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# **Type Acceptance Report**

**TAR 14/21B/5**

**CESSNA 190/195**



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## Executive Summary

New Zealand Type Acceptance has been granted to the Cessna 190/195 Series based on validation of FAA Type Certificate number A-790. 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 §21.191, 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).

## 1. Introduction

This report details the basis on which Type Acceptance Certificate No. 14/21B/5 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:	Cessna Aircraft Company
Type Certificate:	A-790
Issued by:	Federal Aviation Administration
Model(s):	190, 195, 195A, 195B
MCTOW:	3350 lb. [Landplane] 3600 lb. [Seaplane]
Max. No. of Seats:	5
Noise Standard:	Not Applicable
<b>Engine:</b>	Continental W670-23 [Model 190]
	Type Certificate: E-162
	Issued by: Federal Aviation Administration

Jacobs R755-A2 [Model 195]

Type Certificate: E-237

Issued by: Federal Aviation Administration

Jacobs L-4MN (R-755-9) [Model 195A]

Type Certificate: E-121

Issued by: Federal Aviation Administration

Jacobs R755-B2 [Model 195B]

Type Certificate: E-237

Issued by: Federal Aviation Administration

**Propeller:** Hamilton Standard 2B20/6135-15 or -16

Type Certificate: P-255

Issued by: Federal Aviation Administration

### 3. Type Acceptance Details

The application for New Zealand type acceptance of the Model 195 was from the importer B B Aviation, dated 13 August 2013. The first-of-type example was serial number 7410, registered ZK-BEB. The Cessna 190 Series is a five-seat high-wing all-metal monoplane with fixed undercarriage powered by a radial engine.

Type Acceptance Certificate No. 4/21B/5 was granted on 15 November 2013 to the Cessna 190/195 Series based on validation of FAA Type Certificate A-790. Specific applicability is limited to the coverage provided by the operating documentation supplied. There are no special requirements for import into New Zealand.

The Cessna Model 190 was essentially an enlarged all-metal development of the pre-war Airmaster aircraft, which was renowned for its efficient performance. The Model 195A introduced in 1953 had a larger split flap, changed elevator shape and improved pitot-static installation. The TCDS states the four models are the same except for the engine installation, and each model has the same list of eligible serial numbers. FAA Letter L115W-12-807 dated November 28, 2012, states the *“TCDS was written in such a manner to permit a tremendous amount of latitude (unlike more recent TCDS’s) with respect to approved engine configurations. .. all eligible serial numbers Model 195, 190, 195A and 195B are FAA approved for any of the engines listed on TCDS A-790. Additionally there is no further FAA approval required for those various airplane/engine combinations identified on the TCDS. There is no need to alter the original Cessna airplane ID plate.”*

There has been one previous example of the Cessna 195 on the NZ Civil Aircraft Register, serial number 7706 which was registered ZK-MWY. This was issued with a temporary airworthiness certificate in the Restricted Category valid for three months in December 1987, pending supply of type data. Unfortunately the aircraft was destroyed in an accident in January 1988 and the validation process was never completed.

#### 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:

- FAA Aircraft Specification number A-790 at Revision 36 dated March 31, 2003
  - Model 195 approved June 12, 1947
  - Model 190 approved July 1, 1947
  - Model 195A approved January 6, 1950
  - Model 195B approved March 31, 1952

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of the Cessna 190/195 is CAR 3 dated December 15, 1946. This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41 and Advisory Circular 21-1A, as CAR 3 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 additional special conditions have been prescribed by the Director under §21.23.

(ii) *Special Conditions:*

Nil

(iii) *Equivalent Level of Safety Findings:*

Nil

(iv) *Airworthiness Limitations:*

Nil

(3) Aircraft Noise and Engine Emission Standards:

Not Applicable.

(4) Certification Compliance Listing:

Type Inspection Report – Cessna 195

(5) Flight Manual: Airplane Flight Manual [Model 190 or 195] Landplane – C.A.A. Approved – CAA Accepted as AIR 3265 \*

Airplane Flight Manual Model 195A Landplane – C.A.A. Approved December 27, 1949 – CAA Accepted as AIR 3266

Airplane Flight Manual Model 195B Landplane and Skiplane – C.A.A. Approved 31 March, 1952 – CAA Accepted as AIR 3267

Notes: \* The TCDS states this Flight Manual is revised “*applicable to the particular model and serial number*”, and therefore may apply to either the 190 or 195 and will have an individual date of issue.

