



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2014-0580; Directorate Identifier 2014-NM-081-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 supersede Airworthiness Directive (AD) 2011-09-11, which applies to certain The Boeing Company Model 777-200 and -300 series airplanes. AD 2011-09-11 currently requires repetitive inspections for hydraulic fluid contamination of the interior of the strut disconnect assembly; repetitive inspections for discrepancies of the interior of the strut disconnect assembly, if necessary; repetitive inspections of the exterior of the strut disconnect assembly for cracks, if necessary; corrective action if necessary; and an optional terminating action for the inspections. Since we issued AD 2011-09-11, we have received reports of side and top cover plates installed with missing fastener bolts, which results in an unsealed opening on the system disconnect assembly. This proposed AD would add, for certain airplanes, an inspection of the side and top cover plates to determine if all cover plate attach fasteners have been installed, and installing any missing fasteners including doing an inspection for damage, and repair if necessary. We are proposing this AD to detect and correct hydraulic fluid contamination, which can cause cracking of titanium parts in the system disconnect assembly; and also to detect and correct missing fasteners, which results in unsealed openings on the system disconnect assembly. Both unsafe conditions can compromise the engine firewall and result in fire hazards for both the engine compartment and the strut.

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.

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-2014-0580; 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: Kevin Nguyen, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6501; fax: 425-917-6590; email: kevin.nguyen@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include “Docket No. FAA-2014-0580; Directorate Identifier 2014-NM-081-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

On April 12, 2011, we issued AD 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011), for The Boeing Company Model 777-200 and -300 series airplanes equipped with Pratt and Whitney engines. AD 2011-09-11 requires repetitive inspections for hydraulic fluid contamination of the interior of the strut disconnect assembly; repetitive inspections for discrepancies of the interior of the strut disconnect assembly, if necessary; repetitive inspections of the exterior of the strut disconnect assembly for

cracks, if necessary; corrective action if necessary; and an optional terminating action for the inspections. AD 2011-09-11 resulted from reports of system disconnect boxes contaminated with hydraulic fluid, which led to subsequent cracking of titanium parts in the system disconnect assembly. We issued AD 2011-09-11 to detect and correct hydraulic fluid contamination, which can cause cracking of titanium parts in the system disconnect assembly, resulting in compromise of the engine firewall. A cracked firewall can allow fire in the engine area to enter the strut and can lead to an uncontained engine strut fire if flammable fluid is present. Cracking of the disconnect box may also reduce the effectiveness of the fire extinguishing system in the engine compartment and could contribute to an uncontained engine fire. In addition, a cracked disconnect box can leak flammable fluids into the engine compartment, which can initiate an engine fire, and lead to one or both fire conditions discussed above.

Actions Since AD 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011) Was Issued

Since we issued AD 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011), we have received reports of side and top cover plates installed with two fastener bolts on airplanes on which a replacement of the titanium system disconnect assembly was accomplished in accordance with AD 2011-09-11. An operator reported that the side and top cover plates were only temporarily installed with two fasteners for each cover plate; additional bolts were not in the kits, and the service bulletin did not provide instructions to install the remaining bolts. Missing fasteners will allow for fastener holes on the cover plates to be not closed off, and cover plates to be loose and not sealed tightly against the disconnect box assembly, resulting in compromise of the engine firewall. This compromise of the engine firewall can lead to a fire breach and hazardous effects that have the same effects as the disconnect box with cracks. In addition, loose cover plates on the electrical side of the disconnect box, and vibration from the airplane and engine can cause damage to the electrical connectors and wire routing into, through, and out of

the disconnect box. Damaged electrical connectors or wires can cause unwanted engine indication and crew alerting system (EICAS) messages or non-responsive action by the crew when there are actual EICAS messages. Damaged electrical connectors or wires can create an ignition source for flammable fluids and result in an uncontained strut fire or fuel explosion.

Relevant Service Information

We reviewed Boeing Service Bulletin 777-54A0024, Revision 2, dated January 23, 2014. For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0580.

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 retain all requirements of AD 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011). This proposed AD would add, for certain airplanes, an inspection of the side and top cover plates to determine if all cover plate attach fasteners have been installed, and installing any missing fasteners including doing an inspection for damage, and repair if necessary.

