

---

# **Type Acceptance Report**

**TAR 18/21B/24**

**Cessna 185 Series**



## 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>3</b>
<b>4. NZCAR §21.43 DATA REQUIREMENTS</b>	<b>4</b>
<b>5. NEW ZEALAND OPERATIONAL RULE COMPLIANCE</b>	<b>7</b>
<b>ATTACHMENTS</b>	<b>8</b>
<b>APPENDIX 1</b>	<b>8</b>



## Executive Summary

New Zealand Type Acceptance has been granted to the Cessna Model 185 Series based on validation of FAA Type Certificate number 3A24. There are no special requirements for import.

All models listed under the FAA type certificate have been type accepted in New Zealand, 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.)

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/24 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 covers all models included on the State-of-Design type certificate which have been granted type acceptance in New Zealand. Appendix 1 details which models have been type accepted in accordance with the provisions of CAR Part 21B and which were certificated prior to that under NZCAR Section B.9 and are now type accepted under the transitional arrangements of Part 21 Appendix A(c).

## 2. Aircraft Certification Details

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

Manufacturer: Cessna Aircraft Company

Type Certificate Holder: Textron Aviation Inc. (since July 29, 2015)

Type Certificate: 3A24

Issued by: Federal Aviation Administration

Production Approval: Delegation Option Manufacturer No. CE-1  
FAA Production Certificate No.4

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

(i) **Model:** 185, 185A, 185B, 185C, 185D, 185E  
A185E, A185F

**MCTOW:** 3200 lb. [1451 kg]  
3300 lb. (1497 kg) – Model 185E, A185E  
3350 lb. [1519 kg] – Serial number 185-1236 and up

**Max. No. of Seats:** 6

**Noise Standard:** FAR 36 – Serial number 18502300, 18503459 [1978] and up

**Engine:** Continental O-470-F  
Type Certificate: FAA E-273  
Continental IO-520-D  
Type Certificate: FAA E5CE

**Propeller:** McCauley D2A36C33/90M-2  
Type Certificate: FAA P-880  
McCauley D2A34C49/90A-2 or D2A34C58/90AT-2 or  
McCauley D2A37C230/90REB-2  
Type Certificate: FAA P3EA  
McCauley D3A34C403/80VA-0 (A185E/F)  
Type Certificate: FAA P47GL

**Notes:** 1. Refer to FAA TCDS 3A24 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

There have been many examples of the Cessna 185 in New Zealand prior to 1995 when Part 21 was introduced, and those particular model years or serial number ranges were therefore deemed to have a type acceptance certificate under the transitional arrangements of Part 21 Appendix A(c). This first application for New Zealand type acceptance under Part 21B was to add all the other variants and model years of the 185 Series not previously included in the existing type acceptance. This was at the request of the type certificate holder, who has provided access to all technical publications. The Cessna 185 is a six-seat high-wing single-engined utility aircraft with tailwheel undercarriage.

Type Acceptance Certificate No. 18/21B/24 was granted on 25 January 2019 to the 1968 and 1980 Model Cessna A185F based on validation of FAA Type Certificate 3A24. 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 185 first appeared in 1961 as an evolutionary follow-on to the popular 180. It is basically a beefed-up 180 with a 260-horsepower fuel-injected Continental IO-470, later upped to the 300 hp IO-520 on the A185E. Intended as a utility aircraft the middle and rear row seats are quickly detachable to provide space for freight, while the CarryAll version had a larger side-loading door. The A185F introduced the camber-lift wings (drooped leading edges) and needed a larger dorsal fin. The first example of the Cessna Model 185 in New Zealand was serial number 185-0017, which was registered ZK-CAK in May 1961.

