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# **Type Acceptance Report**

**TAR 18/21B/6**

**AIRVAN 10 PTY GA10**

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## Executive Summary

New Zealand Type Acceptance has been granted to Airvan10 Pty Ltd (GippsAero) Model GA10 Airvan Series based on validation of Australian Type Certificate number VA522. 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).

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.18/21B/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.

## 2. Aircraft Certification Details

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

Manufacturer: GippsAero Pty Ltd (\*)

Type Certificate Holder: Airvan10 Pty Ltd (\*)

(\*) Effective 19 May 2017 Type Certificate VA522 was transferred from GippsAero Pty Ltd to Airvan 10 Pty Ltd

Type Certificate: VA522

Issued by: Civil Aviation Safety Authority

Production Approval: Pending.

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

(i) **Model:** GA10

MTOW: 2155 kg (4750 lbs)

Max. No. of Seats: 10 (includes pilot(s) and crew)

Noise Standard: Volume 1 of Annex 16  
14 CFR Part 36, effective December 1, 1969 with Amendments  
36-1 through Amendment 36-30 "*Noise Standards: Aircraft  
Type and Airworthiness Certification*"

**Engine:** Rolls Royce Corporation 250-B17F/2

Type Certificate: E10CE

Issued by: Federal Aviation Administration

**Propeller:** Hartzell HC-D3F-7H/D9511F-11

Type Certificate: P-18NE

Issued by: Federal Aviation Administration

### 3. Application Details and Background Information

The application for New Zealand type acceptance of the GA10 was from the TC Holder, submitted by Airvan10 Pty Ltd, dated 29 June 2017.

The GA10 is a single engine, high wing, strut-braced, fixed-gear, wheeled, tricycle undercarriage landplane to be certified in the normal category. The aircraft is certificated for single pilot operation under instrument flight conditions.

Although the GA10 has a strong GA8 lineage, CASR 21.019 required the GA10 be certified as a new model on a new Type Certificate.

In comparison to the GA8, the GA10 fuselage incorporates a fuselage stretch of 34.8 inches, resulting in a cabin capable of accommodating up to 10 occupants (including pilot). The GA10 is powered by a single Rolls Royce Model 250- B17F/2 turbine engine (450 hp) with Hartzell 3-blade propeller and has a maximum take-off weight (MTOW) of 4,750 lb. With a fuel capacity of nominally 580 litres, the aircraft will maintain normal cruise (150 KTAS, 10,000ft) for up to 6 hours (including reserves).

Type Acceptance Certificate No. 18/21B/6 was granted on 14 June 2018 to the Airvan10 Pty Ltd, Model GA10 based on validation of CASA Type Certificate VA522. Specific applicability is limited to the coverage provided by the operating documentation supplied. There are no special requirements for import into New Zealand.

The Model GA10 is referred to in the manufacturer's marketing literature as the "AIRVAN10". This name is strictly a marketing designation and is not part of the official model designation.

#### 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) ICAO Type certificate:

CASA Type Certificate Number VA522

CASA TCDS Number VA522 at Revision 1 dated 19 May 2017

– Model GA10 approved 19 May 2017

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of the GA10 is:

Subpart 21.B of the Civil Aviation Safety Regulations 1998, including amendments up to SLI 2011 No. 265 (1 April 2012); and

14 CFR Part 23, effective December 18, 1964, with amendments 1 through amendment 62 “*Airworthiness Standards for Normal Category Airplanes*”, excluding the following paragraphs:

§23.63, §23.67, §23.73, §23.77, §23.221, §23.1545, §23.1583.

This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41, as FAR Part 23 is the basic standard for Normal Category Airplanes 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.

(ii) *Special Conditions:*

CASA Special Condition SC23.001 – Provides substitute paragraphs for the paragraphs excluded from 14CFR Part 23, Amendment 62 due to identified errors. This Special Condition does not stem from the airplane having a novel or unusual design feature. However because of the Amendment 23-62 errors, the applicable airworthiness regulations do not contain adequate or appropriate safety standards. This Special Condition contains the additional safety standards that CASA considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards for comparable aircraft. Special Condition SC23.001 is materially the same as FAA ELOS Memo TC00769CE-A-G-9,

(iii) *Equivalent Level of Safety Findings:*

Nil

(iv) *Exemptions:*

Nil

(v) *Airworthiness Limitations:*

See Chapter 4 *Airworthiness Limitations* of the *Airplane Maintenance Manual*.

(3) Environmental Certification:

(i) *Noise Requirements:*

Airservices Australia has found that the GA10 is compliant with Volume 1 of Annex 16, Chapter 10, Third Edition, Amendment 4, 11 November 1993 (for aircraft registered in Australia),

FAA has found that the GA10 is compliant with 14 CFR Part 36, effective December 1, 1969 with Amendments 36-1 through Amendment 36-30 “Noise Standards: Aircraft Type and Airworthiness Certification”.

(ii) *Noise Compliance Listing:*

DTRS Aircraft Noise Certificate No. NC2017/01 – GippsAero Model GA10 at MAUW 2154.6 kg:  
Takeoff Noise Level: 79.3 dB(A)

(iii) *Emission Requirements:*

The FAA has found that the GA10 is compliant with 14 CFR Part 34, effective September 10, 1990 including Amendments 34-1 through Amendment 34-5A “Fuel Venting and Exhaust Emission Requirements For Turbine Engine Powered Airplanes”.

