
Type Acceptance Report

TAR 6/21B/25 – Revision 1

Piper PA-30 and PA-39

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Executive Summary

New Zealand Type Acceptance has been granted to the Piper PA-30 and PA-39 Twin Comanche Series based on validation of FAA Type Certificate number A1EA. 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(b).

1. Introduction

This report details the basis on which Type Acceptance Certificate No.6/21B/25 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.

The report also notes the status of all models included under the foreign type certificate which have been granted type acceptance in New Zealand. Models covered by the type acceptance certificate issued under Part 21B are listed in Section 2 of this report. Models which were accepted prior to that under NZCAR Section B.9 are listed in Appendix 1.

2. ICAO Type Certificate Details

Manufacturer:	Piper Aircraft Corporation
Model:	PA-30
Type Certificate:	A1EA
Issued by:	Federal Aviation Administration
MCTOW	3600 lb.
Max. No. of Seats:	4 (up to s/n 30-901, except 30-853) 6 (s/n 30-853 and 30-902 and up)
Noise Standard:	Not Applicable

Engine: Lycoming IO-320-B1A
Type Certificate: 1E12
Issued by: Federal Aviation Administration

Propeller: Hartzell HC-E2YL-2 Series
Type Certificate: P9EA
Issued by: Federal Aviation Administration

3. Type Acceptance Certificate

The application for New Zealand type acceptance for the PA-30 Twin Comanche “C” was from North Shore Aviation Services Ltd, dated 7th April 2006. The first-of-type example was serial number 30-1785, registered ZK-NAA. The Piper PA-30 is a low-wing all-metal light piston-powered twin aircraft with four-six seats.

Type Acceptance Certificate No. 6/21B/25 was granted on 5 May 2006 to the PA-30 based on validation of FAA Type Certificate number A1EA. Specific applicability is limited to the coverage provided by the operating documentation supplied. There are no special requirements for import into New Zealand.

This report was raised to Revision 1 to include acceptance of an alternative commercially produced FAA-Approved Flight Manual for the PA-30 Series, under CAA Work Request number 7/21B/41. The applicant was Mr A B Shahroodi.

The PA-30, introduced in 1963, was derived from the PA-24-400 Comanche with the installation of two 160 hp engines and replacement of the steel fuselage firewall structure with aluminium. The PA-24-250 horizontal surface with heavier skins and 90 gallon fuel-cells were used and the nose gear was moved forward 9 inches with a new tubular mount. It was developed into the Twin Comanche “B” in 1965 which added provision for a third row of seats and additional windows, although there was no increase in MAUW. The Twin Comanche “C” was the last variant in 1969 and introduced a new instrument panel design and other improvements. The final production version was the PA-39 Twin Comanche “C/R” which had counter-rotating propellers and handed engines. A total of 2000 examples of the PA-30 Series were manufactured, but only 155 of the PA-39.

There have been four previous examples of the PA-30 on the NZ Civil Aircraft Register, starting with ZK-CNL in 1965, and “B” models ZK-DOK, ZK-DOM and ZK-KST. There have also been four examples of the PA-39, although only one is currently registered.

4. Type Data

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) Type certificate:

FAA Type Certificate Number A1EA

FAA Type Certificate Data Sheet number A1EA at Revision 16 dated July 6, 2005

– Model PA-30 approved February 5, 1963

– Model PA-39 approved December 3, 1969

(2) Airworthiness design requirements:

The certification basis of the PA-30 is CAR Part 3 effective May 15, 1956 through Amendment 3-6 effective September 13, 1961, with and one paragraph at Amendment 3-7 and one paragraph at FAR 23 Amendment 23-7. This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41 and Advisory Circular 21-1A, as CAR3 is the predecessor of FAR 23, which is the basic standard for Normal Category Airplanes called up under Part 21 Appendix C. There are no non-compliances and no special conditions have been prescribed by the Director under §21.23.

