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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0703; Product Identifier 2018-NM-007-AD; Amendment 39-19630; AD 2019-08-09]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all The Boeing Company Model 747-8 and 747-8F series airplanes. This AD was prompted by reports of damaged vapor seals, block seals, and heat shield seals on the outboard pylons between the engine strut and aft fairing. This AD requires installing new aft fairing vapor seals, heatshield seals, heatshield seal retainers, block seals, and outboard lateral restraint access panels. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective June 13, 2019.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of June 13, 2019.

ADDRESSES: For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster 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, Transport Standards 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 on the internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2018-0703.

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-2018-0703; 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, the regulatory evaluation, any comments received, and other information. The address for Docket

Operations (phone: 800-647-5527) 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: Christopher Baker, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3552; email: Christopher.R.Baker@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all The Boeing Company Model 747-8 and 747-8F series airplanes. The NPRM published in the Federal Register on August 3, 2018 (83 FR 38096). The NPRM was prompted by reports of damaged vapor seals, block seals, and heat shield seals on the outboard pylons between the engine strut and aft fairing. The NPRM proposed to require installing new aft fairing vapor seals, heatshield seals, heatshield seal retainers, block seals, and outboard lateral restraint access panels.

We are issuing this AD to address heat damage to the vapor seals between the engine strut and aft fairing. Such damage could allow flammable fluid leakage out of the aft fairing, which could result in an uncontrolled fire in the engine strut.

Comments

We gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request To Review Airplane Maintenance Records in Lieu of an Inspection

United Parcel Service (UPS) requested that operators be allowed to perform a records review to determine if the affected part number is installed in lieu of performing an inspection. UPS stated that the records review will provide an equivalent level of safety. UPS stated that in accordance with paragraph (g)(2) of the proposed AD, it would be required to inspect all Model 747-8F airplanes within 4 years or 4,800 flight cycles after the AD effective date, whichever occurs first.

We agree with the commenter's request that a review of the airplane maintenance records is acceptable in lieu of an inspection if the part number of the part can be conclusively determined from that review. We have revised paragraph (g)(2) of this AD accordingly.

Request To Revise the Line Numbers in the Applicability Paragraph

Boeing requested we revise the proposed AD to address airplanes only specified in Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, line numbers (L/Ns) 1420 through 1540, instead of all 747-8 and 747-8F series airplanes as specified in paragraph (c), “Applicability,” of the proposed AD.

Boeing stated that airplanes not identified in Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, L/Ns 1541 and on, were built and delivered from the Boeing factory with the correct parts. Boeing commented that the factory utilizes the approved Boeing Production System to maintain configuration control of the airplanes through delivery, and that the remainder of the Model 747-8 fleet is covered by Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017.

We disagree with the commenter's request. As we stated in the “Differences Between this Proposed AD and the Service Information” of the NPRM, the applicability in this AD does not refer to paragraph l. A., “Effectivity,” of Boeing Alert Service Bulletin 747-54A2247, dated August 3,

2017. The service information does not contain a comprehensive list of the airplanes affected by the identified unsafe condition because the spare parts identified in paragraph (j) of this AD have been determined to be rotable parts that are capable of being installed on all Model 747-8 and 747-8F series airplanes. Therefore, the applicability of this AD is all Model 747-8 and 747-8F series airplanes.

Additionally, there is the potential for previously delivered Model 747-8 and 747-8F airplanes having the affected spare parts installed during a repair of the aft fairing. Delivered airplanes with line numbers 1541 and on could have been exposed to the affected parts between delivery and as of the effective date of this AD, which is why operators can either review airplane maintenance records to confirm whether the subject parts are not installed, or perform an inspection of the parts on the airplanes.

We have been informed by operators that the practice of rotating interchangeable parts among airplanes is widespread and even a key part of their operations. In the absence of an AD or airworthiness limitation (AWL) that restricts the installation of the affected parts, we cannot be assured that the unsafe condition will not be introduced to Model 747-8 and 747-8F airplanes that are not identified in Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017. In addition, we cannot rely solely on the Boeing Production System to maintain configuration control of these airplanes until the AD has been published. In order to eliminate the unsafe condition, we must address all of the potentially exposed airplanes. We have not changed this AD in this regard.

Request To Remove the Parts Installation Prohibition Paragraph

Boeing requested that we remove the “Parts Installation Prohibition” paragraph in the proposed AD. Boeing stated that some of the parts listed in paragraph (j), “Parts Installation Prohibition,” remain in use on all Model 747-8 airplanes and therefore cannot be prohibited.

Boeing also commented that, regarding the seals, rotation of these parts from one airplane to another is not feasible due to their location and the effort required, as the aft fairings must be removed and reinstalled to gain access to the seals. In addition, Boeing stated that the lateral restraint access panels were revised to include an integral air scoop on one side, and if a panel is inadvertently installed in an incorrect location, the seal system would still operate with an acceptable level of safety.

