

---

# **Type Acceptance Report**

**TAR 3/21B/17 – Revision 3**

**Cirrus SR20, SR22 and SR22T**



## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY</b>	<b>1</b>
<b>1. INTRODUCTION</b>	<b>1</b>
<b>2. AIRCRAFT CERTIFICATION DETAILS</b>	<b>2</b>
<b>3. APPLICATION DETAILS AND BACKGROUND INFORMATION</b>	<b>4</b>
<b>4. NZCAR §21.43 DATA REQUIREMENTS</b>	<b>6</b>
<b>5. NEW ZEALAND OPERATIONAL RULE REQUIREMENTS</b>	<b>12</b>
<b>ATTACHMENTS</b>	<b>13</b>
<b>APPENDIX 1</b>	<b>13</b>



## Executive Summary

New Zealand Type Acceptance has been granted to the Cirrus Design SR20, SR22 and SR22T Series based on validation of FAA Type Certificate number A00009CH. There are no special requirements for import.

This report covers all the Models and serial numbers currently listed on the FAA Type Certificate, 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.) Subsequent models or serial numbers approved under the FAA 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.3/21B/17 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: Cirrus Design Corporation  
Type Certificate: A00009CH  
Issued by: Federal Aviation Administration  
Production Approval: FAA PC 338CE

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

(i) **Model:** SR20

MCTOW: 2900 lb. (1315 kg) – s/n 1005-1147  
3000 lb. (1360 kg) – s/n 1148-1885, or with SB 20-01-00  
3050 lb. (1383 kg) – s/n 1878, 1886 and subsequent  
3150 lb. (1429 kg) – s/n 2339 and subsequent

Max. No. of Seats: 4  
5 – s/n 2127 and subsequent

Noise Standard: FAR Part 36

**Engine:** Continental IO-360-ES  
Type Certificate: E1CE  
Issued by: Federal Aviation Administration

**Engine:** Lycoming IO-390-C3B6 – s/n 2339 and subsequent  
Type Certificate: E00006NY  
Issued by: Federal Aviation Administration

**Propeller:** Hartzell BHC-J2YF-1BF/F7694  
Type Certificate: P37EA  
Issued by: Federal Aviation Administration

**Propeller:** Hartzell PHC-J3YF-1RF or -1MF/F7392-1  
Type Certificate: P36EA  
Issued by: Federal Aviation Administration

**Propeller:** Hartzell HC-E3YR-1RF/F7392S-1 – s/n 2339 and subsequent  
Type Certificate: P33EA  
Issued by: Federal Aviation Administration

**Propeller:** Hartzell 3C1-R919A1/76C03-2 – s/n 2339 and subsequent  
Type Certificate: P00016CH  
Issued by: Federal Aviation Administration

---

<b>Model:</b>	<b>SR22</b>
MCTOW:	3400 lb. (1542 kg) 3600 lb. (1633 kg) – s/n 3915 and subsequent
Max. No. of Seats:	4 5 – s/n 3828 and subsequent
<b>Engine:</b>	Continental IO-550-N
Type Certificate:	E3SO
Issued by:	Federal Aviation Administration
<b>Propeller:</b>	Hartzell PHC-J3YF-1RF or -1N
Type Certificate:	P36EA
Issued by:	Federal Aviation Administration
<b>Propeller:</b>	McCauley D3A34C443/78CYA-0
Type Certificate:	P47GL
Issued by:	Federal Aviation Administration
<b>Propeller:</b>	MT-Propeller MTV-9-D/198-52
Type Certificate:	LBA 32.130/65
Issued by:	European Aviation Safety Agency

<b>Model:</b>	<b>SR22T</b>
MCTOW:	3400 lb. (1542 kg) 3600 lb. (1633 kg) – s/n 0422 and subsequent
Max. No. of Seats:	4 5 – s/n 0251, and 0268 and subsequent
<b>Engine:</b>	Continental TIO-550-K
Type Certificate:	E5SO
Issued by:	Federal Aviation Administration
<b>Propeller:</b>	Hartzell PHC-J3YF-1N/N7605, B, C or CB
Type Certificate:	P36EA
Issued by:	Federal Aviation Administration

NOTE: See Advisory Circular AC21-1 Appendix 2 for the New Zealand type acceptance status of the engines and propellers listed above.

