Type Acceptance Report

TAR 1/21B/6 – Revision 2

Robin DR400 Series

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Executive Summary

New Zealand Type Acceptance has been granted to the Robin DR400 Series based on validation of Type Certificate number EASA.A.367. There are no special requirements for import.

Applicability is currently limited to the Models and/or serial numbers detailed in Section 2, which are now eligible for the issue of an Airworthiness Certificate in the Standard Category in accordance with NZCAR §21.191, 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).

NOTE: The information in this report was correct as at the date of issue. The report is generally 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 revision of the State-of-Design Type Certificate Data Sheet referenced herein.

1. Introduction

This report details the basis on which Type Acceptance Certificate No. 1/21B/6 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 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. The history of the Robin DR400 Series type acceptance in New Zealand under type certificate EASA.A.367 is listed in Appendix 1.

2. Aircraft Certification Details

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

Type Certificate Holder:	C.E.A.P.R. Apex Aircraft (since at least July 2001) Robin Aviation (since at least Nov 1999) Société Avions Robin
Type Certificate: Issued by:	EASA.A.367 European Aviation Safety Agency
Manufacturer:	Avions Pierre Robin Constructions Aéronautiques de Bourgogne (since 1.9.96)
Supersedes: Type Certificate: Issued by:	 Certificat de Navigabilite de Type Numéro 45 Direction Generale de L'Aviation Civile – Republique Francaise

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

(i) **Model:** DR400/180

MCTOW:	1100 kg (2425 lb.) Normal Category 950 kg (2095 lb.) Utility Category
Max. No. of Seats:	4
Noise Standard:	ICAO Annex 16
Engine:	Lycoming O-360-A3A or O-360-A1A or O-360-A1P Type Certificate: E-286 Issued by: Federal Aviation Administration
Propeller:	Sensenich 76-EM8-S5-0-xx Type Certificate: P4EA Issued by: Federal Aviation Administration Hoffmann HO27 HM 180/160 Type Certificate: LBA 32.110/001 Issued by: Luftfahrt Bundesamt Hoffmann HO-V 123 K/180R Type Certificate: P.058 Issued by: European Aviation Safety Agency

(ii) **Model:** DR400/500

MCTOW:	1150 kg (2535 lb.)
Max. No. of Seats:	4
Noise Standard:	ICAO Annex 16
Engine:	Lycoming IO-360-A1B6
	Type Certificate: 1E10 Issued by: Federal Aviation Administration
Propeller:	Hartzell HC-C2YK-1BF/F7666A-2
	Type Certificate: P-920 Issued by: Federal Aviation Administration

Notes: 1. Refer to TCDS EASA.A.367 for specific applicability of engine and propeller combinations to individual aircraft models.

2. Refer to Advisory Circular 21-1 Appendix 2 for the New Zealand type acceptance status of any engines and propellers listed above.

3. Application Details and Background Information

The application for New Zealand type acceptance was from the importer, Izard Pacific Aviation, dated 20th September 2000. A Certification Application was also received from the manufacturer dated 29th August 2000, which was confirmed by a letter from the Aircraft Division, General Aviation Airworthiness Office of the DGAC-SFACT, ref. 2000/5488. The first of type example was serial number 29, registered ZK-TZA.

Type Acceptance Certificate Number 1/21B/6 was granted on 24 October 2000 to the Robin DR400 Series based on validation of DGAC Type Certificate number 45. Specific applicability is limited to the coverage provided by the operating documentation supplied, in this case the Flight Manual. There are no special requirements for import into New Zealand.

This report was raised to Revision 1 to include the earlier serial number range of DR400/180 aircraft, after application by Izard Pacific Aviation Ltd under CAA Work Request 4/21B/15. Type acceptance of these aircraft was granted on 22 December 2003. The first-of-type example was serial number 1043 registered ZK-TZB.

The DR400 family can trace its ancestry back to the Jodel DR100 Ambassadeur and is essentially a larger more powerful and refined development of the 4-seat Jodel all-wood cranked-wing concept, with a forward sliding canopy replacing the traditional doors. This was developed from the original D11 in 1958 in collaboration with Jean Delemontez by Pierre Robin, who set up Centre Est Aéronautique to produce the aircraft. The DR400/180 "Regent" is the 180 hp version, and has been produced in several series according to the IPC. The "93" models produced since January 1993 have new engine cowlings, modified instrument panel and windows, and tilt-forward engine mount. The DR400/500 Nouvelle Generation is a development of the Regent with 200 hp injected engine, wider fuselage, electric flaps and higher MAUW. In 1969 Centre Est was renamed Avions Pierre Robin, and on 20th October 1999 changed to Robin Aviation. The latter organization is the type certificate holder, which has now become Apex Aircraft. The aircraft are manufactured by a separate JAR 21 approved company called Constructions Aéronautiques de Bourgogne.

