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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2013-0072; Directorate Identifier 2013-NE-04-AD; Amendment 39-17525; AD 2013-15-09]

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) turbofan engine model PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, and PW4090-3 with a certain second-stage high-pressure turbine (HPT) air seal part number installed. This AD was prompted by discovery of cracks in second-stage HPT air seals. This AD requires inspection and removal from service of HPT air seals that fail inspection. We are issuing this AD to prevent failure of the second-stage HPT air seal, which could lead to an uncontained engine failure and damage to the airplane.

DATES: This AD is effective September 17, 2013. The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of September 17, 2013.

ADDRESSES: The Docket Operations office is located at Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

For service information identified in this AD, contact Pratt & Whitney, 400 Main St., East Hartford, CT 06108; phone: 860-565-8770; fax: 860-565-4503. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, 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>; 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 street address for the Docket Office (phone: 800-647-5527) is provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: James Gray, Aerospace Engineer, Engine & Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7742; fax: 781-238-7199; email: james.e.gray@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. The NPRM published in the Federal Register on March 18, 2013 (78 FR 16620). The NPRM proposed to require, for those air seals that meet certain cycles since new criteria, inspection and removal from service of HPT air seals that fail inspection.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal (78 FR 16620, March 18, 2013) and the FAA's response to each comment.

Request To Provide Credit for Prior Compliance

All Nippon Airways Co., Ltd (ANA) and Japan Airlines (JAL) requested that credit be provided for inspections that were performed using prior versions of Alert Service Bulletin (ASB) No. PW4G-112-A72-330. The reason for this request is that the inspection procedure and inspection limits have not changed, so inspections using the prior version of the ASB should remain valid.

We agree. We added a Credit for Previous Actions paragraph as follows: "You may take credit for eddy current inspections (ECIs) performed prior to the effective date of this AD using PW ASB No. PW4G-112-A72-330, dated December 3, 2012 or PW ASB No. PW4G-112-A72-330, Revision 1, dated February 26, 2013."

Request To Change Compliance Time

ANA, JAL, PW, and United Airlines (UAL) requested that the Compliance paragraph for the on-wing ECI be changed to remove the air seal from service within five cycles, instead of before further flight. The inspection will likely be performed on-wing and not at a major maintenance facility. Removal from service before further flight would lead to potential aircraft-on-ground situations. The change is also consistent with the PW ASB.

We agree. Removal from service within five cycles maintains an acceptable level of safety while allowing the operators some flexibility in removing the part from service. We changed the Compliance paragraph of this AD to fulfill this request.

Request for Clarification of Terminating Action

ANA requested clarification on what the terminating action is. Although not specifically stated, the inference is that the commenter wants terminating action to be included in the AD.

We partially agree. We agree that the inspection program is an interim action. The terminating action to the repetitive inspections will be installation of a redesigned second-stage HPT air seal. We disagree with revising the AD to include terminating action at this time because the redesign is not yet available. We will take appropriate actions when the redesign is available. We did not change the AD.

Request To Delay Issuance of AD

UAL requested that the AD be delayed for six months and that the comment period be re-opened. The reason for this request is that the majority of operators have not received training or have just received training on the inspection procedure and therefore are unable to provide substantive comments. Delaying the comment period will allow for more substantive comments to the NPRM (78 FR 16620, March 18, 2013).

We do not agree. The risk analysis does not support delaying the AD an additional six months. It is anticipated that all operators will receive training prior to the AD becoming effective. If changes to the inspection procedure are required, they can be handled through the Alternative Methods of Compliance paragraph of this AD. We did not change the AD.

Request To Not Mandate Use of the Service Bulletin Incorporated By Reference (IBR)

UAL and PW requested that the AD not mandate the service bulletin IBR and include just the inspection criteria in the AD, or modify the mandated actions to only include the inspection criteria. The reason for this request is that the inspection procedure needs to be flexible and adaptable as unexpected inspection procedures are found. One commenter also identified several issues with the way the inspection procedure is currently worded, including use of a "50 foot extension cord" and a "black Sharpie" which, if included in the IBR, would force operators to use these specific items.

We partially agree. We agree that the the AD does not need to mandate the entire inspection procedure, because not all aspects of the inspection procedure are unique. We disagree with not mandating the service bulletin at all, because aspects of the ECI are unique and would not necessarily be covered under general maintenance. If performed incorrectly, the inspection might not detect potential cracks. We revised this AD to only mandate the inspection itself, including how to disposition the ECI results.