### 3. Application Details and Background Information

The application for New Zealand type acceptance of the Cirrus SR20 and SR22 was from the manufacturer dated 5 November 2002. The first-of-type example was SR22 serial number 0423, registered ZK-STU. The Cirrus SR20/22 series is a single-engined fixed-gear four-seat low-wing cantilever monoplane of all-composite construction.

Type Acceptance Certificate No. 3/21B/17 was granted on 9 December 2002 to the Models SR20 and SR22 based on validation of FAA Type Certificate number A00009CH. Specific applicability is limited to the coverage provided by the operating documentation supplied. There are no special requirements for import into New Zealand.

The Cirrus family is one of a new generation of light aircraft using modern technology such as composite construction, sidestick controllers and electronic multi-function cockpit displays. The SR20 was the initial version using a 200 hp injected six-cylinder engine, while the SR22 was developed with a 310 shp engine and increased MAUW. The ballistic recovery system fitted as standard is unique among production aircraft, and was used successfully for the first time in October 2002. (An earlier attempt was unsuccessful, and resulted in the issue of some SB and AD for fleet-wide modifications to the activation system.) The SR22 initially had a relatively low airframe life limit of 4350 hours, due to assessment using SR20 loads. However Cirrus carried out a new series of wing tests in 2003 to extend the airframe life limit to the same 12,000 flight hours as the SR20.

There have been a number of aircraft updates in production as noted below, and this is reflected in the different Flight Manuals required for specific serial number ranges.

- SR20 s/n 1268 and on: Introduced the all-electrical Avionics Configuration 2 Series, which included the Avidyne Moving Map Display. EFIS was available from s/n 1337.
- SR20 s/n 1423 and on, except 1878: Incorporated the G2 Fuselage Redesign, which added improved entry door hinging and many other detailed improvements.
- SR20 s/n 1878 and 1886 and on: These aircraft are equipped with the G3 redesigned wing, which features multiple aerodynamic, structural and system detail changes.

This report was raised to Revision 1 to include the Cirrus Series with the Garmin G1000 avionics display system fitted. This was approved under FAA project TD6187CH-A and is marketed as “Cirrus Perspective by Garmin”. The G1000 is installed on Model SR20 serial numbers 2016 and subsequent, and on Model SR22 serial numbers 2979, 2992 and 3002 and subsequent. Type acceptance was granted on 29 March 2010. (The SR22 is now approved for Flight Into Known Icing conditions when suitably equipped.)

Revision 2 was issued to add the “Generation 5” aircraft, which is the commercial name for SR22 aircraft with an Increased Gross Weight. Other associated changes included an increase in maximum flap deflection (to maintain the FAR 23 61-knot maximum stall speed), and the addition of a 3-place aft seat which uses a 3-point seatbelt attachment. The first-of-type example was SR22 serial number 4113 registered ZK-CNZ. Type Acceptance was granted on 12 September 2014.



The manufacturer subsequently applied to add the Model SR22T under a separate type acceptance application, which was also included in this report revision. Type acceptance was granted on 20 March 2015.

The SR22T is a derivative of the SR22 except for the use of a turbocharged engine, and changes have been mostly forward of the firewall except for powerplant control and display functions. To accommodate the new engine, changes were required to the induction system, exhaust, baffling, engine controls, environmental control system, firewall-forward fuel system, firewall bulkhead, fire barrier and the addition of a heat shield installation.

The report was raised to Revision 3 to include the G6 version of the Cirrus SR family. The Generation 6 uses the Garmin G1000 NXi system, which is marketed by Cirrus as “Perspective +”. While the change was primarily driven by component obsolescence, the NXi has increased functionality and other improvements, including faster processing, more display options, and the Surfacewatch and Visual Approach features. Under the G6 changes Cirrus also introduced the Lycoming IO-390 engine as standard on the SR20.

The opportunity was also taken to add all the earlier serial numbers not previously covered by the type acceptance certificate. Type Acceptance was granted on 5 October 2017.

