
Type Acceptance Report

TAR 21/21B/10

PRATT & WHITNEY CANADA JT15D Series

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Executive Summary

New Zealand Type Acceptance has been granted to the Pratt & Whitney Canada JT15D Series turbofan engines based on validation of Transport Canada Type Certificate number E-11. There are no special requirements for import.

Applicability is limited to the Models and/or serial numbers detailed in Section 2, which are now eligible for installation on a NZ-registered aircraft. Additional variants or serial numbers approved under the foreign type certificate can become type accepted after supply of the applicable documentation, in accordance with the provisions of NZCAR §21.43(b).

NOTE: The information in this report is correct as at the date of issue. The report is only updated when an application is received to revise the Type Acceptance Certificate. For details on the current type certificate holder and any specific technical data, refer to the latest State-of-Design Type Certificate Data Sheet.

1. Introduction

This report details the basis on which Type Acceptance Certificate No.21/21B/10 was granted in the Standard Category in accordance with NZCAR Part 21 Subpart B.

Specifically, the report aims to:

- (a) Specify the foreign type certificate and associated airworthiness design standard used for type acceptance of the model(s) in New Zealand; and
- (b) Identify any special conditions for import applicable to any model(s) covered by the Type Acceptance Certificate.

The report also notes the status of all models included under the State-of-Design type certificate which have been granted type acceptance in New Zealand, which are listed in Section 2. Appendix 1 lists the type acceptance history. This includes Models covered by the type acceptance certificate issued under Part 21B at Amendment 6 or later and Models which were accepted prior to that as part of an aircraft validation.

2. Aircraft Certification Details

(a) State-of-Design Type and Production Certificates:

Manufacturer: Pratt & Whitney Canada Corporation
Type Certificate: E-11
Issued by: Transport Canada
Production Approval: Certificate of Approval Number 4-58

(b) Models Covered by the Part 21B Type Acceptance Certificate:

- (i) **Models:** JT15D-1, JT15D-1A, JT15D-1B
Take-off Thrust: 2200 lb.
- (ii) **Models:** JT15D-4, JT15D-4B, JT15D-4D
Take-off Thrust: 2500 lb.
- (iii) **Models:** JT15D-5, JT15D-5R
Take-off Thrust: 2965 lb.
- (iv) **Models:** JT15D-5A
Take-off Thrust: 2900 lb.

3. Application Details and Background Information

The Pratt and Whitney Canada (PWC) JT15D Series was initially type accepted as part of the Cessna 501 Citation validation. The first application for New Zealand type acceptance of the JT15D-4 Series was from M J Mullins, dated 6 May 2019. The JT15D is a twin spool turbofan, with a single stage fan and centrifugal compressor, three stage turbine, annular reverse-flow combustor and full-length annular bypass duct.

Type Acceptance Certificate Number 21/21B/10 was granted on 30 October 2020 to the PWC JT15D Series turbofan engine based on validation of Transport Canada Type Certificate number E-11. There are no special requirements for import for any engine variant.

The JT15D-1 small turbofan rated at 2200 lb. thrust was developed and first used on the Cessna Model 500 Citation, which was initially marketed as the Fanjet 500. It was also used on the Aerospatiale SN600 Corvette light business jet. It was developed into the 2500 lb. thrust JT5D-4, which saw application on the Cessna 550 Citation II, and the Mitsubishi MU300. It was further upgraded to the JT15D-5 at 2965 lb. thrust, used on the Beechjet 400A, Cessna 560 Citation V and the SIAI S.211A military trainer.

4. NZCAR §21.43 Data Requirements

The type data requirements of NZCAR Part 21B Para §21.43 have been satisfied by supply of the following documents:

(1) State-of-Design Type certificate:

Transport Canada Type Certificate Number E-11

TC Type Certificate Data Sheet No. E-11 at Issue No. 23 dated August 4, 2006

- Model JT15D-1 approved 4 May, 1971
- Model JT15D-4 approved 27 September, 1973
- Model JT15D-1A approved 8 July, 1976
- Model JT15D-1B approved 30 September, 1982
- Model JT15D-4B approved 25 July, 1983
- Model JT15D-4D approved 16 December, 1983
- Model JT15D-5 approved 16 December, 1983
- Model JT15D-5A approved 14 November, 1988
- Model JT15D-5R approved 4 August, 2006

