



適航指令發布單
Airworthiness Directive Issuance Form

民航局 AD 編號 AD number	CAA-2022-06-007	發布日期 Date issued	2022/6/15												
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 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SP, 747-400, 747-400D, and 747-400F series airplanes, certificated in any category, having line numbers 645 and subsequent.														
主旨摘要 Subject	This AD requires, for certain airplanes, reconfiguring the clamps of certain wire bundles, applying sealant to certain fasteners that penetrate the fuel tank walls, installing cushion clamps and polytetrafluoroethylene sleeves, inspecting to determine if sealant was applied to certain fasteners, and applying sealant if necessary and also requires, for all airplanes, revising the maintenance or inspection program, as applicable, to incorporate new, more restrictive airworthiness limitations.														
民航局 CAA <input type="checkbox"/> 本國產品 Native product <input type="checkbox"/> 其他個案 Other	<div style="text-align: center;">設計國民航主管機構 Original Authority</div> <table style="width: 100%;"><tr><td><input checked="" type="checkbox"/> FAA</td><td><input type="checkbox"/> Germany LBA</td></tr><tr><td><input type="checkbox"/> EASA</td><td><input type="checkbox"/> CAA-NL</td></tr><tr><td><input type="checkbox"/> Brazil</td><td><input type="checkbox"/> UK CAA</td></tr><tr><td><input type="checkbox"/> Transport Canada Civil Aviation</td><td><input type="checkbox"/> Japan CAB</td></tr><tr><td><input type="checkbox"/> DGAC</td><td><input type="checkbox"/> CAA of Israel</td></tr><tr><td colspan="2"><input type="checkbox"/> Other _____</td></tr></table>			<input checked="" type="checkbox"/> FAA	<input type="checkbox"/> Germany LBA	<input type="checkbox"/> EASA	<input type="checkbox"/> CAA-NL	<input type="checkbox"/> Brazil	<input type="checkbox"/> UK CAA	<input type="checkbox"/> Transport Canada Civil Aviation	<input type="checkbox"/> Japan CAB	<input type="checkbox"/> DGAC	<input type="checkbox"/> CAA of Israel	<input type="checkbox"/> Other _____	
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	設計國 AD 編號 Original AD number	2022-10-11													
	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	ATA 57. Ref. Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008. and Boeing Special Attention Service Bulletin 747-57-2327, Revision 8, dated November 13, 2020.														
<div>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)2349-6330 / 6332, Fax：(02)2545-8464, e-mail： adcaa@mail.caa.gov.tw</div> <div>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)2349-6330 / 6332, Fax： (02)2545-8464, e-mail：adcaa@mail.caa.gov.tw</div>															

[Federal Register Volume 87, Number 108 (Monday, June 6, 2022)]

[Rules and Regulations]

[Pages 34120-34125]

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[FR Doc No: 2022-12030]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0877; Project Identifier AD-2020-01316-T; Amendment 39-22049; AD 2022-10-11]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain The Boeing Company Model 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SP, 747-400, 747-400D, and 747-400F series airplanes. This AD was prompted by a determination that a certain fastener type that penetrates the fuel tank walls has insufficient bond to the structure, and energy from a lightning strike or high-powered short circuit could cause arcing to occur at the ends of fasteners in the fuel tanks. This AD requires, for certain airplanes, reconfiguring the clamps of certain wire bundles, applying sealant to certain fasteners that penetrate the fuel tank walls, installing cushion clamps and polytetrafluoroethylene (TFE) sleeves, inspecting to determine if sealant was applied to certain fasteners, and applying sealant if necessary. This AD also requires, for all airplanes, revising the maintenance or inspection program, as applicable, to incorporate new, more restrictive airworthiness limitations (AWLs). The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective July 11, 2022.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of July 11, 2022.