#### 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:

FAA Type Certificate No.A00009CH

FAA TCDS A00009CH at Revision 21 dated February 13, 2017

- Model SR20 approved October 23, 1998
- Model SR22 approved November 30, 2000
- Model SR22T approved February 10, 2010

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of the Cirrus Model SR20 is Part 23 of the Federal Aviation Regulations effective February 1, 1965, as amended by 23-1 through 23-47, except some specified paragraphs are up to Amendment 23-52, as noted on the TCDS. The revision status of some individual paragraphs has been updated for later production configurations (“G2” fuselage re-design and “G3” wing re-design) for specified serial numbers, again as detailed on the TCDS.

The certification basis of the Model SR22 is FAR Part 23 including Amendments 23-1 through 23-53, except for §23.301 at Amendment 23-42 and three paragraphs being not applicable.

The Cirrus Series is the first type certificated aircraft equipped with a ballistic recovery parachute (called Cirrus Airframe Parachute System CAPS) as basic equipment, and a Special Condition was applied for this feature. In addition, an equivalent level of safety finding was required to allow the provision of CAPS to be used in lieu of meeting stall recovery criteria. A number of other ELOS and Special Conditions have been reviewed and accepted by the CAA.

The certification basis of both models when fitted with the G1000 was upgraded to include FAR 23.1308 at Amendment 23-57, for installation specific items only.

For the SR22T the certification basis was FAR Part 23 including Amendments 23-1 through 23-59, except for §23.301 at Amendment 23-42, the same as the SR22.

For the G6 update with Garmin G1000 NXi avionics and for the installation of the Lycoming IO-390 engine (serial number 2339 and on) various paragraphs of Part 23 were updated up to Amendment 23-61, as noted on the TCDS.

This is an acceptable certification basis in accordance with NZCAR Part 21B paragraph §21.41, as FAR 23 is the basic design 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:*

*SR20 and SR22:*

23-134-SC Protection from HIRF – This required assessment of no adverse effect on critical electrical and electronic systems when exposed to a specified (and updated) HIRF environment.

*SR20, SR22 and SR22T:*

FAA Special Condition 23-ACE-88 requirements for ballistic parachute for SR20 Type Design – Specified acceptance criteria, covering: Flight Test Demonstration (functional at critical weight and flight conditions); Occupant Restraint; Parachute Performance (TSO C23c plus); System Functions and Operations; System Protection; System Inspection Provisions.

23-163-SC Inflatable Restraint System – For approval of the AMSAFE inflatable four point safety belt with integrated airbag device Cirrus was required to show the belts would both perform properly under foreseeable operating conditions, and not impede the pilot's ability to maintain control of the aircraft nor constitute a hazard to the aircraft or the occupants. It had to be shown they would deploy and provide protection under crash conditions.

(iii) *Equivalent Level of Safety Findings:*

*SR20:*

Equivalent Level of Safety Finding ACE-01-01: FAR 23.1143(g) & 23.1147(b); For reciprocating single-engine airplanes, each power control must be designed so if it separates at the fuel metering device, the airplane is capable of continued safe flight and landing. The SR-20 first met this by a spring which brings the engine to full power in the case of a control disconnect. This was subsequently replaced with a positive retaining hardware, so that the possibility of control separation can be eliminated and is safer than an engine unexpectedly going to full power. This was accepted by the FAA in conjunction with a control system security inspection added to the AMM.

*SR22 and SR22T:*

Equivalent Level of Safety Finding ACE-00-09/A: FAR 23.1143(g) & 23.1147(b); The same ELOS as under ACE-01-01 was granted for the Model SR22 and the SR22T.

Equivalent Level of Safety Finding ACE-09-06/A: FAR 23.1326: This allows for the elimination of the continuous caution light whenever the pitot heat is off and OAT is above 5°C, in accordance with Policy Memorandum PS-ACE100-2002-007. It is applicable to SR22 aircraft equipped for Flight Into Known Icing Conditions. Annunciation is only provided when needed, as continuous display could become an annoyance and be overlooked over time.