(3) Certification compliance listing:

Piper Engineering Report 1255 – Parts List Breakdown – Model PA-30

Piper Engineering Report 1260 – Substantiation of Piper Model PA-30

Piper Engineering Report 1272 – Type Certificate Data Sheet – Model PA-30

(4) Environmental Certification:

Not Applicable

(5) Flight manual: FAA Approved Flight Manual for Piper Twin Comanche PA-30 (serial numbers 30-1717 and 30-1745 and up) Piper Report No.1515 – CAA Accepted as AIR 2949

Pilot's Operating Handbook and FAA Approved Airplane Flight Manual – Piper PA-30 Twin Comanche – Published by Aircraft Publications, Austin, Texas – CAA Accepted as AIR 3022

(6) Illustrated Parts Catalogue:

Piper Twin Comanche PA-30/39 Parts Catalog – Part No. 753-646

(7) Maintenance manual and service data for aircraft:

Piper Twin Comanche PA-30/39 Service Manual – Part No. 753-645

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

Email from Newpiper dated 8 March 2006 for Flight Manual

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	Fitted as Standard
91.507	Pax Information Signs - Smoking, safety belts fastened	Not Applicable – Less than 10 passenger seats
91.509 Min. VFR	(1) ASI (2) Machmeter (3) Altimeter (4) Magnetic Compass (5) Fuel Contents (6) Engine RPM (7) Oil Pressure	CAR §3.655(a)(1) N/A CAR §3.655(a)(2) CAR §3.655(a)(3) CAR §3.655(b)(1)(i) CAR §3.655(b)(1)(v) CAR §3.655(b)(1)(ii)
		(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 CAR §3.655(b)(1)(iii) CAR §3.655(b)(2)(iii) CAR §3.655(b)(2)(i) Fitted as Standard CAR §3.359 CAR §3.687
91.511 Night	(1) Turn and Slip (2) Position Lights	<i>Operating Rule -As applicable</i> CAR 3 paragraph §3.700
		(3) Anti-collision Lights (4) Instrument Lighting
		CAR 3 paragraph §3.705 CAR 3 paragraph §3.696
91.513	VFR Communication Equipment	<i>Operating Rule – Compliance to be determined by Operator</i>
91.517	IFR Instruments and Equipment	<i>Operating Rule – Compliance to be determined by Operator</i>
91.519	IFR Communication and Navigation Equipment	<i>Operating Rule – Compliance to be determined by Operator</i>
91.523	Emergency Equipment: (a) More Than 10 pax - First Aid Kits per Table 7 - Fire Extinguishers per Table 8 (b) More than 20 pax - Axe readily acceptable 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>To be determined on an individual aircraft basis</i>
91.531	Oxygen Indicators - Volume/Pressure/Delivery	Not fitted as standard
91.533	Oxygen for non-Pressurized Aircraft	<i>Operating Rule – Compliance to be determined by Operator</i>
91.541	SSR Transponder and Altitude Reporting Equipment	<i>Operating Rule – Compliance to be determined by Operator</i>
91.543	Altitude Alerting Device - Turbojet or Turbofan	Not Applicable – Not turbo jet or turbofan powered
91.545	Assigned Altitude Indicator	<i>Operating Rule – Compliance to be determined by Operator</i>
A.15	ELT Installation Requirements	<i>To be determined on an individual aircraft basis</i>

Civil Aviation Rules Part 135

Subpart F - Instrument and Equipment Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
135.355	Seating and Restraints – Shoulder harness flight-crew seats	<i>Operating Rule – Compliance to be determined by Operator</i>
135.357	Additional Instruments (Powerplant and Propeller)	Has all the engine instruments required under FAR §23.1305
135.359	Night Flight	<i>Operating Rule – Compliance to be determined by Operator</i>
135.361	IFR Operations	<i>Operating Rule – Compliance to be determined by Operator</i>
	Speed, Alt, spare bulbs/fuses	
135.363	Emergency Equipment (Part 91.523 (a) and (b))	<i>Operating Rule – Compliance to be determined by Operator</i>
135.367	Cockpit Voice Recorder	N/A – Only for 2-crew helicopters with more than 10 pax
135.369	Flight Data Recorder	Not Applicable – Less than 10 passenger seats
135.371	Additional Attitude Indicator	Not Applicable – Not turbo jet or turbofan powered

Attachments

The following documents form attachments to this report:

- Photographs first-of-type example Piper PA-30 s/n 30-1785 ZK-NAA
- Three-view drawing Piper Model PA-30 Twin Comanche
- Copy of FAA Type Certificate Data Sheet Number A1EA

Sign off

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David Gill
Team Leader Airworthiness

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Checked – Chris Thomson AWE5
Date: 21 February 2008

Appendix 1

List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
PA-30 (up to s/n 1744)	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
PA-39	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
PA-30 (s/n 1745 & up)	North Shore Aviation Services Ltd	6/21B/25	5 May 2006