## 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) State-of-Design Type certificate:

FAA Type Certificate Number 3A24

FAA Type Certificate Data Sheet No. 3A24 at Revision 40 dated July 29, 2015

- Model 185 approved January 31, 1961
- Model 185A approved September 20, 1961
- Model 185B approved June 25, 1962
- Model 185C approved July 19, 1963
- Model 185D approved June 17, 1964
- Models 185E and A185E approved September 24, 1965
- Model A185F approved October 6, 1972

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of the Model 185 Series up to the Model 180B is Part 3 of the Civil Air Regulations dated November 1, 1949, as amended by 3-1 through 3-5. For the 1979 A185F FAR 23 paragraph §23.1559 effective March 1, 1978 was added, plus for the 1985 A185F FAR paragraph §23.1545(a) of Amendment 23-23 dated December 1, 1978.

This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41 because CAR 3 was the predecessor of FAR 23, which is the basic standard for Normal Category aircraft called up under CAR 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:*

*1976 A185F and on:*

CAR 3.757 Airspeed Indicator; CAR 3.778(a) Operating Limitations – The use of indicated instead of calibrated airspeed was accepted provided the approved calibration data given in the POH is available to the pilot. ASI calibration data must be predicated on flight test.

(iv) *Airworthiness Limitations:*

See the Aircraft Maintenance Manual.

(3) Aircraft Noise and Engine Emission Standards:

(i) *Environmental Standard:*

The 1978 Cessna Model A185F has been certificated for noise under FAR Part 36, including Amendments 36-1 through 36-6.



## (ii) Compliance Listing:

See Advisory Circular 36-1H Appendix 7 and Flight Manual (Section 4).

Model:	MTOW:	Engine:	Propeller:	RPM:	Noise Levels	
					MdbA	CdbA
A185F	3300	IO-520-D	D3A34C403	2700	78.9	77.9

## (4) Certification Compliance Listing:

Model 185 Reports: S-185-1: Wing Analysis; S-185-2: Fuselage Analysis  
 DM-185-4: Type Inspection Report – Installation of Wheel Skis  
 185A Reports: S-185A-0: Basic Data; S-185A-26-2: Simplified Flutter Survey;  
 Model 185B Report: S-185B-33: Structures Substantiation Summary  
 Model 185C Report: S-185C-31: Equipment Weight Report  
 Model 185D Reports: S-185D-33: Structures Substantiation Summary  
 Cessna 185 Utility Aeroplane (General Configuration)  
 185E Reports: S-185E-8: Engine Mount Analysis; S-185E-0: Basic Data;  
 S-185E-33: Structures Substantiation Summary  
 S-185E-26-2: Ground Vibrations Test Results and Simplified Flutter Survey  
 S-185E-4: Vertical Tail Analysis; S-185E-6: Flap Analysis;  
 S-185E-5: Aileron Analysis; S-185E-7: Structures Landing Gear Analysis

## (5) Flight Manual:

<b>CAA AIR Number:</b>	<b>Cessna Publication:</b>	<b>Title:</b>
AIR 3066	D101-13	Model 185 (1961) Owner's Manual
AIR 3067	D129-13	Model 185A (1962) Owner's Manual
AIR 3061	D159-13	Model 185B (1963) Owner's Manual
AIR 3062	D211-13	Model 185C (1964) Owner's Manual
AIR 3065	D265-13	Model 185D (1965) Owner's Manual
AIR 3087	D360-13	Model 185E (1966) Owner's Manual
AIR 3063	D412-13	Model A185E (1967) Owner's Manual
AIR 3712	D522-13	Model A185E (1968) Owner's Manual
AIR 3088	D695-13	Model A185E (1969) Owner's Manual
AIR 3089	D772-13	Model A185E (1970) Owner's Manual
AIR 3064	D937-13	Model A185E (1971-1972) Owner's Manual
AIR 2008	D1001-13	Model A185F (1973) Owner's Manual
AIR 2751	D1022-13	Model A185F (1974) Owner's Manual
AIR 2752	D1042-13	Model A185F (1975) Owner's Manual
AIR 2753	D1063-13	Model A185F (1976) Pilot's Operating Handbook
AIR 2754	D1088-13	Model A185F (1977) Pilot's Operating Handbook
AIR 2755	D1116-13	Model A185F (1978) Pilot's Operating Handbook
AIR 2756	D1144-13PH	Model A185F (1979) Pilot's Operating Handbook
AIR 3713	D1179-13PH	Model A185F (1980) Pilot's Operating Handbook
AIR 2339	D1200-13PH	Model A185F (1981) Pilot's Operating Handbook
AIR 2295	D1219-13PH	Model A185F (1982) Pilot's Operating Handbook
AIR 2220	D1237-13PH	Model A185F (1983) Pilot's Operating Handbook
AIR 2244	D1258-13PH	Model A185F (1984) Pilot's Operating Handbook
AIR 2248	D1279-13PH	Model A185F (1985) Pilot's Operating Handbook