*Emission Compliance Listing:* D28-34-01 FAR Part 34 Compliance, GippsAero Pty Ltd.

(4) Certification compliance listing:

Technical Report D98-00-03 – GA10 Compliance Summary  
Technical Report D98-00-01 – GA10 Certification Plan  
Technical Report D77-98-01 – GA10 Engine Instruments System Safety Report  
Technical Report D20-00-04 – GA10 Installation EMI, Lightning and HIRF Compliance Report  
Technical Report D28-98-01 – GA10 Fuel Control and Indication System Safety Report  
Issue Paper No: GA10-006 - Use of S-Basis Material Strength Allowables

(5) Flight Manuals:

CASA-Approved GA10 Pilot's Operating Handbook and Approved Flight Manual Document No. D01-01-01 – CAA Accepted as AIR 3843

(6) Operating Data for Aircraft:

(i) *Maintenance Manual:*

GA10 *Airplane Maintenance Manual* Document No. D01-00-01, includes:  
Chapter 4 *Airworthiness Limitations*

(ii) *Current Service Information:*

Service Bulletins and Service Letters

(iii) *Illustrated Parts Catalogue:*

Will be submitted after Production Certificate issued.

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

All technical publications are available on the company website:  
[www.mahindraaerospace.com](http://www.mahindraaerospace.com)

## 5. New Zealand Operational Rule Compliance

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	Complies – See Flight Manual placards Section 2
B.2	Crew Protection Requirements – CAM 8 Appdx. B # .35	N/A – For 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	Shoulder Harness if Aerobic; >10 pax; Flight Training	Both front seats are fitted with four point restraint harness assemblies to comply with FAA crashworthiness requirements
91.507	Pax Information Signs – Smoking, safety belts fastened	N/A – 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	FAR §23.1303(a) Fitted as Std * N/A – No Mach-dependent limitations FAR §23.1303(b) Fitted as Std * FAR §23.1303(c) Fitted as Std * FAR §23.1305(a) 2 Fitted as Std * FAR §23.1305(c)(e) Fitted as Std * FAR §23.1305(b) Fitted as Std *
	* See Flight Manual Table 2-7: Required Equipment List. ** See Flight Manual Page 2-16	
91.511 Night	(1) Turn and Slip (2) Position Lights	Fitted as standard * Fitted as standard * (3) Anti-collision Lights (4) Instrument Lighting
91.517 IFR	(1) Gyroscopic AH (2) Gyroscopic DI (3) Gyro Power Supply (4) Sensitive Altimeter	Fitted as standard * Fitted as standard * Fitted as standard * Fitted as standard * (5) OAT (6) Time in hr/min/sec (7) ASI/Heated Pitot (8) Rate of Climb/Descent
91.519	IFR Communication and Navigation Equipment	<i>Operational requirement – Compliance as applicable</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	<i>Operational requirement – Compliance as applicable</i> <i>Operational requirement – Compliance as applicable</i> N/A – Less than 20 passenger seats N/A – Less than 61 passenger seats
91.529	ELT – TSO C126 after 1/7/2008	To be determined on an individual aircraft basis
91.531	Oxygen Indicators - Volume/Pressure/Delivery	Not fitted as standard
91.533	Supplemental Oxygen for Non-pressurised Aircraft >30 min above FL100 – Supplemental for crew, 10% Pax – Therapeutic for 3% of Pax Above FL100 – Supplemental, Therapeutic, 120 l PBE	Maximum operating altitude in Flight Manual is 20,000 ft Oxygen system not fitted as standard No Flight Manual Supplement in Flight Manual
91.541	SSR Transponder and Altitude Reporting Equipment	<i>Operational requirement – Compliance as applicable</i>
91.543	Altitude Alerting Device – Turbojet or Turbofan	N/A – Not turbo jet or turbofan powered
91.545	Assigned Altitude Indicator	<i>Operational requirement – Compliance as applicable</i>
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 for flight-crew seats	FAR §23.785 (Required under §23.562)
135.357	Additional Instruments (Powerplant and Propeller)	FAR §23.1305
135.359	Night Flight	Landing light, Pax compartment
135.361	IFR Operations	Speed, Alt, spare bulbs/fuses
135.363	Emergency Equipment (Part 91.523 (a) and (b))	<i>Operational requirement – Compliance as applicable</i>
135.367	Cockpit Voice Recorder	<i>Operational requirement – Compliance as applicable</i>
135.369	Flight Data Recorder	N/A – Only applicable to helicopters
135.371	Additional Attitude Indicator	N/A – Less than 10 passenger seats
		N/A – Not turbo jet or turbofan 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 CASA Type Certificate/ Type Certificate Data Sheet VA522

## Sign off



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Kavita Vanmari  
Airworthiness Engineer



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Checked – Andrea Wadsworth  
Airworthiness Engineer

## Appendix 1

### List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
GA10	Airvan 10 Pty Ltd	18/21B/6	14 June 2018