ADDRESSES: For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0877.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0877; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is 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: Rose Len, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3604; email: rose.len@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain The Boeing Company Model 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SP, 747-400, 747-400D, and 747-400F series airplanes. The NPRM published in the Federal Register on November 17, 2021 (86 FR 64085). The NPRM was prompted by a determination that a certain fastener type that penetrates the fuel tank walls has insufficient bond to the structure, and energy from a lightning strike or high-powered short circuit could cause arcing to occur at the ends of fasteners in the fuel tanks. In the NPRM, the FAA proposed to require, for certain airplanes, reconfiguring the clamps of certain wire bundles, applying sealant to certain fasteners that penetrate the fuel tank walls, installing cushion clamps and TFE sleeves, inspecting to determine if sealant was applied to certain fasteners, and applying sealant if necessary. In the NPRM, the FAA also proposed to require, for all airplanes, revising the maintenance or inspection program, as applicable, to incorporate new, more restrictive AWLs. The FAA is issuing this AD to address arcing in the event of a lightning strike or high-powered short circuit, which could result in a fuel tank explosion or fire.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from two commenters, Air Line Pilots Association, International (ALPA), and Boeing, who supported the NPRM without change.

The FAA also received comments from United Parcel Service (UPS), who supported the general actions in the NPRM and provided comments on the AWLs and the inspections specified in the NPRM. The FAA also received comments from Delta Air Lines (Delta). The following presents the comments received on the NPRM and the FAA's response to each comment.

Request To Change the NPRM to a Supersedure

Delta requested that the NPRM be changed to a supersedure of AD 2007-20-01, Amendment 39-15211 (72 FR 54533, September 26, 2007) (AD 2007-20-01). Delta stated that paragraph (f) of AD 2007-20-01 requires accomplishing Boeing Special Attention Service Bulletin 747-57-2327, Revision 1, dated July 10, 2006; and Boeing Special Attention Service Bulletin 747-57-2326, dated January 4, 2007. Delta also stated that the NPRM would require new actions in accordance with the latest revisions of the same service information required in AD 2007-20-01. Delta concluded that it would make compliance simpler by having all of the work in one place and not split between multiple versions of the same bulletins, provided credit is given for accomplishment of Work Packages 1

through 20 using previous revisions of Boeing Special Attention Service Bulletin 747-57-2327, Revision 8, dated November 13, 2020.

The FAA disagrees with the request. The FAA considered superseding AD 2007-20-01 to mandate actions that are necessary to address Special Federal Aviation Regulation No. 88 (SFAR 88) that were unintentionally omitted from Boeing Special Attention Service Bulletin 747-57-2327, Revision 1, dated July 10, 2006. However, the FAA reviewed Boeing Special Attention Service Bulletin 747-57-2327, Revision 8, dated November 13, 2020, and identified AD requirements for additional airplane groups and work packages. The FAA determined that a stand-alone AD would be appropriate because the actions required by AD 2007-20-01 have already been accomplished and paragraph (g) of this AD only applies to some of the airplanes identified in AD 2007-20-01. The additional work in Boeing Special Attention Service Bulletin 747-57-2327, Revision 8, dated November 13, 2020, is only required for certain airplanes, as identified in paragraphs (g)(1) and (2) of this AD. In addition, the actions specified in paragraph (g)(3) of this AD, using Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008, are only required for certain airplanes. The FAA has not changed this AD in this regard.

Request To Revise Initial Compliance Time for an Airworthiness Limitation

UPS requested that the initial compliance time in paragraph (h)(1) of the proposed AD be revised. UPS stated the compliance time should be within 12 years after incorporation of Boeing Special Attention Service Bulletin 747-57-2327, or within 24 months after the effective date of this AD, whichever occurs later. UPS stated the initial compliance time for AWL 28-AWL-33 is not stated in The Boeing Company 747-400 Maintenance Planning Data (MPD) Document, Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D621U400-9, Revision February 2020. UPS noted that paragraph (h)(1) of the proposed AD states the initial compliance time is at the time in the MPD document or within 60 days. UPS stated that due to the age of the affected airplanes that many would have to comply within the 60-day initial compliance time, which would put an undue burden on operators because this task requires extensive access common to heavy maintenance.