This report was raised to Revision 2 to update the format and note the change of State-of-Design type certificate jurisdiction to EASA.

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) State-of-Design Type certificate:

EASA Type Certificate Number

Type Certificate Data Sheet number EASA.A.367 at Issue 04 dated 2 Nov 2020
– Model DR400/180 approved 10 May 1972
– Model DR400/500 approved 10 March 1998

Supersedes:
DGAC Airworthiness Type Certificate Number 45
Fiche de Navigabilite No.121 associee au Certificat de Navigabilite de Type No.45 DR300/DR400 – Edition No.18, Novembre 1999
Translation – Data Sheet No.121 Associated to TC No.45

(2) Airworthiness design requirements:

(i) Airworthiness Design Standards:
The certification basis of the Robin DR400 Series is AIR 2052A, updated on June 6, 1966. Complimentary technical conditions applied were Amendment 7 of FAR Part 23 plus Emergency Canopy Jettisoning. This is an acceptable certification basis in accordance with NZCAR Part 21B paragraph §21.41 and Advisory Circular 21-1, because AIR 2052 has previously been accepted as equivalent to 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.

(ii) Special Conditions:
Canopy emergency release system – On the forward sliding canopy of the DR400 there must be a means to jettison the canopy on the ground if for any reason the forward sliding canopy has been jammed due to, for example, the engine cowling.

(iii) Equivalent Level of Safety Findings:
Nil

(iv) Airworthiness Limitations:
Nil

(3) Aircraft Noise and Engine Emission Standards:

(i) Environmental Standard:
The DR400 Series has been certificated for noise under ICAO Annex 16, Volume 1, Chapters 6 or 10.

(ii) Compliance Listing:
Noise Limitation Type Certificate No. N45
(DR400/180 approved 6/3/80 and DR400/500 approved 23/7/98)
Data Sheet No. N121 associated to Noise Limitation Type No. N45

ICAO Annexe 16, Ch.6, app.3 [DR400/180 "Standard" 73.1 dB(A)]

ICAO Annexe 16, Ch.10, app. 6 [DR400/500 2-bladed prop 78.8 dB(A)]

TCDS for Noise EASA.A.367 at Issue 7 dated 7 September 2020

(4) Certification Compliance Listing:

There is no compliance checklist available for the DR400 series. The first version was the DR 400/125, which was added to the DR 300 type certificate on 10 May 1972. Robin Aviation supplied a list of DR400/500 Certification Reports, and undertook to provide copies of any particular report on request, with the summary and conclusion translated in English.

(5) Flight Manual: DGAC-Approved DR400/180 Flight Manual – Edition 12 May 1990 – CAA Accepted as AIR 2703
"This Edition is applicable from S/N 2216 included".
(Copy of the French language Manuel de Vol also supplied.)

SGAC-Approved Flight Manual DR400-180 Regent – Issue No.11 Dated 7 July 1980 – CAA Accepted as AIR 2848

DGAC-Approved DR400/500 Flight Manual – Edition 1 March 1998 – CAA Accepted as AIR 2704
(Copy of the French language Manuel de Vol also supplied.)

(6) Operating Data for Aircraft:

(i) Maintenance Manual:
Robin DR400 Maintenance Manual – 3rd Edition July 1995

Robin DR400/500 Service Manual – 1st Edition July 1999

Robin DR400 Maintenance Schedule – Issue 3 September 1998

(ii) Current service Information:
Service Bulletins Collection

Service Letters Collection

(iii) Illustrated Parts Catalogue:
Robin DR400 IPC Edition IV/Revision 1

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

CAA 2171 form from HOD Robin Aviation dated 22 September 2000

(8) Other information:

Electrical Diagram Parts List DR500 – Dwg. No. 62-88-01

Schema Electrique DR400/160/180 Cv – Dwg. No. 62-18-29

5. New Zealand Operational Rule Compliance

Compliance with the retrospective airworthiness requirements of NZCAR Part 26 has been assessed as they are a prerequisite for the grant of an airworthiness 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	***To be determined on an individual aircraft basis***
B.2	Crew Protection Requirements – CAM 8 Appdx. B # .35	Agricultural Aircraft – ***Not Applicable***

