



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-6548; Directorate Identifier 2015-NM-114-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain The Boeing Company Model 787-8 and 787-9 airplanes equipped with General Electric engines. This proposed AD was prompted by reports of cracking in barrel nuts on a forward engine mount of Model 747-8 airplanes, which shares a similar design to the forward engine mount of Model 787-8 and 787-9 airplanes. This proposed AD would require, for certain airplanes, replacement of the four barrel nuts of the forward engine mount on each engine. For certain other airplanes, this proposed AD would require an inspection to determine if any forward engine mount barrel nut having a certain part number is installed, and related investigative and corrective actions if necessary. We are proposing this AD to detect and correct cracking of the forward engine mount barrel nuts; such cracking could result in reduced load capacity of the forward engine mount and could result in separation of an engine from the airplane, and consequent loss of control of the airplane.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed 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 <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-6548.

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-2015-6548; 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 proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Allen Rauschendorfer, Aerospace Engineer, Airframe Branch, ANM-120S, Seattle Aircraft Certification Office, FAA,

1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6487; fax: 425-917-6590; email: allen.rauschendorfer@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2015-6548; Directorate Identifier 2015-NM-114-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We received a report indicating that during the replacement of the No. 2 engine on a Model 747-8 airplane, an operator conducted a non-destructive test (NDT) inspection of the barrel nuts on the forward engine mount and found cracks on two of the four barrel nuts. The same operator also discovered one cracked barrel nut on the No. 1 engine of the same Model 747-8 airplane. Boeing did an NDT inspection on the barrel nuts of the No. 2 engine of a Model 747-8 flight test airplane and discovered two barrel nuts with cracks. Since these initial findings, two additional barrel nuts were found cracked on two additional Model 747-8 airplanes.

The barrel nuts are located at the forward end of the strut box and are used to fasten the forward engine mount to the strut. A barrel nut with a crack on one side is still

able to carry ultimate load. A crack on both sides of a barrel nut will cause complete failure of the barrel nut. Complete failure of two or more barrel nuts on the same forward engine mount reduces the load capacity of the forward engine mount and could result in separation of an engine from the airplane, and consequent loss of control of the airplane.

Model 787-8 and 787-9 airplanes with General Electric engines have a similar forward engine mount bolt and barrel nut configuration to that on Model 747-8 series airplanes. Therefore, Model 787-8 and 787-9 airplanes are subject to the same unsafe condition revealed on Model 747-8 series airplanes. We issued AD 2013-24-12, Amendment 39-17686 (78 FR 71989, December 2, 2013), to address this unsafe condition on Model 747-8 series airplanes.

Relevant Service Information under 1 CFR part 51

We reviewed Boeing Service Bulletin B787-81205-SB710026-00, Issue 001, dated June 10, 2015. The service information describes procedures for replacing the forward engine mount barrel nuts with new, improved barrel nuts; doing an inspection to determine if barrel nuts having a certain part number are installed on the forward engine mount; and doing related investigative and corrective actions. 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 of this NPRM.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require accomplishing the actions specified in the service information described previously, except as discussed under "Differences Between this Proposed AD and the Service Information." For information on the

procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for Docket No. FAA-2015-6548.

The phrase “related investigative actions” is used in this proposed AD. “Related investigative actions” are follow-on actions that (1) are related to the primary actions, and (2) further investigate the nature of any condition found. Related investigative actions in an AD could include, for example, inspections.

The phrase “corrective actions” is used in this proposed AD. “Corrective actions” are actions that correct or address any condition found. Corrective actions in an AD could include, for example, repairs.

Differences Between this Proposed AD and the Service Information

The service specifies to contact the manufacturer for instructions on how to repair certain conditions, but this proposed AD would require repairing those conditions in one of the following ways:

- In accordance with a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

Explanation of “RC” Steps in Service Information

The FAA worked in conjunction with industry, under the Airworthiness Directive Implementation Aviation Rulemaking Committee (ARC), to enhance the AD system. One enhancement was a new process for annotating which steps in the service information are required for compliance with an AD. Differentiating these steps from other tasks in the service information is expected to improve an owner’s/operator’s understanding of crucial AD requirements and help provide consistent judgment in AD compliance. The steps identified as Required for Compliance (RC) in any service

information identified previously have a direct effect on detecting, preventing, resolving, or eliminating an identified unsafe condition.

