
Type Acceptance Report

TAR 3/21B/5 – Revision 3

TEXTRON CESSNA 525 Series

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Executive Summary

New Zealand Type Acceptance has been granted to the Textron Aviation Inc., Cessna Model 525 Series based on validation of FAA Type Certificate A1WI. There are no special requirements for import.

Applicability is currently limited to the Models and 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(2).

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/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. Aircraft Certification Details

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

Manufacturer: Textron Aviation Inc.
(S/N 525-0875, 0877, 0878 and 0881 and on)
(S/N 525B-0474 and on)
(S/N 525C-0193 and on)

Cessna Aircraft Company (up to July 29, 2015)

Type Certificate: A1WI
Issued by: Federal Aviation Administration

Production Approval: FAA Production Certificate 4
(DOA-230428-CE (CE-3) and since January 5, 2009
ODA-100129-CE)

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

(i) **Model:** 525

MCTOW: 10,400 lb. [4717 kg] “CJ”
10,600 lb. [4808 kg] “CJ1”
10,700 lb. [4853 kg] “CJ1+/M2”

Max. No. of Seats: 8

Noise Standard: FAR Part 36 (CJ/CJ1 – Stage 3)
FAR Part 36 (CJ1+/M2 – Stage 4)

Engine: Williams International FJ44-1A (CJ/CJ1)
Williams International FJ44-1AP (CJ1+/M2)
Type Certificate: E3GL
Issued by: Federal Aviation Administration

(ii) **Model:** 525A

MCTOW: 12,375 lb. [5613 kg] “CJ2”
12,500 lb. [5670 kg] “CJ2+”

Max. No. of Seats: 10

Noise Standard: FAR Part 36 (CJ2 – Stage 3)
FAR Part 36 (CJ2+ – Stage 4)

Engine: Williams International FJ44-2C (CJ2)
Williams International FJ44-3A-24 (CJ2+)
Type Certificate: E3GL
Issued by: Federal Aviation Administration

(iii) **Model:** 525B
MCTOW: 13,870 lb. [6291 kg]
Max. No. of Seats: 10
Noise Standard: FAR Part 36 (CJ3/CJ3+ – Stage 4)
Engine: Williams International FJ44-3A
Type Certificate: E3GL
Issued by: Federal Aviation Administration

(iv) **Model:** 525C
MCTOW: 17,110 lb. [7761 kg]
Max. No. of Seats: 11
Noise Standard: FAR Part 36 (CJ4 – Stage 4)
Engine: Williams International FJ44-4A
Type Certificate: E3GL
Issued by: Federal Aviation Administration

3. Application Details and Background Information

The original application for the Model 525 NZ type acceptance was from the manufacturer dated 16 August 2002, forwarded through the FAA Wichita ACO. The first-of-type example was serial number 525-0511 registered ZK-TBM. The 525 Series is an all-metal pressurized low-wing business jet with provisions for two crew and up to six passengers, and is powered by twin turbofan engines pylon-mounted on the rear fuselage. One of the aerodynamic features of the CJ is the use of a laminar flow wing, with bleed air de-icing.

Type Acceptance Certificate No. 3/21B/5 was granted on 28 February 2003 to the Cessna Model 525 based on validation of FAA Type Certificate A1WI, and included the FJ44-1A engine based on FAA Type Certificate E3GL. Specific applicability is limited to the operating documentation supplied, in this case the CJ1 version introduced from serial number 0360 on. There are no special requirements for import into New Zealand.

This report was raised to Revision 1 under CAA Work Request number 5/21B/18 to include the Model 525B “CJ3” variant, which was type accepted on 27 May 2005. The applicant was again the manufacturer by letter dated 17 November 2004. The first-of-type example was serial number 525B-0027, which recycled the registration ZK-TBM.

Revision 2 added the Model 525C “CJ4” variant. The applicant was the manufacturer, and the first-of-type example was serial number 525C-0112 to be registered ZK-PGA. Type acceptance was granted on 9 October 2012. (The Williams FJ44 Series engine is now covered by Type Acceptance Certificate 13/21B/1). As part of the validation process a team from the CAA Aircraft Certification Unit visited Cessna for a familiarisation visit.

The four or five passenger Model 525, marketed as the Citationjet, was Cessna’s second new entry-level business jet, and was certificated in 1992. It was fitted with two 1900 lb thrust Williams FJ44-1A engines, and was approved for flight up to FL410 with a V_{MO} of 260 KCAS/0.70 Mach number calibrated. In 2000 Cessna certificated an enlarged version seating six passengers called the Model 525A CJ2. The fuselage was stretched 52” and the wingspan increased 36”, a new swept horizontal stabiliser was fitted, and 2400 lb thrust FJ44-2C engines were fitted to increase V_{MO} to 275 KCAS/0.72 Mach. The CJ2 aircraft was also fitted with the Rockwell Collins Proline 21 integrated flight director/autopilot and EFIS system utilising an eight by ten inch LCD Primary Flight Display (PFD) and a similar size Multi-Function Display (MFD) on the centre panel. All navigation and mode information is displayed on the PFD (or MFD during reversion), while engine parameters are shown on the MFD. Both displays are capable of providing map, compass and radar information. Simultaneously with the introduction of the CJ2, Cessna refined the 525 into the CJ1 with the installation of the same new avionics system and an increase in gross weight, applicable from serial number 360 on.