The FAA agrees to revise the initial compliance time. It was not the FAA's intention to mandate the initial AWL No. 28-AWL-33 inspection tasks within 60 days after the effective date of this AD for operators that have not yet incorporated AWL No. 28-AWL-33 into the existing maintenance or inspection program, as applicable. However, the FAA disagrees with the compliance time proposed by UPS. The compliance time for AWL No. 28-AWL-33 depends on whether AWL No. 28-AWL-33 has already been incorporated into the operator's existing maintenance or inspection program, and on whether Boeing Special Attention Service Bulletin 747-57-2327 has been incorporated. AWL No. 28-AWL-33 applies to airplanes on which Boeing Special Attention Service Bulletin 747-57-2327 has been incorporated and airplanes having line number 645 and on. The FAA has revised the initial compliance time in paragraph (h)(1) of this AD by making this distinction of whether AWL No. 28-AWL-33 was previously incorporated into the operator's maintenance or inspection program and allowing for a 12 month initial compliance time if certain conditions apply. The FAA also revised the text for the initial compliance time in paragraph (h)(1) of this AD by replacing the reference to "the tasks" with a reference to "AWL No. 28-AWL-33" as it is the only task. The other AWL items referenced in paragraph (h)(1) of this AD are Critical Design Configuration Control Limitations (CDCCLs).

In addition, the FAA has revised the initial compliance time for AWL No. 28-AWL-25 in paragraph (h)(2) of this AD by making this distinction of whether AWL No. 28-AWL-25 was previously incorporated into the operator's maintenance or inspection program and allowing for a 12 month initial compliance time if certain conditions apply. The compliance time specified in the proposed AD for AWL No. 28-AWL-25 has a similar issue to the one for AWL No. 28-AWL-33. The FAA did not intend to mandate the initial AWL No. 28-AWL-25 inspection task within 60 days after the effective date of this AD for operators that have not already incorporated the task into the

operator's existing maintenance or inspection program. The FAA also revised the text for the initial compliance time in paragraph (h)(2) of this AD by replacing the reference to “the tasks” with a reference to “AWL No. 28-AWL-25” as it is the only task. The other AWL items referenced in paragraph (h)(2) of this AD are CDCCLs.

Request To Remove Inspection for Sealant

UPS requested that the FAA remove paragraph (g)(2) of the proposed AD (which includes a requirement to inspect and seal the ends of certain fasteners inside the fuel tanks). UPS stated that AD 2007-20-01 includes a requirement to seal the ends of certain fasteners inside the fuel tanks in accordance with Boeing Special Attention Service Bulletin 747-57-2327, Revision 1, dated July 10, 2006. UPS stated that Step 5 of Figure 23 of Boeing Special Attention Service Bulletin 747-57-2327, Revision 1, dated July 10, 2006, specifies to apply the fillet sealant on the fastener and refers to certain airplane maintenance manual (AMM) procedures. UPS also noted that CDCCL 28-AWL-37, added by paragraph (h) of the proposed AD, only checks for cracked or damaged sealant. UPS concluded that paragraph (g)(2) does not provide any additional improvement in the condition of the affected airplanes from that required by AD 2007-20-01, and therefore should not be required.

The FAA disagrees with the request. The purpose of paragraph (g)(2) of this AD is to make sure that the fillet sealant on identified fasteners fully encapsulates those fasteners. Boeing Special Attention Service Bulletin 747-57-2327, Revision 1, dated July 10, 2006, does not specify to make sure that the fasteners are fully encapsulated with sealant. The AMM procedures are references only and therefore does not mandate that fasteners are fully encapsulated. Since Boeing Special Attention Service Bulletin 747-57-2327, Revision 8, dated November 13, 2020, also does not specify to fully encapsulate the fasteners, the requirement in paragraph (g)(2) of this AD includes an exception that states where note (f) of Figure 23 specifies to “make sure to apply the fillet sealant on the fastener,” this AD requires applying the fillet sealant to fully encapsulate the fastener penetrating the fuel tank. The FAA has not changed this AD in this regard.

Request To Provide Credit for Previous Actions

UPS requested that paragraph (j) of the proposed AD be revised to give credit for previous actions accomplished using Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008. UPS stated that it performed the requirement to seal the ends of certain fasteners using Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008, as an alternative method of compliance to AD 2007-20-01 (which mandated Boeing Special Attention Service Bulletin 747-57-2326, dated January 4, 2007). UPS stated it does not believe they need to go back and verify that previously accomplished actions were done as directed. UPS notes that paragraph (f) of the proposed AD does state to comply with the AD unless already done, but paragraph (j) of the proposed AD does not give credit for previous actions accomplished using Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008. UPS also stated that if credit is not given, the FAA should provide an explanation as to why operators need to go back and verify that previous AD required actions were accomplished as directed.