Costs of Compliance

We estimate that this proposed AD affects 54 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
Inspections [retained actions from AD 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011)]	18 work-hours X \$85 per hour = \$1,530	\$0	\$1,530	\$82,620
Inspection of cover plate fasteners [new proposed action]	8 work-hours X \$85 per hour = \$680	\$0	\$680	\$36,720

We estimate the following costs to do any necessary repairs/replacements that would be required based on the results of the proposed inspections. We have no way of determining the number of aircraft that might need these repairs/replacements:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Replacement [retained actions from AD 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011)]	35 work-hours X \$85 per hour = \$2,975	\$420,440	\$423,415
Inspection of electrical components and installation of new fasteners [new proposed actions]	14 work-hours X \$85 per hour = \$1,190	\$458	\$1,648

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 proposed regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We have determined that this 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 that the 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 removing Airworthiness Directive (AD) 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011), and adding the following new AD:

The Boeing Company: Docket No. FAA-2014-0580; Directorate Identifier 2014-NM-081-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

(b) Affected ADs

This AD replaces AD 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011).

(c) Applicability

This AD applies to The Boeing Company Model 777-200 and -300 series airplanes, certificated in any category; equipped with Pratt and Whitney engines; as identified in Boeing Service Bulletin 777-54A0024, Revision 2, dated January 23, 2014.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports of system disconnect boxes that have been contaminated with hydraulic fluid and, in one incident, led to subsequent cracking of titanium parts in the system disconnect assembly. We have received reports of side and top cover plates installed with missing fastener bolts, which results in an unsealed opening on the system disconnect assembly. We are issuing this AD to detect and correct hydraulic fluid contamination, which can cause cracking of titanium parts in the system disconnect assembly; and also to detect and correct missing fasteners, which results in unsealed openings on the system disconnect assembly. Both unsafe conditions can compromise the engine firewall and result in fire hazards for both the engine compartment and the strut.

(f) Compliance

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

(g) Retained Inspections and Corrective Actions with Revised Service Information

This paragraph restates the requirements of paragraph (g) of AD 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011), with revised service information. Within 12 months after June 6, 2011 (the effective date of AD 2011-09-11): Do a general visual inspection for hydraulic fluid contamination of the interior of the strut disconnect assembly, in accordance with Part 1 of the Accomplishment Instructions of Boeing Service Bulletin 777-54A0024, Revision 1, dated November 4, 2010; or Revision 2, dated January 23, 2014. As of the effective date of this AD, use only Boeing Service Bulletin 777-54A0024, Revision 2, dated January 23, 2014, for accomplishing the actions in this paragraph.

(1) For airplanes on which no hydraulic fluid contamination is found

(Condition 1): Repeat the general visual inspection required by paragraph (g) of this AD

thereafter at intervals not to exceed 6,000 flight cycles or 750 days, whichever occurs first.

(2) For airplanes on which hydraulic fluid contamination is found (Condition 2): Before further flight, do a detailed inspection for discrepancies (e.g., hydraulic fluid coking, heat discoloration, cracks, and etching or pitting) of the interior of the strut disconnect assembly, in accordance with Part 2 of the Accomplishment Instructions of Boeing Service Bulletin 777-54A0024, Revision 1, dated November 4, 2010; or Revision 2, dated January 23, 2014. As of the effective date of this AD, use only Boeing Service Bulletin 777-54A0024, Revision 2, dated January 23, 2014, for accomplishing the actions in this paragraph.

(i) For airplanes on which no discrepancy is found during the inspection required by paragraph (g)(2) of this AD (Condition 2A): Repeat the detailed inspection required by paragraph (g)(2) of this AD thereafter at intervals not to exceed 6,000 flight cycles or 750 days, whichever occurs first.

(ii) For airplanes on which hydraulic fluid coking or heat discoloration is found but no cracking, etching, or pitting is found during the inspection required by paragraph (g)(2) of this AD (Condition 2B): Do the actions required by paragraph (g)(2)(ii)(A) and (g)(2)(ii)(B) of this AD.

