



## 適航指令發布單

## Airworthiness Directive Issuance Form

民航局AD編號 AD Number	CAA-2016-06-007	發布日期 Date issued	2016/6/16
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	The Boeing Company Model 777-200 and -300 series airplanes, certificated in any category, equipped with Pratt and Whitney engines, as identified in Boeing Special Attention Service Bulletin 777-71-0055, Revision 1, dated April 15, 2015.		
主旨摘要	Powerplant - Forward Strut Drain Lines - Maintenance / Installation / Inspection		
民航局 CAA  <input type="checkbox"/> 本國產品 Native products  <input type="checkbox"/> 其他個案 Other	設計國民航主關機構 Original Authorities <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 _____		
	設計國AD編號 Original AD number	2016-11-07	
	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	(i) This AD affects the FAA ADs 2014-20-10(CAA-2014-10-004) and 2015-17-13(CAA-2015-09-003). (ii) Boeing Special Attention Service Bulletin 777-54-0028, Revision 1, dated December 10, 2013. (iii) Boeing Special Attention Service Bulletin 777-71-0055, Revision 1, dated April 15, 2015. (iv) Airworthiness Limitation 54-AWL-01, 'Forward Strut Drain Line,' as specified in Section D.4, Pratt and Whitney Forward Strut Drain Line, dated March 2014, of the Boeing 777 Maintenance Planning Data Document Section 9, Airworthiness Limitations and Certification Maintenance Requirements, D622W001-9, dated October 2014.		
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)2349-6331~3, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw 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)2349-6331~3, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw			

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2015-8130; Directorate Identifier 2014-NM-175-AD; Amendment 39-18534; AD 2016-11-07]**

**RIN 2120-AA64**

### **Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 777-200 and -300 series airplanes equipped with Pratt and Whitney engines. This AD was prompted by reports of blocked drain lines at the engine forward strut that caused flammable fluid to accumulate in a flammable leakage zone. This AD requires doing the following actions on the left strut and right strut: A one-time cleaning of certain forward strut drain lines; installing new forward strut drain lines and insulation blankets; a leak check of the forward strut drain lines; and repair if any leak is found. This AD also requires revising the maintenance or inspection program, as applicable, to incorporate a certain airworthiness limitation. We are issuing this AD to prevent blockage of forward strut drain lines. This condition could cause flammable fluids to collect in the forward strut area and potentially cause an uncontrolled fire or cause failure of engine attachment structure and consequent airplane loss.

**DATES:** This AD is effective July 12, 2016.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of July 12, 2016.

**ADDRESSES:** For service information identified in this final rule, 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-2015-8130.

## **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-2015-8130; 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 AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Docket Management Facility, 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:** 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](mailto:kevin.nguyen@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 certain The Boeing Company Model 777-200 and -300 series airplanes equipped with Pratt and Whitney engines. The NPRM published in the Federal Register on December 31, 2015 (80 FR 81788) ("the NPRM"). The NPRM was prompted by reports of blocked drain lines at the engine forward strut that caused flammable fluid to accumulate in a flammable leakage zone. The NPRM proposed to require doing the following actions on the left strut and right strut: A one-time cleaning of certain forward strut drain lines; installing new forward strut drain lines and insulation blankets; a leak check of the forward strut drain lines; and repair if any leak is found. The NPRM also proposed to require revising the maintenance or inspection program, as applicable, to incorporate a certain airworthiness limitation. We are issuing this AD to prevent blockage of forward strut drain lines. This condition could cause flammable fluids to collect in the forward strut area and potentially cause an uncontrolled fire or cause failure of engine attachment structure and consequent airplane loss.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM.

### **Support for the NPRM**

Boeing, United Airlines, and Airline Pilots Association International have no objections to the NPRM.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD as proposed, except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

## Related Service Information Under 1 CFR Part 51

We reviewed the following service information:

Boeing Special Attention Service Bulletin 777-54-0028, Revision 1, dated December 10, 2013. This service information describes procedures for a general visual inspection for hydraulic fluid contamination of the interior of the strut forward dry bay and corrective actions.

Boeing Special Attention Service Bulletin 777-71-0055, Revision 1, dated April 15, 2015. The service information describes procedures for installing new forward strut drain lines and insulation blankets on the left and right engines.

Airworthiness Limitation 54-AWL-01, "Forward Strut Drain Line," as specified in Section D.4, Pratt and Whitney Forward Strut Drain Line, dated March 2014, of the Boeing 777 Maintenance Planning Data (MPD) Document Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D622W001-9, dated October 2014. This service information describes an airworthiness limitation task for the functional check of the forward strut drain line.

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 54 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated Costs				
Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Cleaning strut drain lines, installing new drain lines and insulation blankets, doing a leak check, and revising the maintenance or inspection program	16 work-hours × \$85 per hour = \$1,360	\$17,080	\$18,440	\$995,760

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

According to the manufacturer, some 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 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**

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):



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**2016-11-07 The Boeing Company:** Amendment 39-18534; Docket No. FAA-2015-8130; Directorate Identifier 2014-NM-175-AD.

