



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 33**

**[Docket No. FAA-2025-0950; Special Conditions No. 33-029-SC]**

**Special Conditions:** Pratt and Whitney Canada, PW220A; Flat 30-second and 2-minute OEI Rating.

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

**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for the Pratt and Whitney Canada (PWC) aircraft engine model PW220A. This engine will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for engines. This design feature is an additional one engine inoperative (OEI) power rating that combines the 30-second and 2-minute OEI power ratings into a single rating. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

**DATES:** These special conditions are effective [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

**FOR FURTHER INFORMATION CONTACT:** Philip Haberlen, Engine and Propulsion Section, AIR-625, Technical Policy Branch, Policy and Standards Division, Aircraft Certification Service, Federal Aviation Administration, 1200 District Avenue, Burlington, MA 01803; telephone 781-238-7770; e-mail [Philip.Haberlen@faa.gov](mailto:Philip.Haberlen@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Background**

On November 16, 2021, Pratt and Whitney Canada applied for a type certificate for the new engine model PW220A. The PW220A is a turboshaft engine designed for transport category twin-engine helicopters.

### **Type Certification Basis**

Under the provisions of Title 14, Code of Federal Regulations (14 CFR) 21.17, Pratt and Whitney Canada must show that the model PW220A meets the applicable provisions of Part 33, as amended by Amendments 33-1 through 33-34.

If the Administrator finds that the applicable airworthiness regulations (e.g., 14 CFR Part 33) do not contain adequate or appropriate safety standards for the model PW220A because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type certification basis under § 21.17(a)(2).

### **Novel or Unusual Design Features**

The PW220A will incorporate the following novel or unusual design feature:

A “Flat 30-second and 2-minute” one engine inoperative (OEI) rating.

### **Discussion**

These special conditions are necessary because current Part 33 regulations do not contain airworthiness standards for extending the 2-minute OEI rating for 30 seconds. These special conditions extend the time-dependent requirements in §§33.87(f) and

33.88(b) applicable to the 30-second OEI and 2-minute OEI to the 2.5-minute time duration of the “Flat 30-second and 2-minute OEI” power. The 2.5-minute time duration for the rating may affect the engine’s structural and operational characteristics that are time-dependent, such as the values for transients, the time duration for stabilization to steady state, and part growth due to deformation.

To address these aspects, the FAA proposed these special conditions on August 7, 2025 (90 FR 38076) based on §§ 33.7, 33.28(k), 33.29(c), 33.85(d), 33.87(a)(7), 33.87(f), 33.88(b), and A33.4(b).

In addition to § 33.7, an engine rating and operating limitation must be established for the flat 30-second and 2-minute OEI power rating.

The 2.5-minute time duration for the rating necessitates extending the time duration requirement of § 33.28(k) applicable to the 30-second OEI rating from 30 seconds to 2.5 minutes. This requirement is for automatic availability and control of the engine for the entire duration of the rating’s usage.

The rating’s 2.5-minute time duration also necessitates applying the requirements of § 33.29(c) to the flat 30-second and 2-minute OEI power rating. These special conditions will be used to ensure that the instrumentation requirements normally reserved for 30-second OEI and 2-minute OEI ratings are applied to the flat 30-second and 2-minute OEI power rating over its whole duration.

Paragraph (c)(3) of these special conditions states that the engine must provide means or provision of means to alert maintenance personnel of the use of the flat 30-second and 2-minute OEI power rating; the retrieval of the recorded data must be available after the aircraft lands, so any required maintenance actions can be completed before the next flight.

A special condition regarding calibration tests for the flat 30-second and 2-minute OEI power rating to mirror the requirements of § 33.85(d) is needed. This will permit the

use of measurements taken during the endurance test, required by the special condition based on § 33.87(f), to show compliance with § 33.85(d).

The 2.5-minute time duration for the rating affects the endurance test requirements of § 33.87. For the flat 30-second and 2-minute OEI power rating, a 2.5-minute time duration is needed to establish a level of safety equivalent to that established by § 33.87(f). For the 30-second OEI and 2-minute OEI, the test schedule of § 33.87(f) is divided between the two ratings. The FAA proposed these special conditions based on § 33.87(f) to ensure the test will be run for a duration of 2.5 minutes with no interruption.

A special condition to extend the time duration requirements referenced in Section 33.88(b) from 4 to 5 minutes at the overtemperature condition is also needed.

In addition, the FAA proposed these special conditions to ensure that the requirements in § A33.4(b) apply to this rating.

The special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

### **Discussion of Comments**

The FAA issued Notice of Proposed Special Conditions No. 33-25-01-SC for the PWC aircraft engine model PW220A, which was published in the *Federal Register* on August 7, 2025 (90 FR 38076).