The FAA agrees that operators that sealed the fasteners using Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008, do not have to go back and verify that all fasteners identified in Figures 4 and 5 of Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008, were sealed in accordance with Figure 1 of that same service bulletin. Only airplanes on which the fasteners were sealed using Boeing Special Attention Service Bulletin 747-57-2326, dated January 4, 2007, must be inspected and the fasteners sealed if necessary. The FAA has revised paragraph (g)(3) of this AD accordingly.

The FAA also notes there is no need to provide credit in paragraph (j) of the AD for actions taken using Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31,

2008, because paragraph (f) of the AD mandates compliance with this AD within the compliance times specified, unless already done.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information Under 1 CFR Part 51

The FAA reviewed Boeing Special Attention Service Bulletin 747-57-2327, Revision 8, dated November 13, 2020. This service information describes procedures for reconfiguring the clamps of certain wire bundles, applying sealant to certain fasteners that penetrate the fuel tank walls, and installing cushion clamps and TFE sleeves on the wire bundles of the front spars and rear spars of the wings.

The FAA also reviewed Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008. This service information describes procedures for, among other actions, applying sealant to certain fasteners.

The FAA also reviewed The Boeing Company 747-400 Maintenance Planning Data (MPD) Document, Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D621U400-9, Revision February 2020, which includes revised AWL tasks 28-AWL-33, 28-AWL-34, and 28-AWL-37; and The Boeing Company 747-100/200/300/SP/SR Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-13747-CMR, Revision September 2020, which includes revised AWL tasks 28-AWL-25, 28-AWL-27, and 28-AWL-28. The revised AWL tasks describe fuel airworthiness limitation items (ALIs) and CDCCLs that address fuel tank systems. These documents are distinct because they apply to different airplane models. The new AWLs include:

- An ALI (periodic inspections) of the cushion clamps and teflon sleeving installed on out-of-tank wire bundles installed on brackets that are mounted directly on the fuel tanks;
- A CDCCL for the cushion clamps and teflon sleeving installed on out-of-tank wire bundles installed on brackets that are mounted directly on the fuel tanks; and
- A CDCCL for lightning, fault current or hot short protection features.

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 ADDRESSES.

Costs of Compliance

The FAA estimates that this AD affects 104 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated Costs				
Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Reconfiguring clamps, inspections, applying sealant, and installing clamps and TFE sleeves	Up to 30 work-hours × \$85 per hour = Up to \$2,550	Up to \$2,004	Up to \$4,554	Up to \$473,616.

The FAA has determined that revising the maintenance or inspection program takes an average of 90 work-hours per operator, although the agency recognizes that this number may vary from operator to operator. Since operators incorporate maintenance or inspection program changes for their affected fleet(s), the FAA has determined that a per-operator estimate is more accurate than a per-airplane estimate. Therefore, the agency estimates the average total cost per operator to be \$7,650 (90 work-hours x \$85 per work-hour).

The FAA estimates the following costs to do any necessary application of sealant that would be required based on the results of the inspections. The agency has no way of determining the number of aircraft that might need this action:

On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Applying sealant	Up to 102 work-hours × \$85 per hour = Up to \$8,670	Up to \$6,813	Up to \$15,483.

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

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.

The FAA is 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

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) Will not affect intrastate aviation in Alaska, 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.

List of Subjects in 14 CFR Part 39

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

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 adding the following new airworthiness directive:



2022-10-11 The Boeing Company: Amendment 39-22049; Docket No. FAA-2021-0877; Project Identifier AD-2020-01316-T.

(a) Effective Date

This airworthiness directive (AD) is effective July 11, 2022.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SP, 747-400, 747-400D, and 747-400F series airplanes, certificated in any category, having line numbers 645 and subsequent.

(d) Subject

Air Transport Association (ATA) of America Code 28, Fuel; 57, Wings.