(A) Within 300 flight cycles after doing the inspection required by paragraph (g)(2) of this AD: Do a detailed inspection of the exterior of the strut disconnect assembly for cracks, in accordance with Part 3 of the Accomplishment Instructions of Boeing Service Bulletin 777-54A0024, Revision 1, dated November 4, 2010; or Revision 2, dated January 23, 2014; and repeat the detailed inspection thereafter at intervals not to exceed 300 flight cycles. As of the effective date of this AD, use only Boeing Service Bulletin 777-54A0024, Revision 2, dated January 23, 2014, for accomplishing the actions in this paragraph.

(B) Within 6,000 flight cycles or 750 days after hydraulic fluid coking and/or heat discoloration was found during the inspection required by paragraph (g)(2) of this AD, whichever occurs first: Replace the titanium system disconnect assembly with an Inconel system, in accordance with Part 4 of the Accomplishment Instructions of Boeing Service Bulletin 777-54A0024, Revision 1, dated November 4, 2010; or Revision 2, dated January 23, 2014. As of the effective date of this AD, use only Boeing Service Bulletin 777-54A0024, Revision 2, dated January 23, 2014, for accomplishing the actions in this paragraph.

(h) Retained Corrective Action with Revised Service Information

This paragraph restates the requirements of paragraph (h) of AD 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011), with revised service information. For airplanes on which any crack, etching, or pitting is found during any inspection required by paragraph (g)(2) or (g)(2)(ii)(A) of this AD (Condition 3): Before further flight, replace the titanium system disconnect assembly with an Inconel system, in accordance with Part 4 of the Accomplishment Instructions of Boeing Service Bulletin 777-54A0024, Revision 1, dated November 4, 2010; or Revision 2, dated January 23, 2014. As of the effective date of this AD, use only Boeing Service Bulletin 777-54A0024, Revision 2, dated January 23, 2014, for accomplishing the actions in this paragraph.

(i) Retained Optional Terminating Action with Revised Service Information

This paragraph restates the requirements of paragraph (i) of AD 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011), with revised service information. Replacing the titanium system disconnect assembly with an Inconel system disconnect assembly in accordance with Part 4 of the Accomplishment Instructions of Boeing Service Bulletin 777-54A0024, Revision 1, dated November 4, 2010; or Revision 2, dated January 23, 2014; terminates the actions required by paragraphs (g) and (h) of this

AD. As of the effective date of this AD, use only Boeing Service Bulletin 777-54A0024, Revision 2, dated January 23, 2014, for accomplishing the actions in this paragraph.

(j) New Inspection and Corrective Action

For airplanes on which the system disconnect assembly has been replaced in accordance with Part 4 of the Accomplishment Instructions of Boeing Service Bulletin 777-54A0024, dated April 1, 2010; or Revision 1, dated November 4, 2010: Within 1,125 days after the effective date of this AD, do a detailed inspection of the cover plate fasteners to determine if all cover plate attach fasteners are installed, in accordance with Part 5 of the Accomplishment Instructions of Boeing Service Bulletin 777-54A0024, Revision 2, dated January 23, 2014. If any fastener is missing, before further flight, install fasteners (including doing a detailed inspection for damage of the electrical components and repairing any damaged components), in accordance with Part 6 of the Accomplishment Instructions of Boeing Service Bulletin 777-54A0024, Revision 2, dated January 23, 2014.

(k) Credit for Previous Actions

This paragraph restates the credit provided by paragraph (j) of AD 2011-09-11, Amendment 39-16673 (76 FR 24354, May 2, 2011). This paragraph provides credit for the corresponding actions required by paragraphs (g), (h), and (i) of this AD, if those actions were performed before June 6, 2011 (the effective date of AD 2011-09-11) using Boeing Service Bulletin 777-54A0024, dated April 1, 2010, which is not incorporated by reference in this AD.

(l) 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 (m)(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 required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(m) Related Information

(1) For more information about this AD, contact Kevin Nguyen, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6501; fax: 425-917-6590; email: kevin.nguyen@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 August 15, 2014.

Jeffrey E. Duven,
Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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