*SR20, SR22 and SR22T:*

Equivalent Level of Safety Finding ACE-96-5/A: FAR 23.221; The ballistic recovery system fitted as standard equipment on the SR-20 is based on the General Aviation Recovery Device (GARD) 150 certificated for the Cessna 150/152 series airplane. Special conditions for the GARD prior to the SR-20 were for a supplemental and not a primary safety device. Cirrus requested credit for the system by accepting it as a safety device equivalent to §23.221 Spins. The special conditions include requirements to show serious injury to the occupants is unlikely, including during adverse weather conditions. The landing protection provided by the GARD system meeting these special conditions is assumed to generally allow the occupants to walk away, provided the system was activated above the minimum deployment altitude. This was the subject of considerable research and review by the FAA, and was accepted subject to demonstration of enhanced stall characteristics; the GARD system recovering the airplane in the same or less altitude than airplanes in the same class typically take to recover from the one-turn spin requirement of §23.221; and the Flight Manual requiring GARD deployment if the airplane departs controlled flight.

Equivalent Level of Safety Finding ACE-08-05/A: FAR 23.777(d)/23.781(b); This allows for the use of one power lever in place of conventional throttle, propeller and mixture controls, because the probability of inadvertent operation of the incorrect lever is negated by correct shape for the mixture lever and the height separation of the throttle.

**SR22T:**

Equivalent Level of Safety Finding ACE-10-08: FAR §23.1091(b)(4): (Alternate air door override means) – The door is located in a protected area not likely to be affected by precipitation. Testing shows that air temperatures will always be high enough to preclude icing of the automatic alternate air door, which eliminates the need for a manual override feature. A maintenance check is also required every 100 hours to ensure the door does not stick. (A similar ELOS ACE-06-06 was issued for an STC turbo normaliser installation on the SR22.)

(iv) *Exemptions:*

FAA~Exemption No.9849 granted against FAR §23.1419(a) – For late-production SR22 only (approved for FIKI) this allowed for a higher stall speed in the landing configuration ( $V_{SO}$ ) when operating in icing conditions, based on meeting the criteria in FAA Advisory Circular 23.1419-2D. (The aircraft meets with the stall warning requirement of §23.207; AFM performance data in icing conditions reflects the higher stall and operating speeds; With critical ice accretions the aircraft still has acceptable stall characteristics and is safely controllable with normal piloting skills.)

FAA~Exemption No.9993 granted against FAR §23.1419(a) – A similar exemption to No.9849 was granted to the Model SR22T using the same justification criteria.

(v) *Airworthiness Limitations:*

See Section 4 of the Airplane Maintenance Manual.

(3) Aircraft Noise and Engine Emission Standards:

(i) *Environmental Standard:*

The Models SR20 and SR22 have been certificated under FAR Part 36 Appendix G, including Amendments 36-1 through 36-21 and 36-22 respectively. Amendment 36-28 was used for aircraft with the increased gross weight, and for the SR22T. For SR20 G6 aircraft with Garmin NXi and IO-390 the Amendment state was 36-30.

(ii) *Compliance Listing:*

See AFM Section 4 – Noise Characteristics/Abatement

SR20 – Two-blade Propeller (3000 lb 2700 RPM)	– 84.79 dB(A)
SR20 – Three-blade Propeller (3000 lb 2700 RPM)	– 83.42 dB(A)
SR20 – HC-E3YR-1RF/F7392S-1 metal propeller (3150 lb 2700 RPM)	– 82.9 dB(A)
SR20 – 3C1-R919A1/76C03-2 composite propeller (3150 lb 2700 RPM)	– 81.7 dB(A)
SR22 – Hartzell 3-blade PHC-J3YF-1RF/F7694 (3400 lb 2700 RPM)	– 83.65 dB(A)
SR22 – Hartzell 3-blade PHC-J3YF-1RF/F7693DF (3400 lb 2700 RPM)	– 84.81 dB(A)
SR22 – McCauley 3-blade D3A34C443/78CYA-0 (3400 lb 2700 RPM)	– 83.15 dB(A)
SR22 – MT 3-blade Propeller MTV-9-D/198-52 (3400 lb 2700 RPM)	– 84.80 dB(A)
SR22 – Hartzell 3-blade PHC-J3YF-1RF/F7693DF (3600 lb 2700 RPM)	– 84.60 dB(A)
SR22T – Hartzell 3-blade PHC-J3Y1F-1N/N7605(B) (3400 lb 2500 RPM)	– 80.8 dB(A)
SR22T – Hartzell 3-blade PHC-J3Y1F-1N/N7605C(B) (3400 lb 2500 RPM)	– 80.8 dB(A)
SR22T – Hartzell 3-blade PHC-J3Y1F-1N/N7605 (3600 lb 2500 RPM)	– 81.5 dB(A)
SR22T – Hartzell 3-blade PHC-J3Y1F-1N/N7605(B) (3600 lb 2500 RPM)	– 81.5 dB(A)