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of the JT15D-1/A/B is FAR Part 33 effective February 1, 1965, including Amendments 2 and 3 plus Advisory Circulars AC 33-1A and 33-3, and the requirements of D.O.T. letters of 11-10-1970 and 9-12-1970. For the PWC JT14D-4 Series FAR Part 33 at Amendment 4 and AC 33-1B were added, plus one paragraph at Amendment 6. For the JT15D-5 Series the certification basis was updated to FAR Part 33 including Amendments 1 to 9, with three exceptions which were addressed by compliance with the ACs.

This is an acceptable certification basis because FAR33 is the basic standard for aircraft engines called up by Part 21 Appendix C.

(ii) *Special Conditions:*

JT15D-1 and JT15D-4 Series:

DOT Letters 11-10-70 and 09-12-70 – These advise the DoT position regarding the 4 lb. bird ingestion test and acceptable means of compliance for the fan shroud and gas generator, and the use of a fuel shut-off device to prevent dangerous overspeeding under §33.27(b).

(iii) *Equivalent Level of Safety Findings:*

Nil

(iv) *Airworthiness Limitations:*

DOT-approved Service Lives of rotor components for most JT15D-1/4/5 models are defined in SB 7002.

TBO limits and sampling/escalation procedures are defined in SB 7003.

(3) Environmental Certification:

Not Applicable

(4) Certification Compliance Listing:

United Aircraft of Canada Ltd – JT15D-1 Civil Certification Compliance Program

(5) Flight Manual:

Not Applicable.

(6) Operating Data for Engine:

(i) *Maintenance Manual:*

PWC JT15D-1/1A/1B/4/4B/4D Maintenance Manual P/N 3017542

PWC JT15D-1/1A/1B/4/4B/4D Overhaul Manual P/N 3017543

PWC JT15D-5/5R Maintenance Manual P/N 3033442

PWC JT15D-5/5R Overhaul Manual P/N 3033443

PWC JT15D-5A Maintenance Manual P/N 3037322

PWC JT15D-5A Overhaul Manual P/N 3037323

(ii) *Current service Information:*

PWC Service Bulletins, Spares Parts Bulletins and Service Information Letters are available on the Pratt and Whitney Canada website.

(iii) *Illustrated Parts Catalogue:*

Pratt & Whitney Canada JT15D-1/1A/1B/4/4B/4D IPC – P/N 3017544

(7) Agreement from manufacturer to supply updates of data in (6):

PWC now provides CAA access to technical publications on their website:

<https://eportal.pwc.ca>

Attachments

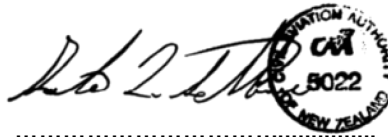
The following documents form attachments to this report:

Copy of Transport Canada Type Certificate Data Sheet Number E-11

Sign off

A blue ink signature of David Gill is written over a circular seal of the Civil Aviation Authority of New Zealand. The seal contains the text 'CIVIL AVIATION AUTHORITY OF NEW ZEALAND' and the number '0853'.

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David Gill
Team Leader Aircraft Inspection

A black ink signature of Gaetano Settineri is written over a circular seal of the Civil Aviation Authority of New Zealand. The seal contains the text 'CIVIL AVIATION AUTHORITY OF NEW ZEALAND' and the number '5022'.

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Checked – Gaetano Settineri
Certification Engineer

Appendix 1

List of Type Accepted Variants:

| <i>Model:</i> | <i>Applicant:</i> | <i>CAA Work Request:</i> | <i>Date Granted:</i> |
|---------------|-------------------------------|--------------------------|----------------------|
| JT15D-5A | Airwork Flight Operations Ltd | 10/21B/12 | 22 February 2010 |
| JT15D-1A/1B | Cessna Aircraft Company | 10/21B/23 | 24 June 2010 |
| JT15D-5 | Nextant Aerospace L.L.C. | 15/21B/16 | 27 February 2015 |
| JT15D-4 | M J Mullins | 21/21B/10 | 30 October 2020 |