The Flight Manual is two pages, with the second page containing performance data. The Revision dated September 14, 1949, or later, contains revised (reduced) landing distances.

(6) Operating Data for Aircraft:

(i) *Maintenance Manual:*

No maintenance manual was published. Cessna advise maintenance information is provided in the Owner's Manual, and applicable Service Bulletins and/or Letters.

Publication P138-13 – Owner's Manual Cessna 190-195

(ii) *Current service Information:*

Service Bulletins and Letters available on *Cessview*

(iii) *Illustrated Parts Catalogue:*

Publication P112-12 – Model 190/195 (1947-1954) Parts Catalog

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

All Cessna publications are now available directly to the CAA through the Cessna website <http://techpubs.cessna.com/>

(8) Other information:

A batch of aircraft were sold to the USAF and detailed manuals were produced for them which are now widely used by maintenance organisations:

Flight Handbook USAF Series LC-126A/B/C – T.O. 1C-126(L)A-1

Handbook Maintenance Instructions LC-126A/B/C – TM 1-1C-126(L)A-2

Handbook Structural Repair Instructions USAF LC-126A/B/C – AN 01-125CA-3



## 5. Additional New Zealand Requirements

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	<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	CAR §03.543
91.507	Pax Information Signs – Smoking, safety belts fastened	Not Applicable – Less than 10 passenger seats
91.509	Minimum Instruments and Equipment	
	(1) ASI	CAR §03.51(a)(1)
	(2) Machmeter	N/A
	(3) Altimeter	CAR §03.51(a)(2)
	(4) Magnetic Compass	CAR §03.51(a)(3)
	(5) Fuel Contents	CAR §03.51(b)(1)(i)
	(6) Engine RPM	CAR §03.51(b)(1)(iv)
	(7) Oil Pressure	CAR §03.51(b)(1)(ii)
	(8) Coolant Temp	N/A – Air-cooled engine
	(9) Oil Temperature	CAR §03.51(b)(1)(iii)
	(10) Manifold Pressure	CAR §03.51(b)(2)(v)
	(11) Cylinder Head Temp.	CAR §03.51(b)(2)(iii)
	(12) Flap Position	CAR §03.353
	(13) U/C Position	N/A – Fixed undercarriage
	(14) Ammeter/Voltmeter	CAR §03.51(c)(2)
91.511	Night VFR Instruments and Equipment	<i>Operating Rule – Compliance to be determined by operator</i>
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 9 pax - First Aid Kits per Table 7	Not Applicable – Less than 10 passenger seats
	- Fire Extinguishers per Table 8	Not Applicable – Less than 10 passenger seats
	(b) More than 20 pax - Axe readily accessible to crew	Not Applicable – Less than 20 passenger seats
	(c) More than 61 pax - Portable Megaphones per Table 9	Not Applicable – Less than 61 passenger seats
91.529	ELT - TSO C126 406 MHz after 22/11/2007	<i>Operating Rule – Compliance to be determined by operator</i>
91.531	Oxygen Indicators - Volume/Pressure/Delivery	<i>Operating Rule – Compliance to be determined by operator</i>
91.533	Oxygen for Non-Pressurised 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	<i>Operating Rule – Compliance to be determined by operator</i>
91.545	Assigned Altitude Indicator	Not Applicable – Not turbo jet or turbofan powered
A.15	ELT Installation Requirements	<i>To be determined on an individual aircraft basis</i>

## Attachments

The following documents form attachments to this report:

Three-view drawing Cessna Model 190  
Copy of FAA Aircraft Specification Number A-790

## Sign off

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David Gill  
Team Leader Airworthiness

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Checked – Peter Gill  
Team Leader Design

## Appendix 1

### List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
Cessna 190, 195, 195A, 195B	B B Aviation	14/21B/5	15 November 2013