(4) Certification Compliance Listing:

Spreadsheet – Compliance Listing (includes Australia and Canada) – 5 Nov 2002  
(Lists all Regulations complied with, the applicable Document and Project number)

CDC Certification Report – Garmin Avionics – Document 18706 Revision B

Cirrus Design Corporation Doc. No. 26230 – Project Specific Certification Plan (PSCP) Model SR22T – Revision B dated 26 June 2009  
(The Compliance Checklist is contained in Appendices A and B.)

Cirrus Design Corporation Doc. No. 28870 – Project Specific Certification Plan (PSCP) 3600LB SR22 & SR22T – Revision E dated 31 August 2012  
(The Compliance Checklist is a spreadsheet referenced as Appendix A.)

Cirrus Perspective Garmin G1000 NXi – Certification Report – Document No. E00000819 – FAA Project AT09050CH-A – Rev. B.7 dated 23 December 2016

(5) Flight Manual:

Pilot’s Operating Handbook and FAA-Approved Airplane Flight Manual for Cirrus SR20 – Document No.11934-001 (Applicable to Serials 1005 through 1147 with 2900 Pound Takeoff Weight) – CAA Accepted as AIR 3468

Pilot’s Operating Handbook and FAA-Approved Airplane Flight Manual for Cirrus SR20 – Document No.11934-002 (Applicable to Serials 1148 and Subsequent and Earlier SR20 Serial Aircraft Modified for 3000 Pound Takeoff Weight) – CAA Accepted as AIR 2812

Pilot’s Operating Handbook and FAA-Approved Airplane Flight Manual for the All-Electric SR20 (Serials 1268 and subsequent) – Document No.11934-003 – CAA Accepted as AIR 2840

Pilot’s Operating Handbook and FAA-Approved AFM for the SR20 Serials 2016 and Subsequent with the Cirrus Perspective Avionics System – Document No.11934-004 – CAA Accepted as AIR 3115

Pilot’s Operating Handbook and FAA-Approved AFM for the SR20 Serials 2339 and Subsequent with the Cirrus Perspective+ Avionics System – Document No.11934-005 – CAA Accepted as AIR 3469

Pilot’s Operating Handbook and FAA-Approved Airplane Flight Manual for the Cirrus Design SR22 – Document No.13772-001 – CAA Accepted as AIR 2813

Pilot’s Operating Handbook and FAA-Approved Airplane Flight Manual for the SR22 Serials 2979, 2992, 3002 and subsequent – Document No.13772-002 – CAA Accepted as AIR 3116

Pilot’s Operating Handbook and FAA-Approved Airplane Flight Manual for the SR22T Aircraft Serials SR22T-0001 & Subsequent with Teledyne Continental Motors Turbocharged Engine – Doc. No.13772-003 – CAA Accepted as AIR 3308

Pilot’s Operating Handbook and FAA-Approved Airplane Flight Manual for the SR22 Aircraft Serials 22-3915 and Subsequent 3600 Pound Takeoff Weight – Document No.13772-004 – CAA Accepted as AIR 3295

Pilot's Operating Handbook and FAA-Approved Airplane Flight Manual for the SR22T Aircraft Serials SR22T-0442 & Subsequent with Teledyne Continental Motors Turbocharged Engine 3600 Pound Takeoff Weight – Doc. No.13772-005 – CAA Accepted as AIR 3309

Pilot's Operating Handbook and FAA-Approved Airplane Flight Manual for the SR22 Aircraft Serials 22-4433 and Subsequent with Cirrus Perspective+ Avionics System – Document No.13772-006 – CAA Accepted as AIR 3470

Pilot's Operating Handbook and FAA-Approved Airplane Flight Manual for the SR22T Aircraft Serials SR22T-1460, 1471, 1473 & Subsequent with Teledyne Continental Motors Turbocharged Engine and Cirrus Perspective+ Avionics System – Document No.13772-007 – CAA Accepted as AIR 3471

(6) Operating Data for Aircraft:

(i) *Maintenance Manual:*

Airplane Maintenance Manual SR20 P/N 12137-001

Airplane Maintenance Manual SR22 and SR22T P/N 13773-001

Airplane Maintenance Manual SR20 P/N 12137-002 (Serials 20-2339 & Subs.)

