



FAA
Aviation Safety

EMERGENCY

AIRWORTHINESS DIRECTIVE

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DATE: February 23, 2021
AD #: 2021-05-51

Emergency Airworthiness Directive (AD) 2021-05-51 is sent to owners and operators of Pratt & Whitney Division (PW) PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, and PW4090-3 model turbofan engines.

Background

This emergency 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 condition, if not addressed, could result in 1st-stage LPC blade release, damage to the engine, and damage to the airplane.

Relevant Service Information

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

FAA's Determination

The FAA is issuing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

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.

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.

Presentation of the Actual AD

The FAA is issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator.

2021-05-51 Pratt & Whitney Division: Project Identifier AD-2021-00188-E.

(a) Effective Date

This emergency AD is effective upon receipt.

(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

(1) For further 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.

(2) For service information identified in this AD, contact: Pratt & Whitney Division, 400 Main Street, East Hartford, CT 06118; phone: (860) 565-0140; email: help24@pw.utc.com; website: <https://fleetcare.pw.utc.com>. You may view this referenced 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.

Issued on February 23, 2021.

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