
Type Acceptance Report

TAR 8/21B/19

PORTERFIELD 35-70

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Executive Summary

New Zealand Type Acceptance has been granted to the Porterfield Model 35-70 based on validation of Approved Type Certificate 567. There are no special requirements for import.

Applicability is currently limited to the Models and/or serial numbers detailed in Appendix 1, which are now eligible for the issue of an Airworthiness Certificate in the Standard Category in accordance with NZCAR §21.177, subject to any outstanding New Zealand operational requirements being met. (See Section 5 of this report for a review of compliance of the basic type design with the operating Rules.) 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(c).

1. Introduction

This report details the basis on which Type Acceptance Certificate No.8/21B/19 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; and
- (c) Identify any additional requirements which must be complied with prior to the issue of a NZ Airworthiness Certificate or for any subsequent operations.

2. ICAO Type Certificate Details

Manufacturer:	Porterfield Aircraft Corporation
Type Certificate:	ATC 567
Issued by:	Federal Aviation Administration
Model:	35-70
MCTOW:	1235 lb. (serial number 101) 1270 lb. (s/n 102 thru 131, 133, 134 and 139) 1310 lb.
Max. No. of Seats:	2
Noise Standard:	Not Applicable
Engine:	LeBlond 70 5DE or 5E
	Type Certificate: ATC 48
	Issued by: Federal Aviation Administration

Propeller: Not specified (wood – maximum diameter 80”)

3. Type Acceptance Details

The application for New Zealand type acceptance of the Porterfield 35-70 was from the importer Mr Trevor Collins, dated 10 December 2007. The first-of-type example was serial number 137, registered ZK-POR. The Model 35-70 is a tandem two-seat high-wing single-engined light training or touring aircraft with steel tube fuselage and wooden wing.

Type Acceptance Certificate Number 8/21B/19 was granted on 2nd December 2008 to the Porterfield 35-70 based on validation of FAA Approved Type Certificate number 567, and includes the LeBlond 70 5DE/E engine based on FAA Approved Type Certificate number 48. There are no special requirements for import into New Zealand.

The Porterfield Model 35 was developed from the Pup, an aircraft designed by Mr Noel Hockaday and built by students at the Wyandotte High School. The design was purchased by Mr E E Porterfield, who had previously founded the American Eagle Aircraft Corp. The design was available with a number of engines and a deluxe version. There have been two earlier examples of the Porterfield imported into New Zealand in 1938. These were both Model 35W with the 90 hp Warner Scarab engine, approved under ATC 611. ZK-AFS was destroyed by fire in 1939, while ZK-AFT was impressed during the war and eventually withdrawn from use in 1974. It is now in the Ashburton Aviation Museum.

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, or were already held by the CAA:

(1) ICAO Type certificate:

Aircraft Specification No.567 – Models 35 and 35-70 (original dated May 9, 1935)

Engine Specification Number 48 – LeBlond Models 70 5DE and 5E

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of the Porterfield 35-70 is stated on the Specification as ATC 567. The current type certificate holder, Mr Joe Rankine, advised the design standard used for the Porterfield was Aeronautical Bulletins 7A and 26. This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41 and Advisory Circular 21-1A, as Aero Bulletin 7A was the predecessor to CAR 3, and was the pre-war basic standard for this class of aeroplane. It has previously been accepted as equivalent at the time to FAR Part 23 Normal Category called up under Part 21 Appendix C. There are no non-compliances and no additional special conditions have been prescribed by the Director under §21.23.

The certification basis of the LeBlond engine is also not stated on the Specification, but is assumed to be the basic standard for aircraft engines in force at the time.

(ii) *Special Conditions:*
Nil

(iii) *Equivalent Level of Safety Findings:*
Nil

(iv) *Airworthiness Limitations:*
Nil

(3) Environmental Certification:
Not Applicable

(4) Certification Compliance Listing:

The current type certificate holder provided copies of the following:

Final Engineering Inspection and Flight Test Report
Inspector's Flight Test
General Engineering Data
Weight and Balance Sheet

(5) Flight Manual: CAA-produced Flight Manual Accepted as AIR 3031

(6) Operating Data for Aircraft and Engine:

(i) *Maintenance Manual:*

Porterfield Aircraft Corporation – Manual of Maintenance and Inspection for Zephyr, Flyabout, Collegiate Models 35, 35-70, 35V, 35W, CP-40, CP-40A, CP-50, CP-55, CP-65, CS-65, FP-65, LP-65, 75C