Airplane Maintenance Manual SR22 and SR22T P/N 13773-002 (Aircraft Serials 22-4435 & Subsequent, Serials 22T-1460, 22T-1471, 22T-1473 & Subsequent)

Wiring Manual for the Cirrus Design SR20 – P/N 12129-001

Wiring Manual for the Cirrus Design SR22 and SR22T – P/N 13775-001

Wiring Manual for the Cirrus Design SR20 (Perspective+) – P/N 12129-002

Wiring Manual Cirrus Design SR22 and SR22T (Perspective+) – P/N 13775-002

Cirrus Airframe Parachute System CMM for SR20 – P/N 12128-001

Cirrus Airframe Parachute System CMM for SR22 and SR22T – P/N 15994-001

(ii) *Current service Information:*

Copies of all Service Bulletins and Service Advisories are available at:

<http://www.cirruslink.com/mycirrus/servicepubs.aspx>

(iii) *Illustrated Parts Catalogue:*

IPC for Cirrus Design SR20 – P/N 12138-001

IPC for Cirrus Design SR22 and SR22T – P/N 13744-001

IPC for Cirrus Design SR20 (Perspective +) – P/N 12138-002  
(Aircraft Serials 20-2339 & Subsequent)

IPC for Cirrus Design SR22 and SR22T (Perspective +) – P/N 13744-002  
(Serials 22-4435 & Subsequent, 22T-1460, 22T-1471, 22T-1473 & Subsequent)

(7) Agreement from manufacturer to supply updates of data in (4), (5) and (6):

CAA 2171 form from CDC Certification Engineer dated 5 November 2002

CAA 2171 form from CDC Director, Airworthiness dated May 5, 2009

Cirrus Design now provides technical publications online to CAA at:

<http://servicecenters.cirrusdesign.com/memberlogin.asp>

(8) Other information:

SR2X Master Drawing List – Document 13750 Rev. F

(Now at Revision X for the Cirrus Perspective configuration.)

SR20 Delivered Weight Data & Equipment List P/N 11934-ELXXXX

SR22 Delivered Weight Data & Equipment List P/N 13772-ELXXXX

## 5. New Zealand Operational Rule Compliance

Compliance with the following additional NZ requirements has been reviewed (for the original production equipment fit) 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 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