For service information that contains steps that are labeled as RC, the following provisions apply: (1) 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, and an AMOC is required for any deviations to RC steps, including substeps and identified figures; and (2) 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.

Costs of Compliance

We estimate that this proposed AD affects 36 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Replacement (2 engines)	29 work-hours X \$85 per hour = \$2,465 for 2 engines	\$1,988 per engine x 2 engines = \$3,976	\$6,441	\$64,410 (10 airplanes)
Inspection for part number using maintenance records (2 engines)	1 work-hour X \$85 per hour = \$85 for 2 engines	\$0	\$85	\$2,210 (26 airplanes)

We estimate the following costs to do any related investigative actions that would be required based on the results of the proposed inspection. We have no way of determining the number of aircraft that might need these actions:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Inspection (2 engines)	9 work-hours X \$85 per hour = \$765 for 2 engines	\$0	\$765

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

According to the manufacturer, some of the costs of this proposed 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 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.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the 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.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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):

No. FAA-2015-6548; Directorate Identifier 2015-NM-114-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 787-8 and 787-9 airplanes, certificated in any category, equipped with General Electric GENx-1B engines, as identified in Boeing Service Bulletin B787-81205-SB710026-00, Issue 001, dated June 10, 2015.

(d) Subject

Air Transport Association (ATA) of America Code 71, Powerplant.

(e) Unsafe Condition

This AD was prompted by reports of cracking in barrel nuts on a forward engine mount of Model 747-8 airplanes, which shares a similar design to the forward engine mount of Model 787-8 and 787-9 airplanes. We are issuing this AD to detect and correct cracking of the forward engine mount barrel nuts; such cracking could result in reduced load capacity of the forward engine mount, and could result in separation of an engine from the airplane, and consequent loss of control of the airplane.

(f) Compliance

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

(g) Replacement Barrel Nuts

For Group 1 airplanes as identified in Boeing Service Bulletin B787-81205-SB710026-00, Issue 001, dated June 10, 2015: Except as provided by paragraph (i)(1) of this AD, at the time specified in paragraph 5., "Compliance," of Boeing Service Bulletin B787-81205-SB710026-00, Issue 001, dated June 10, 2015, replace the existing forward engine mount barrel nuts on each engine, in accordance with the Accomplishment Instructions of Boeing Service Bulletin B787-81205-SB710026-00, Issue 001, dated June 10, 2015.

(h) Part Number Inspection for Installed Barrel Nuts

For Group 2 airplanes as identified in Boeing Service Bulletin B787-81205-SB710026-00, Issue 001, dated June 10, 2015: Except as provided by paragraph (i)(1) of this AD, at the time specified in paragraph 5. “Compliance,” of Boeing Service Bulletin B787-81205-SB710026-00, Issue 001, dated June 10, 2015, review the aircraft maintenance records to determine if the airplane engine has been removed, installed, or replaced, in accordance with the Accomplishment Instructions of Boeing Service Bulletin B787-81205-SB710026-00, Issue 001, dated June 10, 2015. If the maintenance records indicate that a barrel nut having part number SL4081C14SP1 is installed, or if the part number of an installed barrel nut cannot be determined, before further flight, do the related investigative and applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Service Bulletin B787-81205-SB710026-00, Issue 001, dated June 10, 2015.

(i) Exception to Service information

(1) Where Boeing Service Bulletin B787-81205-SB710026-00, Issue 001, dated June 10, 2015, specifies a compliance time “after the Issue 001 date on this service bulletin,” this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) Where Boeing Service Bulletin B787-81205-SB710026-00, Issue 001, dated June 10, 2015, specifies to contact Boeing for repair instructions: Before further flight, repair using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

(j) 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 (k)(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 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, 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 (i)(2) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (j)(4)(i) and (j)(4)(ii) 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. 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.

(k) Related Information

(1) For more information about this AD, contact Allen Rauschendorfer, Aerospace Engineer, Airframe Branch, ANM-120S, Seattle Aircraft Certification Office,

FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6487; fax: 425-917-6590; email: allen.rauschendorfer@faa.gov.

(2) 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.

Issued in Renton, Washington, on December 4, 2015.

Michael Kaszycki,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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