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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2017–0817; Product Identifier 2017–NE–30–AD; Amendment 39–19314; AD 2018–13–02]

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 all Pratt & Whitney Division (PW) PW4052, PW4056, PW4060, PW4062, PW4062A, PW4152, PW4156A, PW4158, PW4460, and PW4462 turbofan engine models, including engines identified with suffixes –1C, –1E, –3, –3A, or –3B. This AD was prompted by the discovery of multiple cracked 4th stage low-pressure turbine (LPT) air seals in the fleet. This AD requires removal from service of certain 4th stage LPT air seals. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective July 20, 2018.

ADDRESSES: For service information identified in this final rule, 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 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–2017–0817.

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–2017–0817; 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: Jo-Ann Theriault, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781–238–7105; fax: 781–238–7199; email: *jo-ann.theriault@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 all Pratt & Whitney Division (PW) PW4052, PW4056, PW4060, PW4062, PW4062A, PW4152, PW4156A, PW4158, PW4460, and PW4462 turbofan engine models, including engines identified with suffixes –1C, –1E, –3, –3A, or –3B. The NPRM published in the **Federal Register** on October 12, 2017 (82 FR 47405). The NPRM was prompted by the discovery of multiple cracked 4th stage LPT air seals, part number (P/N) 50N346, in the fleet. An investigation determined there is insufficient clearance to the 4th stage LPT vane cluster honeycomb that makes up the other half of the sealing system. Also, the knife edge seals are uncoated so they are more susceptible to overheating if a hard rub with the honeycomb occurs. The NPRM proposed to require the removal from service of certain 4th stage LPT air seals. Replacement of the air seal also requires replacement of the 4th stage LPT vane cluster honeycomb. This condition, if not corrected, could result in failure of the air seal, uncontained air seal release, damage to the engine, and damage to the airplane. 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 Clarify Compliance Time

United Parcel Service, United Airlines, SR Technics, Delta Airlines (DAL), Atlas Air, Federal Express (FedEx), and the Boeing Company requested that we clarify the compliance time requirement specified in the NPRM, paragraph (f)(1), which stated ''at the next disassembly of the LPT module, remove 4th stage air seal, P/N 50N346, from service and replace with a part eligible for installation'' because the term ''disassembly'' is subjective and not defined elsewhere in the NPRM. DAL requested that we specify a compliance time in the final rule since paragraph (f)(1) of the NPRM indicates that the compliance actions should be done in accordance with the compliance times specified in the AD.

We agree. We clarified that the compliance in this AD should be performed ''the next time the 4th stage LPT vanes are removed from the LPT module.''

Request for Clarification on Installation Prohibition

DAL requested clarification on the acceptability of returning an LPT to service with P/N 50N346 installed if the air seal was not exposed at the piece-part level, because the LPT disassembly was limited.

An LPT module with a 4th stage air seal, P/N 50N346, installed, may be returned to service, if the 4th stage LPT vanes are not removed. However, replacement of the 4th stage air seal is required, when the 4th stage LPT vanes are removed. This would include, if the 4th stage LPT air seal was at the piece-part exposure level.

Request for Clarification on Replacement of Affected Air Seals

Cathay Pacific Airways (CPA) asked if replacing the 4th stage LPT air seal, P/N 50N346, with any of the other 4th stage LPT air seals depicted in the Illustrated Parts Catalog (IPC) fulfills the AD requirement or if P/N 51N113 is the only suitable air seal for replacement. CPA further requested that we define what is ''a part eligible for installation''

in paragraph (f)(1) of the NPRM which states ''at the next disassembly of the LPT module, remove 4th stage air seal, P/N 50N346, from service and replace with a part eligible for installation.''

Currently, P/N 51N113 is the only 4th stage LPT air seal suitable for P/N 50N346 replacement. However, new replacement air seals may be developed in the future. We did not change this AD.

Service Bulletin Comment

CPA stated that PW Service Bulletin (SB) PW4ENG A72–830, Revision No. 1, dated May 2, 2017, listed P/N 51N113 as the only part eligible for installation. However, the service bulletin is not clearly listed in paragraph (f) of the NPRM.

We disagree. We listed PW SB PW4ENG A72–830, Revision No. 1, dated May 2, 2017, in the ''Related Service Information'' section of the NPRM, which was the appropriate paragraph. We did not change this AD.

Request for Clarification on Applicability of AD

Atlas Air asked if the AD applies to engines with 4th stage LPT air seals, P/N 51N038, 50N478, or 50N478–001, installed.

We determined this AD only applies to engines with 4th stage LPT air seal, P/N 50N346, installed.

Request for Clarification on Repair Limits

Atlas Air asked if PW Clean, Inspect, Repair (CIR) 72–53–40 Inspection/Check-03 limits apply to the 4th stage LPT air seal, P/N 51N113. If so, Atlas Air is concerned that the reduced knife edge might get scrapped due to reduced diameters.

