



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2021-0136; Project Identifier AD-2021-00188-E; Amendment 39-21470; AD 2021-05-51]

RIN 2120-AA64

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

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

**ACTION:** Final rule; request for comments.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Pratt & Whitney Division (PW) PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, and PW4090-3 model turbofan engines. This AD was prompted by the in-flight failure of a 1st-stage low-pressure compressor (LPC) blade on a PW4077 model turbofan engine resulting in an engine fire during flight. This AD requires performing a thermal acoustic image (TAI) inspection for cracks in certain 1st-stage LPC blades and removal of those blades that fail inspection. The FAA previously sent an emergency AD to all known U.S. owners and operators of these engines and is now issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Emergency AD 2021-05-51, issued on February 23, 2021, which contained the requirements of this amendment, was effective with actual notice.

The FAA must receive comments on this 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 <https://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 final rule, contact Pratt & Whitney Division, 400 Main Street, East Hartford, CT 06118; phone: (860) 565-0140; email: [help24@pw.utc.com](mailto:help24@pw.utc.com); website: <https://fleetcare.pw.utc.com>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety 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 at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0136.

### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0136; 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, any comments received, and other information. The street address for Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** Carol Nguyen, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7655; fax: (781) 238-7199; email: [carol.nguyen@faa.gov](mailto:carol.nguyen@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Background**

On February 23, 2021, the FAA issued Emergency AD 2021-05-51 (the emergency AD), which requires performing a TAI inspection for cracks in certain 1st-stage LPC blades and removal of those blades that fail inspection. The FAA sent the emergency AD to all known U.S. owners and operators of these engines. That action was prompted by the in-flight failure of a 1st-stage LPC blade on a PW4077 model turbofan engine resulting in an engine fire during flight. This condition, if not addressed, could result in 1st-stage LPC blade release, damage to the engine, and damage to the airplane.

## **FAA's Determination**

The FAA is issuing this AD because the agency 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.

## **Related Service Information**

The FAA reviewed Pratt & Whitney Alert Service Bulletin (ASB) PW4G-112-A72-268, Revision No. 7, dated September 6, 2018. The ASB describes procedures for performing TAI inspections of 1st-stage LPC blades.

## **AD Requirements**

This AD requires performing a TAI inspection for cracks in certain 1st-stage LPC blades and removal of those blades that fail inspection.

## **Interim Action**

The FAA considers this AD to be an interim action. The FAA anticipates that further AD action will follow.

## **Justification for Immediate Adoption and Determination of the Effective Date**

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for "good cause," finds that those procedures are "impracticable, unnecessary, or contrary to the public interest." Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that required the immediate adoption of Emergency AD 2021-05-51, issued on February 23, 2021, to all known U.S. owners and operators of these engines. The FAA found that the risk to the flying public justified waiving notice and comment prior to adoption of this rule. On February 20, 2021, a United Airlines Boeing Model 777-222 airplane, equipped with two PW4077 model turbofan engines, on a flight from Denver, Colorado to Honolulu, Hawaii, experienced a 1st-stage LPC blade failure on the number 2 engine. This engine failure resulted in the separation of the fan inlet and cowling from the airplane, an engine fire, and damage to the airplane. The

airplane was forced to return to the airport of departure. The unsafe condition, caused by the failure of the 1st-stage LPC blade, could result in 1st-stage LPC blade release, damage to the engine, and damage to the airplane.

The FAA considers inspection and removal of those blades that fail inspection to be an urgent safety issue. Inspection of the 1st-stage LPC blade for cracks must be accomplished before further flight after the effective date of this AD. These conditions still exist, therefore, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forego notice and comment.

### **Comments Invited**

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include the docket number FAA-2021-0136 and Project Identifier AD-2021-00188-E at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

### **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important

that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Carol Nguyen, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

**Regulatory Flexibility Act**

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

**Costs of Compliance**

The FAA estimates that this AD affects 104 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this 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> |
|-----------------------------|---|-------------------|-------------------------|-------------------------------|
| TAI of 1st-stage LPC blades | 22 work-hours x \$85 per hour = \$1,870 | \$0               | \$1,870                 | \$194,480                     |

The FAA estimates the following costs to do any necessary replacement that would be required based on the results of the inspection. The agency has no way of determining the number of aircraft that might need this replacement:

**On-condition costs**

| <b>Action</b>               | <b>Labor Cost</b>                  | <b>Parts Cost</b> | <b>Cost per product</b> |
|-----------------------------|------------------------------------|-------------------|-------------------------|
| Replace 1st-stage LPC blade | 0 work-hours x \$85 per hour = \$0 | \$125,000         | \$125,000               |

**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.

The FAA is 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, and
- (2) Will not affect intrastate aviation in Alaska.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **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:

**2021-05-51 Pratt & Whitney Division:** Amendment 39-21470; Docket No. FAA-2021-0136; Project Identifier AD-2021-00188-E.

**(a) Effective Date**

This airworthiness directive (AD) is effective without actual notice on [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Emergency AD 2021-05-51, issued on February 23, 2021, which contained the requirements of this amendment, was effective with actual notice.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Pratt & Whitney Division (PW) PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, and PW4090-3 model turbofan engines, with a 1st-stage low-pressure compressor (LPC) blade, with part number 52A241, 55A801, 55A801-001, 55A901, 55A901-001, 56A201, 56A201-001, or 56A221, installed.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section.

**(e) Unsafe Condition**

This AD was prompted by an in-flight failure of a 1st-stage LPC blade on a PW4077 model turbofan engine resulting in an engine fire during flight. The FAA is issuing this AD to prevent failure of the 1st-stage LPC blades. The unsafe condition, if not addressed, could result in 1st-stage LPC blade release, 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**

(1) Before further flight, perform a thermal acoustic image (TAI) inspection of the 1st-stage LPC blades for cracks using a method approved by the FAA.

Note 1 to paragraph (g)(1): Vendors that have an FAA-approved TAI inspection are listed in the Vendor Services Section of Pratt & Whitney Alert Service Bulletin PW4G-112-A72-268, Revision No. 7, dated September 6, 2018.

(2) If any 1st-stage LPC blade fails the inspection required by paragraph (g)(1) of this AD, remove the blade from service and replace with a part eligible for installation before further flight.

**(h) Definition**

For the purpose of this AD, a “part eligible for installation” is a 1st-stage LPC blade that passed the inspection required by paragraph (g)(1) of this AD.

**(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 Related Information. 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 Carol Nguyen, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7655; fax: (781) 238-7199; email: carol.nguyen@faa.gov.

**(k) Material Incorporated by Reference**

None.

Issued on March 3, 2021.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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