(e) Unsafe Condition

This AD was prompted by the FAA's analysis of the fuel system reviews conducted by the manufacturer. The FAA is issuing this AD to address arcing in the event of a lightning strike or high-powered short circuit, which could result in a fuel tank explosion or fire.

(f) Compliance

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

(g) Reconfiguration of Wire Bundle Clamps, Sealant Application, Installation of Clamps and Sleeves, Inspections, and Corrective Actions

(1) For Group 1 through 9, 11, and 16 through 45 airplanes identified in Boeing Special Attention Service Bulletin 747-57-2327, Revision 8, dated November 13, 2020: Within 60 months after the effective date of this AD, reconfigure the clamps of the specified wire bundles, apply sealant to the specified fasteners that penetrate the fuel tank walls, and install cushion clamps and polytetrafluoroethylene (TFE) sleeves on the wire bundles of the front spars and rear spars of the wings, as applicable, in accordance with Work Packages 13 through 21, as applicable, of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-57-2327, Revision 8, dated November 13, 2020.

(2) For airplanes on which the actions specified in Work Package 7, 8, or 9 of Boeing Special Attention Service Bulletin 747-57-2327 have been done: Within 60 months after the effective date of

this AD, inspect to determine if the fillet sealant identified in step 5 of Figure 23 of Boeing Special Attention Service Bulletin 747-57-2327, Revision 8, dated November 13, 2020, was applied to fully encapsulate the fastener penetrating the fuel tank; and if the sealant does not fully encapsulate the fastener, before further flight, apply sealant as specified in step 5 of Figure 23, except where note (f) of Figure 23 specifies to “make sure to apply the fillet sealant on the fastener,” this AD requires applying the fillet sealant to fully encapsulate the fastener penetrating the fuel tank.

(3) For Group 2 airplanes identified in Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008, on which fasteners were sealed using Boeing Special Attention Service Bulletin 747-57-2326, dated January 4, 2007: Within 60 months after the effective date of this AD, inspect to determine if all fasteners identified in Figures 4 and 5 of Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008, have been sealed; and if any fasteners are not sealed, before further flight, apply sealant in accordance with Figure 1 of Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008.

(h) Maintenance or Inspection Program Revision

(1) For Model 747-400, 747-400D, and 747-400F series airplanes: Within 60 days after the effective date of this AD: Revise the existing maintenance or inspection program, as applicable, by incorporating the information in airworthiness limitations (AWLs) 28-AWL-33, 28-AWL-34, and 28-AWL-37 of The Boeing Company 747-400 Maintenance Planning Data (MPD) Document, Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D621U400-9, Revision February 2020. The initial compliance time for doing AWL No. 28-AWL-33, “Cushion Clamps and Teflon Sleeving Installed on Out-of-Tank Wire Bundles Installed on Brackets that are Mounted Directly on the Fuel Tanks,” is at the applicable time specified in paragraphs (h)(1)(i) or (ii) of this AD.

(i) For airplanes that did not have any version of AWL No. 28-AWL-33 in the existing maintenance or inspection program before the effective date of this AD: Within 144 months since issuance of the original airworthiness certificate or original export certificate of airworthiness, within 144 months since Boeing Special Attention Bulletin 747-57-2327 was incorporated, or within 12 months after the effective date of this AD, whichever occurs latest.

(ii) For airplanes not identified in paragraph (h)(1)(i) of this AD: Within 144 months since AWL No. 28-AWL-33 was incorporated into the existing maintenance or inspection program, or within 144 months after the most recent inspection was performed as specified in AWL No. 28-AWL-33, whichever occurs later.

(2) For Model 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, and 747SP series airplanes: Within 60 days after the effective date of this AD, revise the existing maintenance or inspection program, as applicable, by incorporating the information in AWLs 28-AWL-25, 28-AWL-27, and 28-AWL-28 of The Boeing Company 747-100/200/300/SP/SR Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-13747-CMR, Revision September 2020; except where the “Applicability” of AWLs 28-AWL-25 and 28-AWL-27 specifies “ALL” and “NOTE,” replace “ALL” and “NOTE” with “Airplanes L/N 645 and on” and remove the “Applicability Note” from the Description column of 28-AWL-25 and 28-AWL-27. The initial compliance time for doing AWL No. 28 AWL-25, “Cushion Clamps and Teflon Sleeving Installed on Out-of-Tank Wire Bundles Installed on Brackets that are Mounted Directly on the Fuel Tanks,” is at the applicable time specified in paragraphs (h)(2)(i) or (ii) of this AD.