### 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	Integrated seat belt and shoulder harness assemblies with inertia reels are provided for the pilot and each passenger
91.507	Pax Information Signs - Smoking, safety belts fastened	Not Applicable – Less than ten passenger seats
91.509 Min. VFR	(1) ASI FAR §23.1303(a) – Required equipment – see EL # 34-15 (2) Machmeter N/A – <i>No Mach-No. limitations</i> (3) Altimeter FAR §23.1303(b) – Required equipment – see EL # 34-14 (4) Magnetic Compass FAR §23.1303(c) – Required equipment – see EL # 34-17 (5) Fuel Contents FAR §23.1305(a) – Required equipment – see EL # 28-01 (6) Engine RPM FAR §23.1305(d)(e) – Required equipment – see EL # 77-01 (7) Oil Pressure FAR §23.1305(b) – Required equipment – see EL # 77-04	(8) Coolant Temp (9) Oil Temperature N/A – <i>Air-cooled engine</i> FAR §23.1305(c) – Required equipment – see EL # 77-04 (10) Manifold Pressure Required equipment – see Equipment List Item 77-03 (11) Cylinder Head Temp. Required equipment – see Equipment List Item 28-01 (12) Flap Position FAR §23.699(a)(2) – Detented switch plus indicator lights (13) U/c Position N/A – <i>Fixed undercarriage</i> (14) Ammeter/Voltmeter FAR §23.1351(d) – Required equipment – see EL #24-05
91.511 Night	(1) Turn and Slip Turn/Bank Coordinator part of “basic-six” instrument panel (2) Position Lights Std Equipment – see EL # 33-01	(3) Anti-collision Lights FAR §23.1401 – Required equipment – See EL #33-01 (4) Instrument Lighting Fitted as Standard – see FM §7
91.517 IFR	(1) Gyroscopic AH Std Equipment – see EL # 34-18 (2) Gyroscopic DI Optional Equipment – Century NSD-350/1000 or Sandel 3308 (3) Gyro Power Supply FAR §23.1331(a)(3) – EL 37-06 (4) Sensitive Altimeter P/N 12102-001	(5) OAT Std Equipment – see EL # 34-19 (6) Time in hr/min/sec Std Equipment – see EL # 34-19 (7) ASI/Heated Pitot Fitted as Standard – see Flight Manual Fig 7-12 (8) Rate of Climb/Descent Std Equipment – see EL # 34-16
91.519	IFR Communication & Navigation Equipment	Full IFR Capability is standard, with four Avionics Options available: Avionics Configuration “A” – GNS 430 (GPS/COM/NAV) plus GNC 250XL (GPS/COM) Avionics Configuration “B” – GNS 430 (GPS/COM/NAV) plus GNC 420 (GPS/COM) Avionics Configuration “C” – Dual GNS 430 (GPS/COM/NAV) Avionics Configuration “D” – Cirrus Perspective by Garmin/G1000 (GPS/COM/NAV))
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	Emergency Egress Hammer fitted as std – see FM Fig 7-6 Portable Fire Extinguisher fitted as standard – see EL #26-01 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)	ELT Required Equipment – See Equipment List Item 25-01
91.531	Oxygen Indicators - Volume/Pressure/Delivery	<b>Operational requirement – Compliance as applicable</b>
91.533	Oxygen for Non-Pressurised Aircraft >30 min above FL100 – Supplemental for crew, 10% Pax – Therapeutic for 3% of Pax Above FL100 – Supplemental for all Crew, Pax – Therapeutic for 1% of Pax – 120l PBE for each crew member	Maximum Operating Altitude ..... 17,500 ft MSL Earlier AFM Limitations specified oxygen systems must be approved by Cirrus Design and listed in Oxygen System AFM Supplement 11934-S09 [This was driven by FAA amendment to harmonize with JAA. Crashworthiness was the concern.] Cirrus now advise any FAA-Approved system may be used.
91.541	SSR Transponder and Altitude Reporting Equipment	GTx 327 Tx is Standard Equipment – see EL Item 34-29
91.543	Altitude Alerting Device - Turbojet or Turbofan	Not Applicable – Not turbo jet or turbofan powered
91.545	Assigned Altitude Indicator	<b>Operational requirement – Compliance as applicable</b>
A.15	ELT Installation Requirements	<i>To be determined on an individual aircraft basis</i>

NOTE: Equipment List Item numbers in the table above were taken from P/N 11934-ELXXXX dated 22 October 2002



## Civil Aviation Rules Part 135

### Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
135.355	Seating/Restraints – Shoulder harness for flight-crew seats	§FAR 23.785 (Required under §23.562)
135.357	Additional Instruments (Powerplant and Propeller)	Certificated to FAR Part 23, including §23.1305
135.359	Night Flight	Landing light, Pax compartment <i>Operating Requirement – Compliance as applicable</i>
135.361	IFR Operations	
135.363	Emergency Equipment (Part 91.523 (a) and (b))	<i>Operating Requirement – Compliance as applicable</i>
135.367	Cockpit Voice Recorder	Not Applicable – Only two-crew helicopters
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

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:

Three-view drawing Cirrus Design Corporation Model SR20  
Copy of FAA Type Certificate/ Type Certificate Data Sheet A00009CH

## Sign off

.....  
David Gill  
Team Leader Airworthiness

.....  
Checked – Craig Bamber  
Airworthiness Engineer

## Appendix 1

### List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
SR20 (3000 lb. GW), SR22	Cirrus Design Corporation	3/21B/17	9 December 2002
SR20, SR22 (Garmin1000)	Cirrus Design Corporation	9/21B/21	29 March 2010
SR22 (3600 lb. GW)	Avcraft Engineering NZ Ltd	15/21B/5	12 September 2014
SR22T	Cirrus Design Corporation	15/21B/11	20 March 2015
SR20/22/22T “G6”	Cirrus Design Corporation	17/21B/17	5 October 2017