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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-0719; Product Identifier 2019-NM-137-AD; Amendment 39-19876; AD 2020-05-26]

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 787-8 airplanes. This AD was prompted by a report of failure of a wing strut leak test due to a missing bolt on the firewall. This AD requires a one-time leak test of the strut upper spar areas for the left and right wing struts, and corrective action if necessary. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective May 4, 2020.

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.

Examining the AD Docket

You may examine the AD docket on the internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2019-0719; 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 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: Tak Kobayashi, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3553; email: takahisa.kobayashi@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

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 787-8 airplanes. The NPRM published in the Federal Register on November 1, 2019 (84 FR 58636). The NPRM was prompted by a report of failure of a wing strut leak test due to a missing bolt on the firewall. The NPRM proposed to require a one-time leak test of the strut upper spar areas for the left and right wing struts, and corrective action if necessary.

The FAA is issuing this AD to address a hole in the firewall, which could allow flammable fluid to leak from the strut compartment to the engine compartment when the drainage provision is overwhelmed. Flammable fluid leakage into the engine compartment could result in an uncontrollable engine fire and consequent structural failure of the wing.

Comments

The FAA 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.

Support for the NPRM

Two commenters, Patrick Imperatrice and Seth Stewart, indicated support for the NPRM.

Request To Change the Unsafe Condition

Boeing asked that the current language for the unsafe condition specified in the proposed AD, which states, in part, ". . . which could allow flammable fluid leakage in the strut area. This leakage could overwhelm the drainage provision, enter the engine compartment . . ." be changed to ". . . which could allow flammable fluid to leak from the strut compartment to the engine core compartment . . . ." Boeing stated that the hole in the firewall due to a missing bolt does not affect the drain provision from the strut system tubing shroud. Boeing added that a missing bolt does create an unintended drain path from the strut flammable fluid compartment to the engine core compartment fire zone.

The FAA agrees with the commenter's request for the reason provided. The FAA has revised the Discussion section and paragraph (e) of this AD to include the suggested language.

Request To Clarify Certain Language

Boeing asked that the language specified in paragraph (g)(2) of the proposed AD, be changed from "strut upper spar (strut areas . . .)" to "systems tubing shroud (area . . .)." Boeing stated that the water must be applied in the systems tubing shroud, not to the strut upper spar. Boeing added that the strut upper spar between the forward and mid-vapor barriers is a dry bay, but the systems tubing shroud is a flammable leakage zone.

The FAA agrees with the commenter's request to clarify the language to be consistent with Boeing's terminology. This procedure is also provided in the Boeing 787 Aircraft Maintenance Manual (AMM), specified as additional guidance in this AD. The FAA has revised paragraph (g)(2) of this AD as suggested by the commenter.

Request To Remove Leak Test Requirement

Boeing asked that the FAA remove the leak test required by paragraph (g) of the proposed AD and either require or include an option for a visual inspection for proper installation of the bolt on the firewall, as specified in planned Boeing Service Bulletin 787-54A0021-I001. Boeing stated that paragraph (e) of the proposed AD specified that the unsafe condition was caused by a missing bolt that plugs a penetration on the strut firewall. Boeing added that a visual inspection done using the planned Boeing service information will verify the proper installation of the bolt, and ensure firewall integrity, in addition to less maintenance time than a leak test, resulting in lower costs for the airlines. Boeing also stated that the service bulletin is scheduled for release in June 2020, and will include instructions to inspect for a missing bolt, as well as corrective action to correctly install a missing bolt and perform a leak test to ensure proper drainage.

The FAA acknowledges the commenter's request, but does not agree to revise this AD. The leak test required by this AD provides a practical means to address the unsafe condition, and this method is adequate since the service information is not yet approved or available. The FAA may not require any document that does not yet exist in an AD. In general terms, the FAA is required by Office of the Federal Register (OFR) regulations for approval of materials incorporated by reference, as specified in 1 CFR 51.1(f), to either publish the service document contents as part of the actual AD language; or submit the service document to the OFR for approval as referenced material, in which case the FAA may only refer to such material in the text of an AD. Since no service information for the visual inspection has been provided to the FAA, the agency is unable to evaluate or approve an inspection method. The FAA finds that delaying this action is inappropriate in light of the identified unsafe condition. If service information for this inspection becomes available later, it may be submitted to the FAA for approval of an alternative method of compliance under the provisions of paragraph (h) of this AD. The FAA has not changed this AD in this regard.

Request To Clarify a Procedure

Boeing asked that the FAA add the language “remove the tubing shroud cover” to the end of paragraph (g)(1) of the proposed AD to clarify the procedure. Boeing stated that if the tubing shroud cover is not removed, water cannot be poured into the systems tubing and side shroud areas.