Request To Address Serviceability Limits

UAL noted that ASB No. PW4G-112-A72-330, Revision 1, dated February 26, 2013, allows for some grinding of the T-2 nozzle guide vane (NGV), if needed, to gain access to the second-stage HPT airseal. There is also a procedure in the ASB to use an alternate access port if there is entrapped material preventing access to the primary port. The commenter requested that serviceability limits for both of these scenarios be included in the ASB. There was no justification provided for this request. It is inferred that the commenter is concerned that serviceability limits were not included.

We do not agree. Grinding of the T-2 NGV and using the alternate access port are not necessarily required to perform the inspection and are not mandated as part of this AD. We did not change the AD.

Request To Include Reduced Inspection Interval

UAL requested that we include a reduced inspection interval based on the results of the ECI, as described in PW ASB No. PW4G-112-A72-330. The change is requested because this interval is included in the ASB, but not included in the NPRM (78 FR 16620, March 18, 2013).

We agree. The reduced inspection interval was unintentionally omitted in the NPRM (78 FR 16620, March 18, 2013). We revised the AD as requested.

Request To Change Compliance Time

PW requested that the 1,000 cycle drawdown in paragraph (e)(2) of the NPRM (78 FR 16620, March 18, 2013) be effective December 2012, as opposed to after the effective date of the AD, to coincide with PW ASB No. PW4G-112-A72-330.

We do not agree. We cannot reference a date in the past, as requested, since operators must have the opportunity to comply with the AD. We did not change the AD.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD 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 (78 FR 16620, March 18, 2013) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (78 FR 16620, March 18, 2013).

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

Interim Action

We consider this AD interim action. PW has not determined the root cause of the cracks discovered in second-stage HPT air seals.

Costs of Compliance

We estimate that this AD will affect 83 engines installed on airplanes of U.S. registry. We also estimate that it will take about 5 hours to perform the inspection required by this AD. The costs of an on-wing ECI or in-shop fluorescent-penetrant inspection (FPI) are assumed to be equal. The average labor rate is \$85 per hour. Based on these figures, we estimate the total cost of the AD to U.S. operators will be \$35,275.

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 to the extent that it justifies making a regulatory distinction, 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):



2013-15-09 Pratt & Whitney Division: Amendment 39-17525; Docket No. FAA-2013-0072; Directorate Identifier 2013-NE-04-AD.

(a) Effective Date

This AD is effective September 17, 2013.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Pratt & Whitney Division (PW) turbofan engine models PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, and PW4090-3 with second-stage high-pressure turbine (HPT) air seal, part number 54L041, installed.

(d) Unsafe Condition

This AD was prompted by discovery of cracks in second-stage HPT air seals. We are issuing this AD to prevent failure of the second-stage HPT air seal, which could lead to uncontained engine failure and damage to the airplane.

(e) Compliance

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

(1) For second-stage HPT air seals that have 1,200 or fewer cycles since new (CSN) on the effective date of this AD, perform an initial on-wing eddy current inspection (ECI) or initial in-shop fluorescent-penetrant inspection (FPI) for cracks within 2,200 CSN.

(2) For second-stage HPT air seals that have more than 1,200 CSN on the effective date of this AD, perform an initial on-wing ECI or initial in-shop FPI for cracks within 1,000 cycles after the effective date of this AD.

(3) Thereafter, repeat either the on-wing ECI or in-shop FPI every 1,200 cycles or fewer, since last inspection, depending on the results of the inspection.

(4) For the on-wing ECI, use section 4.0 of the Appendix of PW Alert Service Bulletin (ASB) No. PW4G-112-A72-330, Revision 2, dated July 11, 2013, to perform the inspection and use paragraph 8 of the Accomplishment Instructions of PW ASB No. PW4G-112-A72-330, Revision 2, dated July 11, 2013, to disposition the results of the inspection.

(5) For the in-shop FPI, remove the air seal from service if you find a crack.

(f) Credit for Previous Actions

You may take credit for ECIs performed prior to the effective date of this AD using PW ASB No. PW4G-112-A72-330, dated December 3, 2012 or PW ASB No. PW4G-112-A72-330, Revision 1, dated February 26, 2013.

(g) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(h) Related Information

For more information about this AD, contact James Gray, Aerospace Engineer, Engine & Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7742; fax: 781-238-7199; email: james.e.gray@faa.gov.

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 Alert Service Bulletin No. PW4G-112-A72-330, Revision 2, dated July 11, 2013.

(ii) Reserved.

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

(4) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(5) You may view this service information 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 July 19, 2013.

Colleen M. D'Alessandro,
Assistant Manager, Engine & Propeller Directorate,
Aircraft Certification Service.