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	Shoulder Harness if Aerobatic; >10 pax; Flight Training		***N/A – Not aerobatic***	
91.507	Pax Information Signs – Smoking, safety belts fastened		***N/A – Less than 10 passengers***	
91.509 Min. VFR	(1) ASI	Fitted as Std – See FM 1.10 #1	(8) Coolant Temp	N/A – Air cooled engine fitted
	(2) Machmeter	N/A	(9) Oil Temperature	Fitted as Std – M Page 1.10
	(3) Altimeter	Fitted as Std – See FM 1.10 #3	(10) Manifold Pressure	***To be fitted as required***
	(4) Magnetic Compass	Fitted as Std – FM Page 1.10	(11) Cylinder Head Temp.	Fitted as Std – See FM 1.10 #19
	5) Fuel Contents	Fitted as Std – FM Page 1.10	(12) Flap Position	Fitted as Std – See FM 1.10 #24
	(6) Engine RPM	Fitted as Std – FM Page 1.10	(13) U/C Position	N/A – Fixed Undercarriage
	(7) Oil Pressure	Fitted as Std – FM Page 1.10	(14) Ammeter/Voltmeter	Fitted as Std – FM Page 1.10
91.511	Instruments and Equipment Night VFR		***Operational Requirement – To be fitted as required***	
	Note: See Flight Manual Supplement 2 "Night VFR" for mandatory equipment for Night VFR in non-icing conditions			
91.513	VFR Communication Equipment		***Operational Requirement – To be fitted as required***	
91.517 IFR	(1) Gyroscopic AH	Available as optional	(5) OAT	***To be fitted as required***
	(2) Gyroscopic DI	equipment	(6) Time in hr/min/sec	***To be fitted as required***
	(3) Gyro Power Supply	Vacuum gauge optional	(7) ASI/Heated Pitot	Available as optional
	(4) Sensitive Altimeter	Fitted as std (P/N 76 22 12 000)	(8) Rate of Climb/Descent	equipment
91.519	IFR Communication and Navigation Equipment		***Operational Requirement – to be fitted as required***	
91.523	Emergency Equipment: (a) More Than 10 pax – First Aid Kits/Fire Extinguishers (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 20 Passenger seats Not Applicable – Less than 61 Passenger seats	
91.529	ELT – TSO C91a after 1/4/97 (or replacement)		***To be determined on an individual aircraft basis***	
91.531	Oxygen Indicators – Volume/Pressure/Delivery		Not fitted as standard	
91.533	Oxygen for Unpressurised Aircraft		Not fitted as standard	
91.541	SSR Transponder and Altitude Reporting Equipment		***Operational Requirement – to be fitted as required***	
91.543	Altitude Alerting Device – Turbojet or Turbofan		N/A – piston powered	
91.545	Assigned Altitude Indicator		***Operational Requirement – to be fitted as required***	
A.15	ELT Installation Requirements		***To be determined on an individual aircraft basis***	

Civil Aviation Rules Part 135

Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:		MEANS OF COMPLIANCE:
135.355	Seating and Restraints		Shoulder harness fitted as standard – See IPC §404
135.357	Additional Instruments (Powerplant and Propeller)		Fitted as std with instruments required by FAR §23.1305
135.359	Night Flight	Landing light, Pax compartment	***Operational Requirement – to be fitted as required***
135.361	IFR Operations	Speed, Alt, spare bulbs/fuses	***Operational Requirement – to be fitted as required***
135.363	Emergency Equipment (Part 91.523 (a) and (b))		***Operational Requirement – to be fitted as required***
135.367	Cockpit Voice Recorder		N/A – Helicopters only
135.369	Flight Data Recorder		N/A – Helicopters with more than 10 passenger seats
135.371	Additional Attitude Indicator		N/A – Not turbo jet powered

NOTES: 1. A Design Rule reference in the Means of Compliance column indicates the Design Rule was directly equivalent to the CAR requirement, and compliance is achieved for the basic aircraft type design by certification against the original Design Rule.

2. The CAR Compliance Tables above were correct at the time of issue of the Type Acceptance Report. The Rules may have changed since that date and should be checked individually.

3. Some means of compliance above are specific to a particular model/configuration. Compliance with Part 91/119 operating requirements should be checked in each case, particularly oxygen system capacity and emergency equipment.

Attachments

The following documents form attachments to this report:

Copy of Type Certificate Data Sheet Number EASA.A.367

Sign off

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David Gill
Team Leader Aircraft Inspection

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Checked – Glen Somerville
Certification Engineer

Appendix 1

List of Type Accepted Variants:

Model:	*Applicant:*	*CAA Work Request:*	*Date Granted:*
DR400/180	Izard Pacific Aviation Ltd	1/21B/6	24 October 2000
DR400/500	Izard Pacific Aviation Ltd	1/21B/6	24 October 2000

Appendix 2

3-view Drawing Robin Model DR400/500