The intent of this AD is to install a 4th stage LPT air seal with reduced knife edge diameters. This AD does not impact the CIR 72–53–40 Inspection/Check-03 limits.

Request for Clarification on Re-Installation Prohibition

Atlas Air asked if 4th stage LPT air seals, P/N 51N038, 50N478, or 50N478–001 are prohibited from re-installation.

We determined that 4th stage LPT air seals, P/N 51N038, 50N478, and 50N478–001, are not applicable to the engines affected by this AD.

Request for Clarification on Effective Date

SR Technics asked when this AD will become effective.

This AD will be effective 35 days after publication in the **Federal Register**.

Request for Clarification on Part Modification

PW stated that the new part can be obtained by modification of the old part as specified in PW SB PW4ENG A72–830, Revision No. 1, dated May 2, 2017.

We agree. The new 4th stage LPT air seal, P/N 51N113, can be obtained through modification of the old air seal, P/N 50N346, as noted in PW SB PW4ENG A72–830, Revision No. 1, dated May 2, 2017.

Request for Clarification on Honeycomb Replacement

DAL and FedEx note that the NPRM states ''Replacement of the air seal also requires replacement of the 4th stage LPT vane cluster honeycomb'' in the ''Discussion'' paragraph. However, paragraph (f) in the NPRM does not address honeycomb replacement. The commenters asked if the FAA intends to require the replacement of the honeycomb.

This AD addresses the unsafe condition created by a cracked 4th stage LPT air seal by replacing the air seal with a part that does not crack. Installation of the new air seal without replacement of the 4th stage LPT vane cluster honeycomb results in an increased radial clearance between the honeycomb and air seals. This is not an approved configuration. Requirements for replacement of the honeycomb when an air seal is replaced are defined in the appropriate service information, such as PW CIR Manual P/N 51A357, Chapter/Section 72–53–24, Repair-02. We did not change this AD.

Supportive Comment

The Air Line Pilots Association International expressed support for this AD.

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 for 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

We reviewed PW SB PW4ENG A72–830, Revision No. 1, dated May 02, 2017. The SB describes procedures for replacement or modification of the 4th stage LPT air seals.

Costs of Compliance

We estimate that this AD affects 991 engines installed on aircraft 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
Replacement of air seal	0 work-hours × $85 per hour = $0	$13,800	$13,800	$13,675,800

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):

2018–13–02 Pratt & Whitney Division: Amendment 39–19314; Docket No. FAA–2017–0817; Product Identifier 2017–NE–30–AD.

(a) Effective Date

This AD is effective July 20, 2018.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Pratt & Whitney Division (PW) PW4052, PW4056, PW4060, PW4062, PW4062A, PW4152, PW4156A, PW4158, PW4460, and PW4462 turbofan engine models, including engines identified with suffixes –1C, –1E, –3, –3A, or –3B, with 4th stage low-pressure turbine (LPT) air seal, part number (P/N) 50N346, installed.

(d) Subject

Joint Aircraft System Component (JASC) Code 7240, Turbine Engine Combustion Section.

(e) Unsafe Condition

This AD was prompted by the discovery of multiple cracked air seals. We are issuing this AD to prevent failure of the 4th stage LPT air seal. This unsafe condition, if not addressed, could result in uncontained release of the air seal, 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

The next time the 4th stage LPT vanes are removed from the LPT module, remove 4th stage air seal, P/N 50N346, from service and replace with a part eligible for installation.

(h) Installation Prohibition

After the effective date of this AD, do not install any 4th stage LPT air seal, P/N 50N346, into any LPT module.

(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. 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.

(j) Related Information

For more information about this AD, contact Jo-Ann Theriault, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781–238–7105; fax: 781–238–7199; email: *jo-ann.theriault@faa.gov.*

(k) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on June 11, 2018.

Robert J. Ganley,

Manager, Engine and Propeller Standards Branch, Aircraft Certification Service.

[FR Doc. 2018–12830 Filed 6–14–18; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2018–0501; Product Identifier 2018–NE–19–AD; Amendment 39–19304; AD 2018–11–16]

RIN 2120–AA64

Airworthiness Directives; Engine Alliance Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Engine Alliance (EA) GP7270, GP7272, and GP7277 turbofan engines. This AD requires a one-time eddy current inspection (ECI) of the engine fan hub blade slot bottom and blade slot front edge for cracks, a visual inspection of the engine fan hub for damage, and removal of parts if damage or defects are found that are outside serviceable limits. This AD was prompted by an uncontained failure of the engine fan hub. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective July 2, 2018.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of July 2, 2018.

We must receive comments on this AD by July 30, 2018.

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:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this final rule, contact Engine Alliance, 411 Silver Lane, East Hartford, CT 06118; phone: 800–565–0140; email: *help24@pw.utc.com;* website: *www.engineallianceportal.com.* You may view this service information at the FAA, Engine and Propeller Standards