



[4910-13-P]

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2017-1107; Product Identifier 2016-NE-22-AD;]**

**RIN 2120-AA64**

**Airworthiness Directives; Pratt & Whitney Division Turbofan Engines**

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

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede Airworthiness Directive (AD) 2017-12-03, which applies to certain Pratt & Whitney Division (PW) PW2037, PW2037M, and PW2040 turbofan engines. AD 2017-12-03 requires installing a software standard eligible for installation and precludes the use of electronic engine control (EEC) software standards earlier than SCN 5B/I. Since we issued AD 2017-12-03, software became available for additional PW engines models. This proposed AD would require installing a software standard eligible for installation and preclude the use of EEC software standards earlier than SCN 5B/I or SCN 27A. We are proposing this AD to address the unsafe condition on these products.

**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 NPRM, contact Pratt & Whitney Division, 400 Main St., East Hartford, CT 06118; phone: 800-565-0140; fax: 860-565-5442. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

### **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-2017-1107; 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 NPRM, 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 Clark, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7088; fax: 781-238-7199; email: kevin.m.clark@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-2017-1107; Product Identifier 2016-NE-22-AD” at the

beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM 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 issued AD 2017-12-03, Amendment 39-18918 (82 FR 27411, June 15, 2017), (“AD 2017-12-03”), for PW PW2037, PW2037M, and PW2040 turbofan engines. AD 2017-12-03 requires installing a software standard eligible for installation and precludes the use of EEC software standards earlier than SCN 5B/I. AD 2017-12-03 resulted from an unrecoverable engine in-flight shutdown (IFSD) after an ice crystal icing event. We issued AD 2017-12-03 to prevent failure of the high-pressure turbine (HPT), rotor seizure, failure of one or more engines, loss of thrust control, and loss of the airplane.

### **Actions Since AD 2017-12-03 Was Issued**

Since we issued AD 2017-12-03, software became available for PW engines with EEC model number EEC104-1 with 26K memory. These are older engine models that did not have software fixes available when AD 2017-12-03 was issued.

### **Related Service Information**

We reviewed PW Alert Service Bulletin (ASB) PW2000 A73-170, dated July 14, 2016 and PW ASB PW2000 A73-171, dated March 24, 2017. The ASBs describe procedures for modifying or replacing the EEC.

### **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 the requirements of AD 2017-12-03. This proposed AD would add additional, older engine models to the applicability.

### **Costs of Compliance**

We estimate that this proposed AD affects 587 engines, installed on airplanes of U.S. registry.

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

#### **Estimated costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
EEC software installation	1.8 work-hours X \$85 per hour = \$153	0	\$153	\$89,811

### **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 engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

### **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) 2017-12-03, Amendment 39-18918 (82 FR 27411), and adding the following new AD:

**Pratt & Whitney Division:** Docket No. FAA-2017-1107; Product Identifier 2016-NE-22-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 2017-12-03, Amendment 39-18918 (82 FR 27411, June 15, 2017).

#### **(c) Applicability**

This AD applies to:

(1) All Pratt & Whitney Division (PW) PW2037, PW2037M, and PW2040 turbofan engines with electronic engine control (EEC), model number EEC104-40 or EEC104-60, installed, with an EEC software standard earlier than SCN 5B/I; and

(2) All PW PW2037, PW2037M, and PW2040 turbofan engines with EEC, model number EEC104-1 with part numbers (P/Ns) 1B7484, 1B7486, 1B7984, or 1B7985, installed, with an EEC software standard earlier than SCN 27A.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7321, Fuel Control Turbine Engines.

**(e) Unsafe Condition**

This AD was prompted by an unrecoverable engine in-flight shutdown (IFSD) after an ice crystal icing event. We are issuing this AD to prevent failure of the high-pressure turbine (HPT) and rotor seizure. The unsafe condition, if not corrected, could result in failure of one or more engines, loss of thrust control, and loss of the airplane.

**(f) Compliance**

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

**(g) Required Actions**

(1) For an engine with an EEC model number EEC104-40 or EEC104-60 and a serial number (S/N) listed in Figure 1 to paragraph (g) of this AD, upgrade any EEC software standards earlier than SCN 5B/I or replace the EEC with a part eligible for installation at the next engine shop visit, or before December 1, 2018, whichever occurs first.

(2) For an engine with an EEC model number EEC104-40 or EEC104-60 and an S/N not listed in Figure 1 to paragraph (g) of this AD, upgrade any EEC software standards earlier than SCN 5B/I or replace the EEC with a part eligible for installation at the next engine shop visit, or before July 1, 2024, whichever occurs first.

(3) For an engine with an EEC model number EEC104-1 with PN 1B7484, 1B7486, 1B7984, or 1B7985, upgrade any EEC software standards earlier than SCN 27A or replace the EEC with a part eligible for installation at the next engine shop visit, or before July 1, 2024, whichever occurs first.

**Figure 1 to Paragraph (g) – Engine S/Ns**

716402	727272	728741
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727103	727280	728743
727134	727281	728748
727152	727282	728779
727158	727286	728785
727189	727287	728795
727202	727288	728806
727204	728709	728811
727231	728715	728812
727239	728716	728820
727240	728719	728824
727251	728720	728826
727252	728725	728827
727253	728726	728840
727257	728729	728864
727269	728730	728870

**(h) Installation Prohibition**

After the effective date of this AD, do not install any software standard earlier than:

- (1) SCN 5B/I into any EEC model number EEC104-40 or EEC104-60; or
- (2) SCN 27A into any EEC model number EEC104-1.

**(i) Definition**

For the purpose of this AD, an “engine shop visit” is the induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine flanges, except that the separation of engine flanges solely for the purposes of transportation without subsequent engine maintenance does not constitute an engine shop visit.

**(j) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, ECO 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 (k)(1) of this AD. You may email your request to: ANE-AD-AMOC@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.

**(k) Related Information**

(1) For more information about this AD, contact Kevin Clark, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7088; fax: 781-238-7199; email: kevin.m.clark@faa.gov.

(2) For service information identified in this AD, contact Pratt & Whitney Division, 400 Main St., East Hartford, CT 06118; phone: 800-565-0140; fax: 860-565-5442. You may view this referenced service information at the FAA, FAA, Engine & Propeller Standards Branch, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on December 11, 2017.

Robert J. Ganley,  
Manager, Engine and Propeller Standards Branch,  
Aircraft Certification Service.

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