thickness of the actuator attach fitting either by doing an ultrasonic inspection or by mechanically measuring the thickness and do a detailed inspection of the inner conical section to determine if the machining defect is present, in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(i) If the minimum thickness of the wall is less than 0.130 inch: Before further flight, replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(ii) If the minimum thickness of the wall is 0.140 inch or greater and the machining defect is present, before further flight, do the actions specified in paragraph (i)(1)(ii)(A) or (i)(1)(ii)(B) of this AD.



(A) Overhaul the inboard actuator attach fitting of the outboard flap, in accordance with Part 5 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(B) Replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(iii) If the minimum thickness of the wall is 0.130 inch or greater and less than 0.140 inch and the machining defect is not present, within 48 months or 3,000 flight cycles after the effective date of this AD, whichever occurs first, replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(iv) If the minimum thickness of the wall is 0.130 inch or greater and less than 0.140 inch and the machining defect is present, before further flight, replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(2) Replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

#### **(j) New Actions for Airplanes on Which No Cylindrical Defects Are Found**

If no cylindrical defect is found during any inspection required by paragraph (h)(1) of this AD, within 24 months after the effective date of this AD, do the actions specified in paragraph (j)(1) or (j)(2) of this AD.

(1) Determine the minimum wall thickness of the actuator attach fitting either by doing an ultrasonic inspection or by mechanically measuring the thickness and do a detailed inspection of the inner conical section to determine if the machining defect is present, in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(i) If the minimum thickness of the wall is less than 0.130 inch: Before further flight, replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(ii) If the minimum thickness of the wall is 0.140 inch or greater and the machining defect is present, before further flight, do the actions specified in paragraph (j)(1)(ii)(A) or (j)(1)(ii)(B) of this AD.

(A) Overhaul the inboard actuator attach fitting of the outboard flap, in accordance with Part 5 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(B) Replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(iii) If the minimum thickness of the wall is 0.130 inch or greater and less than 0.140 inch and the machining defect is not present, within 48 months or 3,000 flight cycles after the effective date of this AD, whichever occurs first, replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(iv) If the minimum thickness of the wall is 0.130 inch or greater and less than 0.140 inch and the machining defect is present, before further flight, replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(2) Replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

**(k) New Inspection or Replacement for Certain Fittings That Were Previously Inspected**

For airplanes on which the detailed inspection required by paragraph (h)(1) of this AD is done before the effective date of this AD, except as required by paragraph (m) of this AD: If any cylindrical defect is found during any inspection required by paragraph (h)(1) of this AD and the replacement of the inboard actuator attach fitting of the outboard flap was not done as specified in Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, within 24 months after the effective date of this AD, do the actions specified in paragraph (k)(1) or (k)(2) of this AD.

(1) Do a detailed inspection of the inner conical section for machining defects and do an ultrasonic inspection to determine the minimum thickness or mechanically determine the minimum thickness, in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014. A review of airplane maintenance records, if available, is acceptable to determine the wall thickness and to determine if there are machining defects, provided wall thickness and machining defects can be positively determined from the records review.

(i) If any machining defect is found and the minimum thickness of the wall is 0.140 inch or greater: Before further flight, do the actions specified in paragraph (k)(1)(i)(A) or (k)(1)(i)(B) of this AD.

(A) Overhaul the inboard actuator attach fitting of the outboard flap, in accordance with Part 5 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(B) Replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(ii) If any machining defect is found and the minimum thickness of the wall is 0.130 inch or greater and less than 0.140 inch: Before further flight, replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(iii) If no machining defect is found and the minimum thickness of the wall is 0.130 inch or greater and less than 0.140 inch: Within 48 months or 3,000 flight cycles after the effective date of this AD, whichever occurs first, replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(iv) If a machining defect is or is not found and the minimum thickness of the wall is less than 0.130 inch: Before further flight, replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(2) Replace the inboard actuator attach fitting of the outboard flap, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

**(l) Parts Installation Limitation**

As of the effective date of this AD, no actuator attach fitting having P/N 65B08564-7 may be installed on any airplane unless the inspection specified in paragraph (h)(1) of this AD is done prior to installation and the applicable actions specified in paragraphs (i) and (j) of this AD are done within the applicable times specified in paragraphs (i) and (j) of this AD. A review of airplane maintenance

records, if available, is acceptable to determine if the inspection and applicable actions have been done, provided the inspection and actions can be positively determined from the records review.

**(m) Action for Parts Installed After AD 2013-23-03, Amendment 39-17658 (78 FR 68345, November 14, 2013) Was Accomplished**

For airplanes on which the detailed inspection required by paragraph (h)(1) of this AD is done before the effective date of this AD and the inboard actuator attach fitting was replaced since that inspection: Within 90 days after the effective date of this AD, inspect to determine the part number of the inboard actuator attach fittings of the outboard flaps and, for inboard actuator attach fittings having P/N 65B08564-7, do the applicable actions specified in paragraphs (h), (i), and (j) of this AD within the applicable times specified in paragraphs (h), (i), and (j) of this AD. A review of airplane maintenance records, if available, is acceptable to determine the part number, provided the part number can be positively determined from the records review.

**(n) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (o) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/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 the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that 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) If any service information contains steps that are identified as RC (Required for Compliance), those steps must be done to comply with this AD; any steps that are not identified as RC are recommended. Those steps that are not identified as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC provided the steps identified as RC can be done and the airplane can be put back in an airworthy condition. Any substitutions or changes to steps identified as RC require approval of an AMOC.

(5) AMOCs approved for AD 2013-23-03, Amendment 39-17658 (78 FR 68345, November 14, 2013) are approved as AMOCs for the corresponding provisions of this AD.

**(o) Related Information**

For more information about this AD, contact Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6428; fax: 425-917-6590; email: nathan.p.weigand@faa.gov.

**(p) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following service information was approved for IBR on January 28, 2016.

(i) Boeing Alert Service Bulletin 747-57A2443, Revision 1, dated June 23, 2014.

(ii) Reserved.

(4) The following service information was approved for IBR on November 29, 2013 (78 FR 68345, November 14, 2013).

(i) Boeing Alert Service Bulletin 747-57A2443, dated September 12, 2013.

(ii) Reserved.

(5) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>.

(6) You may view this service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(7) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on November 24, 2015.

Jeffrey E. Duven,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2015-30881 Filed 12-23-15; 8:45 am]