(i) For airplanes that did not have any version of AWL No. 28-AWL-25 in the existing maintenance or inspection program before the effective date of this AD: Within 144 months since issuance of the original airworthiness certificate or original export certificate of airworthiness, within 144 months since Boeing Special Attention Bulletin 747-57-2327 was incorporated, or within 12 months after the effective date of this AD, whichever occurs latest.

(ii) For airplanes not identified in paragraph (h)(2)(i) of this AD: Within 144 months since AWL No. 28-AWL-25 was incorporated into the maintenance or inspection program, or within 144 months

after the most recent inspection was performed as specified in AWL No. 28-AWL-25, whichever occurs later.

(i) No Alternative Actions, Intervals, and Critical Design Configuration Control Limitations (CDCCLs)

After the maintenance or inspection program has been revised as required by paragraph (h)(1) or (2) of this AD, no alternative actions (e.g., inspections), intervals, and CDCCLs may be used unless the actions, intervals, and CDCCLs are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (k) of this AD.

(j) Credit for Previous Actions

(1) This paragraph provides credit for the Work Package 13 actions specified in paragraph (g)(1) of this AD, if those actions were performed before the effective date of this AD using the service information specified in paragraphs (j)(1)(i) through (iv) of this AD.

(i) Boeing Special Attention Service Bulletin 747-57-2327, Revision 4, dated August 26, 2010.

(ii) Boeing Special Attention Service Bulletin 747-57-2327, Revision 5, dated September 20, 2011.

(iii) Boeing Special Attention Service Bulletin 747-57-2327, Revision 6, dated February 21, 2013.

(iv) Boeing Special Attention Service Bulletin 747-57-2327, Revision 7, dated November 30, 2017.

(2) This paragraph provides credit for the Work Package 14, 15, and 16 actions specified in paragraph (g)(1) of this AD, if those actions were performed before the effective date of this AD using the service information specified in paragraphs (j)(2)(i) through (iii) of this AD.

(i) Boeing Special Attention Service Bulletin 747-57-2327, Revision 5, dated September 20, 2011.

(ii) Boeing Special Attention Service Bulletin 747-57-2327, Revision 6, dated February 21, 2013.

(iii) Boeing Special Attention Service Bulletin 747-57-2327, Revision 7, dated November 30, 2017.

(3) This paragraph provides credit for the Work Package 17 actions specified in paragraph (g)(1) of this AD, if those actions were performed before the effective date of this AD using the service information specified in paragraphs (j)(3)(i) or (ii) of this AD.

(i) Boeing Special Attention Service Bulletin 747-57-2327, Revision 6, dated February 21, 2013.

(ii) Boeing Special Attention Service Bulletin 747-57-2327, Revision 7, dated November 30, 2017.

(4) This paragraph provides credit for the Work Package 18, 19, and 20 actions specified in paragraph (g)(1) of this AD, if those actions were performed before the effective date of this AD using Boeing Special Attention Service Bulletin 747-57-2327, Revision 7, dated November 30, 2017.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, 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 responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (l)(1) 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 responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(l) Related Information

(1) For more information about this AD, contact Rose Len, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3604; email: rose.len@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (m)(3) and (4) of this AD.

(m) 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.

(i) Boeing Special Attention Service Bulletin 747-57-2326, Revision 1, dated January 31, 2008.

(ii) Boeing Special Attention Service Bulletin 747-57-2327, Revision 8, dated November 13, 2020.

(iii) The Boeing Company 747-100/200/300/SP/SR Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-13747-CMR, Revision September 2020.

(iv) The Boeing Company 747-400 Maintenance Planning Data (MPD) Document, Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D621U400-9, Revision February 2020.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110 SK57, Seal Beach, CA 90740-5600; telephone 562 797 1717; internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) 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, fr.inspection@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on May 6, 2022.

Gaetano A. Sciortino,

Deputy Director for Strategic Initiatives, Compliance & Airworthiness Division, Aircraft Certification Service.

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