No comments were received, and the special conditions are adopted as proposed.

### **Applicability**

As discussed above, these special conditions are applicable to the PWC aircraft engine model PW220A. Should PWC apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well.

## **Conclusion**

This action affects only a certain novel or unusual design feature on the PWC aircraft engine model PW220A. It is not a rule of general applicability.

## **List of Subjects in 14 CFR Part 33**

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

## **Authority Citation**

The authority citation for these special conditions is as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

## **The Special Conditions**

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for engine model PW220A.

In addition to the general definitions in 14 CFR 1.1, the following definition applies to these special conditions: “Rated Flat 30-second and 2-minute One Engine Inoperative (OEI) Power,” with respect to rotorcraft turbine engines, means (1) a single rating for which the shaft horsepower and associated operating limitations of the 30-second OEI and 2-minute OEI ratings are equal, and (2) the shaft horsepower is that developed under static conditions for a specified altitude and temperature and within the operating limitations established under Part 33. The rating is for continuation of flight operation after the failure or shutdown of one engine in multiengine rotorcraft, for up to three periods of use no longer than 2.5 minutes each in any one flight and followed by mandatory inspection and prescribed maintenance action.

The airworthiness standards in Part 33 Amendment 34 for the 30-second OEI and 2-minute OEI ratings are applicable to the flat 30-second and 2-minute OEI power rating.

In addition to the airworthiness standards in Part 33, the following special conditions apply:

(a) Section 33.7(c)(1) Engine ratings and operating limitations. In addition to the requirements in § 33.7(c)(1), the flat 30-second and 2-minute OEI power rating and operating limitations must be established for power, torque, rotational speed, gas temperature, and time duration.

(b) Section 33.28 Engine controls systems. In addition to the requirements in § 33.28, rotorcraft engines having the flat 30-second and 2-minute OEI power rating must incorporate a means, or a provision for a means, for automatic availability and automatic control of the flat 30-second and 2-minute OEI power within the declared operating limitations.

(c) Section 33.29 Instrument Connection. In lieu of the requirements of 33.29(c), the PW220A must incorporate a means or a provision for a means to:

(1) Alert the pilot when the engine is at the flat 30-second and 2-minute OEI power level, when the event begins, and when the time interval expires;

(2) Automatically record each usage and duration of power at the flat 30-second and 2-minute OEI power rating;

(3) Following each flight when the flat 30-second and 2-minute OEI power rating is used, alert maintenance personnel in a positive manner that the engine has been operated at the flat 30-second and 2-minute OEI power level, and permit retrieval of the recorded data; and

(4) Enable routine verification of the proper operation of the above means.

(d) Section 33.87 Endurance test. The requirements of § 33.87 are applicable to the PW220A, except that for the flat 30-second and 2-minute OEI power rating, the following requirements apply:

(1) The test of § 33.87(a)(7), for the purposes of temperature stabilization, must be run with a test period time of 2.5 minutes.

(2) The tests in § 33.87(f)(2) and (3) must be run continuously for the duration of 2.5 minutes, and

(3) The tests in § 33.87(f)(6) and (7) must be run continuously for the duration of 2.5 minutes.

(e) Section 33.85 Calibration tests. Test requirements of § 33.85(d) are applicable to the PW220A except that any measurements taken during the applicable endurance test prescribed in § 33.87(f)(1) through (8) as modified per this special condition may be used in showing compliance with the requirements of § 33.85(d) for the flat 30-second and 2-minute OEI power rating.

(f) Section 33.88 Engine overtemperature test. The requirements of § 33.88(b) apply, except that the test time is 5 minutes instead of 4 minutes. During the 5-minute time interval, the engine must be run at the maximum power-on rpm with a gas temperature at least 35 °F (19 °C) higher than the maximum operating limit at the flat 30-second and 2-minute OEI power rating.

(g) Section A33.4 Airworthiness Limitations Section. Additional airworthiness requirements of § A33.4(b) are applicable to the PW220A as follows:

(1) The Airworthiness Limitations Section must also prescribe the mandatory post-flight inspections and maintenance actions associated with any use of the flat 30-second and 2-minute OEI power rating.

(2) The applicant must validate the adequacy of the inspections and maintenance actions required with any use of the flat 30-second and 2-minute OEI power rating.

(3) The applicant must establish an in-service engine evaluation program to ensure the continued adequacy of the instructions for mandatory post-flight inspections and maintenance actions prescribed under paragraph (b)(1) of § A33.4 and of the data for § 33.5(b)(4) pertaining to power availability. The program must include service engine

tests or equivalent service engine test experience on engines of similar design and evaluations of service usage of the flat 30-second and 2-minute OEI power rating.

Issued in Kansas City, Missouri, on December 2, 2025.

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