We partially agree with the commenter's request. We agree the vapor seal-outboard aft fairing, part number (P/N) 323U8452-3, is a part that could be used as a part of the service information modification. Therefore, we have revised the “Parts Installation Prohibition/Limitation” paragraph in this AD to specify that no person may install a vapor seal with P/N 323U8452-3, on any airplane, unless it is a new vapor seal that has been installed as specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017.

We disagree with removing any other part numbers as they are subject to the heat damage that leads to the unsafe condition. However, we have revised the compliance time specified in paragraph (j) of this AD by removing “as of the effective date of this AD” and replacing it with either “as of the determination that no affected part is installed” or “after accomplishing the required actions specified in paragraph (g) of this AD”, depending on whether the actions in the service information specified in paragraph (g) of this AD must be done.

In addition, for clarity, we revised paragraph (g)(2) of this AD by listing the affected part numbers instead of referring to paragraph (j) of this AD for the part numbers.

Request To Clarify the Requirements of the Parts Installation Prohibition Paragraph

Cathay Pacific Airways Limited (Cathay) requested clarification of the requirements in the “Parts Installation Prohibition” paragraph of the proposed AD. Cathay stated that the paragraph should only be applicable to airplanes that have been modified in accordance with Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, instead of being applicable to any airplane

modified as of the effective date of the AD. Cathay stated that if the intention is indeed for any airplane, then it asked the FAA to clarify the following:

Whether the intent of the proposed AD is to fulfill this paragraph requirement as of the compliance time of the proposed AD instead of as of the effective date of this proposed AD;

Whether this paragraph affects the already installed parts or only the new parts to be installed in accordance with Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017. Cathay stated that on the effective date of the proposed AD, some of the airplanes are still in pre-mod configuration and are installing the pre-mod parts;

Whether after the effective date of the proposed AD, do operators need to accomplish Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, immediately and install the post-modification parts if the related parts are found damaged at line maintenance as a non-routine findings; and

Whether after the effective date of the proposed AD, do operators need to accomplish Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, immediately and install the post-modification parts if the related parts are found damaged during the Boeing Alert Service Bulletin 747-54A2246, dated February 5, 2016, inspections.

We agree to provide clarification for the commenter. Paragraph (g)(1) of this AD requires operators to complete the requirements in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, within 4 years or 4,800 flight cycles after the effective date of this AD. Paragraph (g)(2) of this AD requires operators to determine if any affected part is installed and if so, to complete the applicable replacement in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, within 4 years or 4,800 flight cycles after the effective date of this AD.

Within that time period, operators of airplanes that have any affected parts may use the existing/pre-modification parts that are subject to the repetitive inspections of AD 2017-04-13, Amendment 39-18808 (82 FR 11795, February 27, 2017) ("AD 2017-04-13"). If it is discovered during line maintenance that the subject parts are damaged, the operator has the option to replace the parts that are damaged using either Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, or Boeing Alert Service Bulletin 747-54A2246, dated February 5, 2016. Thus, operators are able to continue to conduct the repetitive inspections as well as accomplish the repairs using Boeing Alert Service Bulletin 747-54A2246, dated February 5, 2016, while using the older parts, for up to 4 years or 4,800 flight cycles from the effective date of this AD.

However, operators are required to accomplish Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, within the same compliance time specified in this AD. The FAA encourages operators to install the newer parts to eliminate the unsafe condition and terminate the inspections required by AD 2017-04-13.

For airplanes that do not have any affected parts, we have determined that in order to address the unsafe condition, we cannot allow that condition to be introduced into additional airplanes in the fleet. Therefore, paragraph (j)(1) of this AD is applicable to those airplanes and the prohibition and limitation specified in paragraphs (j)(1)(i) and (j)(1)(ii) of this AD must be complied with as of the determination that no affected part is installed.

Paragraph (j)(2) of this AD is only applicable to the airplanes that have incorporated the actions specified in Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017. Once an operator incorporates the new parts in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, operators must comply with the prohibition and limitation specified in paragraphs (j)(2)(i) and (j)(2)(ii) of this AD.

Conclusion

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

Are consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and

Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017. This service information describes procedures for installing new aft fairing vapor seals, heatshield seals, heatshield seal retainers, block seals, and outboard lateral restraint access panels. 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 13 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

Estimated Costs for Required Actions

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Installation of vapor seals, heatshield seals, heatshield seal retainers, block seals, and outboard lateral restraint access panels	136 work-hours × $85 per hour = $11,560	$21,910	$33,470	$435,110

According to the manufacturer, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all available costs in our cost estimate.

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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

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) 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 adding the following new airworthiness directive (AD):

2019-08-09 The Boeing Company: Amendment 39-19630; Docket No. FAA-2018-0703; Product Identifier 2018-NM-007-AD.

(a) Effective Date

This AD is effective June 13, 2019.