LeBlond Service Manual, including: Technical Description of the LeBlond “70”; Installation Instructions; Operation Instructions; Overhaul and Service Instructions; Parts Lists

(ii) *Current service Information:*

Service Bulletin No. 4 – Models 65, 70, 90 – Assembly and Rigging Instructions
Service Bulletin No. 14 – Model 35-70 – Fin Spar

(iii) *Illustrated Parts Catalogue:*

Not produced

(7) Agreement from manufacturer to supply updates of data in (5), and (6):

The type certificate holder advised that the manuals have been unchanged since issue and “in 1946 pertinent service bulletins were converted to airworthiness directives”. There are no current FAA Airworthiness Directives for the Porterfield.

5. Additional New Zealand Requirements

Compliance with the retrospective airworthiness requirements of NZCAR Part 26 is a prerequisite for the grant of a type acceptance certificate.

Civil Aviation Rules Part 26

Subpart B – Additional Airworthiness Requirements

Appendix B – All Aircraft

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
B.1	Marking of Doors and Emergency Exits	<i>To be determined on an individual aircraft basis</i>
B.2	Crew Protection Requirements – CAM 8 Appdx. B # .35	Not Applicable – Agricultural Aircraft only

Compliance with the following additional NZ operating requirements has been reviewed and were found to be covered by either the original certification requirements or the basic build standard of the aircraft, except as noted:

Civil Aviation Rules Part 91

Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
91.505	Seating and Restraints – Safety belt/Shoulder Harness	<i>To be determined on an individual aircraft basis</i>
91.507	Pax Information Signs – Smoking, safety belts fastened	Not Applicable – Less than ten passenger seats
91.509 Min. VFR	(1) ASI (2) Machmeter (3) Altimeter (4) Magnetic Compass (5) Fuel Contents (6) Engine RPM (7) Oil Pressure <i>Operational requirement</i> <i>Operational requirement</i> Fitted as Standard * Fitted as Standard *	(8) Coolant Temp (9) Oil Temperature (10) Manifold Pressure (11) Cylinder Head Temp. (12) Flap Position (13) U/c Position (14) Ammeter/Voltmeter N/A – Air-cooled engine Fitted as Standard * N/A – Fixed pitch propeller N/A – less than 250 hp <i>Operational requirement</i> N/A – Fixed undercarriage <i>Operational requirement</i>
* See empty weight equipment list in original Specification dated May 9, 1935		
91.511	Night VFR Instruments and Equipment	<i>Operational requirement – Compliance as applicable</i>
91.513	VFR Communication Equipment	<i>Operational requirement – Compliance as applicable</i>
91.517	IFR Instruments and Equipment	Not Applicable – Not approved for IFR flight
91.519	IFR Communication and Navigation Equipment	Not Applicable – Not approved for IFR flight
91.523	Emergency Equipment (a) More Than 9 pax – First Aid Kits per Table 7 – Fire Extinguishers per Table 8 (b) More than 20 pax – Axe readily accessible to crew (c) More than 61 pax – Portable Megaphones per Table 9	Not Applicable – Less than 10 passenger seats Not Applicable – Less than 10 passenger seats Not Applicable – Less than 20 passenger seats Not Applicable – Less than 61 passenger seats
91.529	ELT - TSO C91a or C126 after 1/4/97 (or replacement)	<i>Operational requirement – Compliance as applicable</i>
91.531	Oxygen Indicators - Volume/Pressure/Delivery	<i>Operational requirement – Compliance as applicable</i>
91.533	Oxygen for Non-Pressurised Aircraft	Not fitted as standard
91.541	SSR Transponder and Altitude Reporting Equipment	<i>Operational requirement – Compliance as applicable</i>
91.543	Altitude Alerting Device - Turbojet or Turbofan	Not Applicable – Not approved for IFR flight
91.545	Assigned Altitude Indicator	Not Applicable – Not approved for IFR flight
A.15	ELT Installation Requirements	<i>To be determined on an individual aircraft basis</i>

Attachments

The following documents form attachments to this report:

- Photographs first-of-type example Porterfield 35-70 s/n 137 ZK-POR
- Three-view drawing Porterfield Model 35-70 “Flyabout”
- Copy of FAA Type Certificate Data Sheet Number ATC 567

Sign off

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David Gill
Team Leader Airworthiness

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Checked – Peter Gill
Airworthiness Engineer

Appendix 1

List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
35-70	T V Collins	8/21B/19	2 December 2008