



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0924; Product Identifier 2018-NE-34-AD; Amendment 39-19600; AD 2019-06-02]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney Division Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Pratt & Whitney Division (PW) PW4158 turbofan engines. This AD was prompted by several reports of high cycle fatigue (HCF) cracks found in the fuel nozzle supply manifold. This AD requires replacement of the affected fuel nozzles and fuel nozzle manifold supply assemblies with parts eligible for installation. This AD also requires installation of new brackets and clamps on the fuel nozzle supply manifold assemblies. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact Pratt & Whitney, 400 Main Street, East Hartford, CT, 06108; phone: 860-565-8770; fax: 860-565-4503. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the

availability of this material at the FAA, call 781-238-7759. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0924.

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-2018-0924; 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 (phone: 800-647-5527) 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: Scott Hopper, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7154; fax: 781-238-7199; email: scott.hopper@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 PW PW4158 turbofan engines. The NPRM published in the Federal Register on November 19, 2018 (83 FR 58199). The NPRM was prompted by several reports of HCF cracks found in the fuel nozzle supply manifold. The NPRM proposed to require replacement of the affected fuel nozzles and fuel nozzle manifold supply assemblies with parts eligible for installation. The NPRM also proposed to require installation of new brackets and clamps on the fuel nozzle supply manifold assemblies. We are issuing this AD to address the unsafe condition on these products.

Comments

We 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.

Request to Use Overhauled Fuel Manifolds

United Parcel Service Co. (UPS) and Pratt & Whitney requested that the AD clarify that overhauled fuel manifolds that have had new tube details installed meet the intent of installing new fuel manifolds called for in Pratt & Whitney Service Bulletin (SB) PW4ENG 73-224, dated November 8, 2017. UPS and Pratt & Whitney noted that the equivalent Pratt & Whitney SB PW4G-100-73-48, Revision No. 1, dated April 24, 2018, for PW PW4000-100 engines, allows use of repaired manifolds.

We disagree because Pratt & Whitney SB PW4ENG 73-224, dated November 8, 2017, does not allow the installation of overhauled fuel manifolds with new tube details. We recommend that operators who would like to use overhauled manifolds submit an AMOC request.

Request to Clarify Applicability

SR Technics Switzerland Ltd. requested we clarify the identification of potentially affected engines since part number (P/N) 51J228 is a sales order option and does not appear in PW service bulletins. UPS recommended that we revise the applicability to refer to "All Engines that incorporate Talon II Burner Sales Order Option P/N 51J228." The commenters indicated that P/N 51J228 is not listed in the applicable PW parts catalogue or in a service bulletin.

We partially agree. We agree to clarify the applicability of this AD. We disagree with referring to "engines that incorporate Talon II Burner Sales Order Option P/N 51J228" as this reference is not sufficiently clear to operators. We revised the Applicability of this AD to refer to the specifically affected engine serial numbers.

Request for Previous Credit

UPS requested that the rule include a “Credits for Previous Actions” section in this AD stating that affected engines that have fully incorporated prior revisions of both Pratt & Whitney SB PW4ENG 73-223, dated February 5, 2018, and Pratt & Whitney SB PW4ENG 73-224, dated November 8, 2017, may take credit for the required actions.

UPS reasoned that PW is considering publishing a revision to Pratt & Whitney SB PW4ENG 73-224 that will allow use of overhauled fuel supply manifolds.

We disagree. We cannot give credit for previous action based on service bulletins that have not been published. We did not change this AD.

Request to Revise Compliance

UPS commented that paragraph (g)(1) in the NPRM only referred to P/N 51J344. UPS noted that there are other pre-SB 73-223 part numbers, such as P/N 51J235, that may be found installed in Talon II engines. UPS suggested that we revise the compliance paragraph (g)(1) in this AD to be similar to paragraph (g)(2) of this AD—for example, “Replace the 24 fuel nozzles with part number 51J397 per Pratt & Whitney SB PW4ENG 73-223.”

We agree. Fuel nozzle designs other than P/N 51J397 are also susceptible to braze joint cracking. We revised paragraph (g)(1) of this AD based on the change suggested by the commenter.

Support for the AD

The Air Line Pilots Association International expressed support for the AD as written.

Conclusion

We 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. We have 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.

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

Related Service Information under 1 CFR part 51

We reviewed Pratt & Whitney SB PW4ENG 73-224, dated November 8, 2017. The SB describes procedures for replacing the fuel nozzle supply manifold assemblies with parts eligible for installation, and installing new brackets and clamps on the fuel nozzle supply manifolds. 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.

Other Related Service Information

We reviewed Pratt & Whitney SB PW4ENG 73-223, dated February 5, 2018. This SB describes procedures for replacing the fuel nozzles and fuel nozzle support assemblies with parts eligible for installation.

Costs of Compliance

We estimate that this AD affects 114 engines installed on 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
Remove and replace (24) fuel nozzles	48 work-hours x \$85 per hour = \$4,080	\$423,471.12	\$427,551.12	\$48,740,827.68
Replace fuel supply manifold tubes and install new clamps and brackets	16 work-hours x \$85 per hour = \$1,360	\$77,158.97	\$78,518.97	\$8,951,162.58

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

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):

2019-06-02 **Pratt & Whitney Division:** Amendment 39-19600; Docket No. FAA-2018-0924; Product Identifier 2018-NE-34-AD.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Pratt & Whitney Division PW4158 turbofan engines designated by a -3 on the Engine Data Plate and with the following engine serial numbers: 728534 to 728555; 728557 to 728585; 728587 to 728591; 728593; 728598; 729808 to 729824; or 729826 to 729864.

(d) Subject

Joint Aircraft System Component (JASC) Code 7310, Engine Fuel Distribution.

(e) Unsafe Condition

This AD was prompted by several reports of high cycle fatigue (HCF) cracks found in the fuel nozzle supply manifold tube at the braze joint interface. We are issuing this AD to prevent failure of the fuel nozzles. The unsafe condition, if not addressed, could result in engine fire, damage to the engine, and damage to the airplane.

(f) Compliance

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

(g) Required Actions

No later than the next engine shop visit after the effective date of this AD, do the following:

(1) Remove any of the 24 fuel nozzles, part number (P/N) 51J235 or 51J344, and replace with P/N 51J397.

(2) Replace the fuel nozzle manifold supply assemblies and install new brackets and clamps on the fuel supply manifolds in accordance with the “For Engines Installed on Aircraft” or “For Engines Not Installed on Aircraft” sections, as applicable, of the Accomplishment Instructions in Pratt & Whitney Service Bulletin (SB) PW4ENG 73-224, dated November 8, 2017.

(h) Definitions

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 case flanges, except for the following situations, which do not constitute an engine shop visit:

(1) Separation of engine flanges solely for the purposes of transportation of the engine without subsequent maintenance.

(2) Separation of engine flanges solely for the purposes of replacing the fan or propulsor without subsequent maintenance.

(i) 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 (j) of this AD. Information may be emailed 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.

(j) Related Information

For more information about this AD, contact Scott Hopper, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7154; fax: 781-238-7199; email: scott.hopper@faa.gov.

(k) 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) Pratt & Whitney Service Bulletin PW4ENG 73-224, dated November 8, 2017.

(ii) [Reserved]

(3) For Pratt & Whitney service information identified in this AD, contact Pratt & Whitney, 400 Main Street, East Hartford, CT, 06108; phone: 860-565-8770; fax: 860-565-4503.

(4) You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

(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 Burlington, Massachusetts, on March 19, 2019.

Karen M. Grant,
Acting Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.

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