(b) Affected ADs

This AD affects AD 2017-04-13, Amendment 39-18808 (82 FR 11795, February 27, 2017) ("AD 2017-04-13").

(c) Applicability

This AD applies to all The Boeing Company Model 747-8 and 747-8F series airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 54, Nacelles/pylons.

(e) Unsafe Condition

This AD was prompted by reports of damaged vapor seals, block seals, and heat shield seals on the outboard pylons between the engine strut and aft fairing. We are issuing this AD to address heat damage to the vapor seals between the engine strut and aft fairing. Such damage could allow flammable fluid leakage out of the aft fairing, which could result in an uncontrolled fire in the engine strut.

(f) Compliance

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

(g) Required Actions

(1) For airplanes identified in Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017: Except as required by paragraph (h) of this AD, at the applicable times specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, do all applicable actions identified as "RC" (required for compliance) in, and in accordance with, the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017.

(2) For airplanes not identified in Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017: Within 4 years or 4,800 flight cycles after the effective date of this AD, whichever occurs first, inspect to determine if any part number identified in paragraphs (g)(2)(i) through (g)(2)(v) of this AD is installed. If any part number specified in paragraphs (g)(2)(i) through (g)(2)(v) of this AD is

installed, within 4 years or 4,800 flight cycles after the effective date of this AD, whichever occurs first, replace the part with a part number that is identified as an acceptable replacement in Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017. A review of airplane maintenance records is acceptable in lieu of this inspection if the part numbers specified in paragraphs (g)(2)(i) through (g)(2)(v) of this AD can be conclusively determined from that review.

(i) An access panel lateral restraint with part number (P/N) 321U8595-1, 321U8595-2, 321U8595-3, or 321U8595-4.

(ii) A block seal with P/N 323U8452-2.

(iii) A vapor seal with P/N 323U8452-3.

(iv) A heatshield seal with P/N 323U8852-1.

(v) A heatshield seal retainer P/N 323U8852-2.

(h) Exceptions to Service Information Specifications

For purposes of determining compliance with the requirements of this AD: Where Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017, uses the phrase "the original issue date of this service bulletin," this AD requires using "the effective date of this AD."

(i) Terminating Action for Repetitive Inspections

Accomplishing the actions specified in paragraphs (g)(1) or (g)(2) of this AD, as applicable, terminates all requirements of AD 2017-04-13.

(j) Parts Installation Prohibition/Limitation

(1) For airplanes identified in paragraph (g)(2) of this AD on which no part specified in paragraphs (g)(2)(i) through (g)(2)(v) of this AD is found installed: As of the determination that no part specified in paragraphs (g)(2)(i) through (g)(2)(v) of this AD is installed, comply with the prohibition and limitation specified in paragraphs (j)(1)(i) and (j)(1)(ii) of this AD.

(i) Do not install an access panel lateral restraint with part numbers (P/Ns) 321U8595-1, 321U8595-2, 321U8595-3 and 321U8595-4; a block seal with P/N 323U8452-2; a heatshield seal with P/N 323U8852-1; and a heatshield seal retainer P/N 323U8852-2; on any airplane.

(ii) Do not install a vapor seal with P/N 323U8452-3, on any airplane, unless it is a new vapor seal that is installed as specified in the Accomplishment Instructions Boeing Alert Service Bulletin 747-54A2247, dated August 3, 2017.

(2) For airplanes other than those identified in paragraph (j)(1) of this AD: After accomplishing the required actions specified in paragraph (g) of this AD, comply with the prohibition and limitation specified in paragraphs (j)(2)(i) and (j)(2)(ii) of this AD:

(i) Do not install an access panel lateral restraint with P/Ns 321U8595-1, 321U8595-2, 321U8595-3, and 321U8595-4; a block seal with P/N 323U8452-2; a heatshield seal with P/N 323U8852-1; and a heatshield seal retainer P/N 323U8852-2; on any airplane.

(ii) Do not install a vapor seal with P/N 323U8452-3, on any airplane, unless it is a new vapor seal that is installed as specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2247, dated August 3, 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 local Flight Standards District 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) 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, modification, or alteration 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 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.

(4) Except as required by paragraph (h) of this AD: For service information that contains steps that are labeled as RC, the provisions of paragraphs (k)(4)(i) and (k)(4)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled "RC Exempt," then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled 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 RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(l) Related Information

For more information about this AD, contact Christopher Baker, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3552; email: Christopher.R.Baker@faa.gov.

(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 Alert Service Bulletin 747-54A2247, dated August 3, 2017.

(ii) [Reserved]

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; internet https://www.myboeingfleet.com.

(4) You may view this service information at the FAA, Transport Standards 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, call 202-741-6030, or go to: http://www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued in Des Moines, Washington, on April 25, 2019.
Michael Kaszycki,
Acting Director, System Oversight Division,
Aircraft Certification Service.