



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 33

[Docket No. FAA-2025-0950; Notice No. 33-25-01-SC]

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

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed special conditions.

SUMMARY: This action proposes special conditions 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 proposed 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: Send comments on or before [INSERT DATE 45 DAYS AFTER

PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Send comments identified by Docket No. FAA-2025-0950 using any of the following methods:

- *Federal regulations Portal:* Go to www.regulations.gov and follow the online instructions for sending your comments electronically.
- *Mail:* Send comments to Docket Operations, M-30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE, Room W12-140, West Building Ground Floor, Washington, DC, 20590-0001.

- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- *Fax:* Fax comments to Docket Operations at 202-493-2251.

Privacy: Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in Title 14, Code of Federal Regulations (14 CFR) 11.35, the FAA will post all comments received without change to www.regulations.gov, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact received about these special conditions.

Confidential Business Information: 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 these special conditions contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to these special conditions, 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 the indicated comments will not be placed in the public docket of these special conditions. Send submissions containing CBI to the individual listed in the For Further Information Contact section below. Comments the FAA receives, which are not specifically designated as CBI, will be placed in the public docket for these special conditions.

Docket: Background documents or comments received may be read at www.regulations.gov at any time. Follow the online instructions for accessing the docket

or go to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the proposed special conditions, explain the reason for any recommended change, and include supporting data.

The FAA will consider all comments received by the closing date for comments, and will consider comments filed late if it is possible to do so without incurring delay. The FAA may change these special conditions based on the comments received.

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 proposes these special conditions 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 proposes 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 proposes special conditions to ensure that the requirements in § A33.4(b) apply to this rating.

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.

Applicability

As discussed above, these proposed special conditions are applicable to PWC model PW220A turboshaft engine. 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 apply to the other model as well.

Conclusion

This action affects only a certain novel or unusual design feature on one model engine. 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(f), 106(g), 40113, 44701, 44702, and 44704.

The Proposed Special Conditions

Accordingly, the Federal Aviation Administration (FAA) proposes the following special conditions 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 Des Moines, Washington, on August 5, 2025.

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