The FAA partially agrees with the commenter's request. The FAA determined that only the steps necessary for properly accomplishing the leak test–not the general steps necessary to prepare for the test–are included in the AD requirements. For additional guidance, Note 1 to paragraph (g) of this AD provides information related to the procedures in the applicable section of the Boeing 787 AMM. That section includes all relevant general steps for accomplishing the required leak test. Therefore, the FAA has not changed this AD in this regard.

Request for Correction of a Paragraph Identifier

Boeing stated that there are two paragraph identifiers that are identical. Boeing noted that paragraph identifier (g)(5)(ii) of the proposed AD is repeated, and the second paragraph identifier should be (g)(5)(iii).

The FAA agrees with the commenter and has corrected the paragraph identifier accordingly.

Conclusion

The FAA 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. The FAA has 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.

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

Costs of Compliance

The FAA estimates that this AD affects 2 airplanes of U.S. registry. The agency estimates the following costs to comply with this AD:

Estimated Costs for Required Actions

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
3 work-hours × $85 per hour = $255	$0	$255	$510

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

Estimated Costs of On-Condition Action

Labor cost	Parts cost	Cost per product
1 work-hour × $85 per hour = $85	Minimal	$85

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.

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):

2020-05-26 The Boeing Company: Amendment 39-19876; Docket No. FAA-2019-0719; Product Identifier 2019-NM-137-AD.

(a) Effective Date

This AD is effective May 4, 2020.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 787-8 airplanes, certificated in any category, line numbers 6, 11, 17, 19, 20, 21, 23, 25 through 30 inclusive, and 32 through 38 inclusive.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a report of failure of a wing strut leak test due to a missing bolt on the firewall. The FAA is issuing this AD to address a hole in the firewall, which could allow flammable fluid to leak from the strut compartment to the engine compartment when the drainage provision is overwhelmed. Flammable fluid leakage into the engine compartment could result in an uncontrollable engine fire and consequent structural failure of the wing.

(f) Compliance

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

(g) Leak Test and Corrective Action

Within 12 months after the effective date of this AD: Do a one-time leak (functional) test of the strut upper spar areas for the left and right wing struts, by doing the actions specified in paragraphs (g)(1) through (5) of this AD. A review of airplane maintenance records is acceptable in lieu of this test if it can be conclusively determined from that review that the leak test was previously accomplished and successfully completed.

(1) Put a plug in the strut forward drain outlet (this drain outlet is labeled as “pylon strut”). Put an empty container below the strut forward drain outlet to collect water drained through this outlet.

(2) Apply 381 to 387 fluid ounces (11.3 to 11.4 liters) of water in 2.5 to 3.5 minutes, to the systems tubing shroud (area between the forward and mid-vapor barriers).

(3) Make sure that no leakage occurred after doing the action specified in paragraph (g)(2) of this AD.

(4) Remove the plug from the strut forward drain outlet and make sure that the water is drained through the strut forward drain outlet only.

(5) After 3 minutes from accomplishing the action specified in paragraph (g)(4) of this AD, measure the water collected in the container, and do the applicable actions specified in paragraphs (g)(5)(i) through (iii) of this AD.

(i) If leaks were found, do corrective action before further flight using a method approved in accordance with the procedures specified in paragraph (h) of this AD.

(ii) If no leaks were found and less than 354 fluid ounces (10.5 liters) of water is collected in the container, do corrective action before further flight using a method approved in accordance with the procedures specified in paragraph (h) of this AD.

(iii) Before further flight after accomplishing any corrective action required by paragraph (g)(5)(i) or (ii) of this AD, repeat the actions specified in paragraphs (g)(1) through (5) of this AD until successful completion of the test (i.e., no leaks are found and 354 fluid ounces (10.5 liters) of water or more is measured in the container).

Note 1 to paragraph (g): Additional guidance for performing the leak (functional) test can be found in Boeing 787 Aircraft Maintenance Manual (AMM), 54-65-01, Strut Spar–Upper–Functional Test.

(h) 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 (i)(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 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.

(i) Related Information

(1) For more information about this AD, contact Tak Kobayashi, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3553; email: takahisa.kobayashi@faa.gov.

(2) For service information identified in this AD that is not incorporated by reference, 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. For information on the availability of this material at the FAA, call 206-231-3195.

(j) Material Incorporated by Reference

None.

Issued on March 10, 2020.
Lance T. Gant,
Director, Compliance & Airworthiness Division,
Aircraft Certification Service.