**(a) Effective Date**

This AD is effective July 12, 2016.

**(b) Affected ADs**

This AD affects the ADs specified in paragraphs (b)(1) and (b)(2) of this AD.

(1) AD 2014-20-10, Amendment 39-17983 (79 FR 60331, October 7, 2014) ("AD 2014-20-10").

(2) AD 2015-17-13, Amendment 39-18246 (80 FR 52948, September 2, 2015) ("AD 2015-17-13").

**(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 Special Attention Service Bulletin 777-71-0055, Revision 1, dated April 15, 2015.

**(d) Subject**

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

**(e) Unsafe Condition**

This AD was prompted by reports of blocked drain lines at the engine forward strut that caused flammable fluid to accumulate in a flammable leakage zone. We are issuing this AD to prevent blockage of forward strut drain lines. This condition could cause flammable fluids to collect in the forward strut area and potentially cause an uncontrolled fire or cause failure of engine attachment structure and consequent airplane loss.

**(f) Compliance**

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

**(g) Actions**

Within 4,000 flight cycles or 750 days after the effective date of this AD, whichever occurs later: Accomplish the actions specified in paragraphs (g)(1) through (g)(4) of this AD on the left and right struts, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-71-0055, Revision 1, dated April 15, 2015; and accomplish the revision specified in paragraph (g)(5) of this AD.

(1) Disconnect and remove the forward strut drain lines.

(2) Clean the left system disconnect, the strut forward lower spar, and the forward fireseal pan drain lines.

(3) Install new forward strut drain lines and insulation blankets.

(4) Do a leak check of the forward strut drain lines for any leak, and repair if any leak is found.

(5) Revise the maintenance or inspection program, as applicable, to incorporate Airworthiness Limitation 54-AWL-01, "Forward Strut Drain Line" as specified in Section D.4, Pratt and Whitney Forward Strut Drain Line, dated March 2014, of the Boeing 777 Maintenance Planning Data (MPD) Document Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D622W001-9, dated October 2014. The initial compliance time for Airworthiness Limitation 54-AWL-01 is within 2,000 flight cycles or 1,500 days, whichever occurs first, after doing the actions specified in paragraphs (g)(1) through (g)(4) of this AD.

#### **(h) No Alternative Actions or Intervals**

After accomplishing the revision required by paragraph (g)(5) of this AD, no alternative actions (e.g., inspections) or intervals may be used unless the actions or intervals are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (k) of this AD.

#### **(i) Terminating Action for Other ADs**

(1) Accomplishing the actions required by paragraph (g) of this AD terminates the actions required by paragraph (g) of AD 2015-17-13 at the modified area only.

(2) Accomplishing the actions specified in paragraphs (i)(2)(i) and (i)(2)(ii) of this AD terminates the inspections required by paragraph (g) of AD 2014-20-10 at the modified area only, provided the actions are accomplished concurrently, or the actions specified in paragraph (i)(2)(ii) of this AD are done after accomplishing the actions specified in paragraph (i)(2)(i) of this AD.

(i) The actions specified in paragraphs (g)(1) through (g)(4) of this AD on the left and right struts are done in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-71-0055, Revision 1, dated April 15, 2015; and the revision specified in paragraph (g)(5) of this AD is done.

(ii) A one-time general visual inspection for hydraulic fluid contamination (including contamination caused by hydraulic fluid in its liquid, vapor, and/or solid (coked) form) of the interior of the strut forward dry bay, and all applicable related investigative and corrective actions (including checking drain lines for blockage due to hydraulic fluid coking, and cleaning or replacing drain lines to allow drainage) are done in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-54-0028, Revision 1, dated December 10, 2013, except where Boeing Special Attention Service Bulletin 777-54-0028, Revision 1, dated December 10, 2013, specifies to contact Boeing for repair, the repair must be done using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

#### **(j) Credit for Previous Actions**

This paragraph provides credit for actions required by paragraphs (g)(1) through (g)(4) of this AD, if those actions were performed before the effective date of this AD using Boeing Special Attention Service Bulletin 777-71-0055, dated June 12, 2014, which is not incorporated by reference in this AD.

#### **(k) 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 (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 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) For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (k)(4)(i) and (k)(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.

#### **(l) Related Information**

(1) For more information about this AD, contact Kevin Nguyen, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle ACO, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6501; fax: 425-917-6590; email: kevin.nguyen@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 (m)(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 777-54-0028, Revision 1, dated December 10, 2013.

(ii) Boeing Special Attention Service Bulletin 777-71-0055, Revision 1, dated April 15, 2015.

(iii) Airworthiness Limitation 54-AWL-01, "Forward Strut Drain Line," as specified in Section D.4, Pratt and Whitney Forward Strut Drain Line, dated March 2014, of the Boeing 777 Maintenance Planning Data Document Section 9, Airworthiness Limitations and Certification Maintenance Requirements, D622W001-9, dated October 2014.

(3) For Boeing 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>.

(4) You may view this 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.



(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 Renton, Washington, on May 20, 2016.  
Victor Wicklund,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.