(6) Operating Data for Aircraft, Engine and Propeller:

(i) *Maintenance Manual:*

Cessna 100 Series (1953-1962) Service Manual – Publication D138-13

Cessna 100 Series (1963-1968) Service Manual – Publication D637-13

Cessna 180/185 (1969-1980) Service Manual – Publication D2000-13

Cessna 180/185 (1981-1985) Service Manual – Publication D2067-13

(ii) *Current service Information:*

Cessna Service Bulletins

(iii) *Illustrated Parts Catalogue:*

Cessna 180/185 (1961-1973) Parts Catalog – Publication P527-12

Cessna 180/185 (1974-1985) Parts Catalog – Publication P699-12

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

Textron Aviation Publications are now available through the Textron Aviation Technical Publications website at <https://ww2.txtav.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 Rule 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 (for the 182T current production models), except as noted:

### Civil Aviation Rule Part 91

#### Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
91.505	Seating and Restraints – Safety belt/Shoulder Harness	CAR §3.715
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) Not Applicable CAR §3.655(a)(2) CAR §3.655(a)(3) CAR §3.672 CAR §3.655(b)(1)(iv) CAR §3.655(b)(1)(ii)
91.511	Night VFR Instruments and Equipment	<i>Operational requirement – Compliance as applicable</i>
91.513	VFR Communication Equipment	<i>Operational requirement – Compliance as applicable</i>
91.517	IFR Instruments and Equipment	<i>Operational requirement – Compliance as applicable</i>
91.519	IFR Communication and Navigation Equipment	<i>Operational requirement – Compliance as applicable</i>
91.523	Emergency Equipment: (a) More Than 9 pax – First Aid Kits per Table 7 – Fire Extinguishers per Table 8 (b) More than 20 pax – Axe readily accessible 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 C126 406 MHz after 22/11/2007	<i>Operational requirement – Compliance as applicable</i>
91.531	Oxygen Indicators – Volume/Pressure/Delivery	<i>Operational requirement – Compliance as applicable</i>
91.533	Oxygen for non-Pressurised Aircraft	Not fitted as standard
91.541	SSR Transponder and Altitude Reporting Equipment	<i>Operational requirement – Compliance as applicable</i>
91.543	Altitude Alerting Device – Turbojet or Turbofan	Not Applicable – Not turbo jet or turbofan powered
91.545	Assigned Altitude Indicator	<i>Operational requirement – Compliance as applicable</i>
A.15	ELT Installation Requirements	<i>To be determined on an individual aircraft basis</i>

### Civil Aviation Rule Part 135

#### Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
135.355	Seating / Restraints – Shoulder harness flight-crew seats	<i>Operational requirement – Compliance as applicable</i>
135.357	Additional Instruments (Powerplant and Propeller)	Has all instruments required under 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	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

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. Rules may have changed since then and compliance 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 drawings Cessna Model 185 Skywagon  
Copy of FAA Type Certificate Data Sheet 3A24

## Sign off

.....  
David Gill  
Team Leader Airworthiness

.....  
Checked – Jason Ashworth  
Team Leader Product Certification

## Appendix 1

### List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
185, 185A, 185B, 185C	AC 21-1.2/NZCAR Part 21 App. A(c)		
180D, 185E, A185E	AC 21-1.2/NZCAR Part 21 App. A(c)		
A185F (1973-79, 1981-85)	AC 21-1.2/NZCAR Part 21 App. A(c)		
A185F (1968, 1980)	Textron Aviation Inc.	18/21B/12	25 January 2019