The Model 525B CJ3 certificated in 2004 is the second new model in the family, with a further increase in cabin length of 24.15 inches over the CJ2 to provide better legroom and additional storage space. Wingspan is increased another 42” and higher power FJ44-3A engines rated at 2820 lb equipped with FADEC controls are fitted to allow for flight up to FL450. (Post certification 525B activities included RVSM approval under TCDS Rev.13, while TCDS Rev.14 documented Flight Into Known Icing approval.)

In 2005 Block Point Change versions of the Models 525 and 525A were developed and introduced from serial numbers 525-600 and 525A-300, which were marketed as the CJ1+ and the CJ2+. The differences were primarily updated engine versions fitted with FADEC controls, which increased thrust up to 1965 lb for the FJ44-1AP engines and 2490 lb for the FJ44-3A-24 engines, along with updated avionics and some other improvements.

The Model 525C, marketed as the CJ4, is a derivative of the CJ3 with a 21” fuselage stretch and an all-new moderately swept (12.5°) lower aspect-ratio wing using Model 680 aerofoil technology. Increased thrust 3621 lb FJ44-4A engines are fitted, and the CJ4 has higher operating weights and an increased V_{MO} of 306 KCAS/0.77 Mach. Revision 21 of the TCDS added a 160 lb increase in the takeoff and landing weights of the aircraft.

Revision 3 to this report was raised to include the Model 525B Block Point Change (BPC) (which is marketed as the CJ3+) after application from the manufacturer dated April 24, 2017. The first-of-type example was serial number 525B-0524 to be registered ZK-RJZ. The 525B BPC is basically an upgrade to the avionics and the aircraft interior, including new cabin entertainment, and applies from serial number 0451 (plus the prototype installation on 0057). The Garmin 3000 system replaces the previous Collins Pro-line 21 avionics system, along with other incidental changes. All these and the interior refresh use the same equipment, installations and wiring assemblies previously approved on the Model 525 (marketed as the Citation M2).

The opportunity was also taken to add all existing Model 525 versions not previously covered by the Type Acceptance certificate, which included the 525A and the “M2”. The M2 was a production restart with changes that include a new avionics suite (and related changes), FJ44-1AP-21 engines which replace the current FJ44-1AP engines to provide increased climb and cruise thrust, an increase in usable fuel, winglet modification, and a new interior with new cabin entertainment. Type Acceptance of the CJ3+ and the other additional Cessna 525 versions was granted on 15 August 2017.

Serial Number Applicability:

Model 525:

S/N 525-0001 through 525-0359 – Commercial name Citationjet or CJ

S/N 525-0360 through 525-0599 – Commercial name CJ1

S/N 525-0600 through 525-0701 (except 525-0685) – Commercial name CJ1+

S/N 525-0685 and 525-0800 and on – Commercial name M2

Model 525A:

S/N 525A-0001 through 525A-0299 – Commercial name CJ2

S/N 525A-0300 and on – Commercial name CJ2+

Model 525B:

S/N 525B-0001 through 525B-00450 (except 525B-0057) – Commercial name CJ3

S/N 525B-0057 and 525B-0451 and on – Commercial name CJ3+

Model 525C:

S/N 525C-0001 and on – Commercial name CJ4

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 Type Certificate Number A1WI

FAA Type Certificate Data Sheet no. A1WI at Revision 25 dated March 13, 2017

- Model 525 Approved October 15, 1992
- Model 525 “CJ1” Approved February 16, 2000
- Model 525 “CJ1+” Approved June 17, 2005
- Model 525 “M2” Approved December 20, 2013
- Model 525A “CJ2” Approved June 21, 2000
- Model 525A “CJ2+” Approved September 30, 2005
- Model 525B “CJ3” Approved October 15, 2004
- Model 525B “BPC – CJ3+” Approved September 4, 2014
- Model 525C “CJ4” Approved March 12, 2010

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of the Cessna Model 525 Citationjet is FAR Part 23, as amended by Amendments 23-1 through 23-38, and 23-40, plus Special Condition 23-ACE-55, and FAR Part 34 effective September 10, 1990. One Exemption was granted by the FAA, and one Equivalent Level of Safety Finding (ELOS) made. For the “CJ1+” some paragraphs applicable to the engines and FADEC were updated to Amendment 23-54. For the “M2” additional paragraphs of FAR 23 were certified at Amendment 23-61, with (1) additional paragraph at Amendment 23.62.

For the Model 525A various paragraphs as listed on the TCDS were updated to later amendments up to Amendment 23-51, and FAR Part 34 Amendment 34-3. A further Special Condition was applied for High Altitude Operations up to 45,000 feet, and two additional ELOS were included in the certification basis. For the 525A BPC the certification basis was updated to FAR 23 Amendment 54 for the engine and FAR 23.1309 Amendment 49 for the FADEC, the same as the 525B.

For the Model 525B the certification basis was FAR Part 23 (Commuter Category) including Amendments through 23-54, although some paragraphs listed on the TCDS were still at Amdt 23-40 and two at Amdt 23-49. One further Special Condition was applied for Flight Performance and Characteristics and Operating Limitations. An additional exemption was granted and four extra ELOS were made. For the 525B BPC four FAR 23 paragraphs were updated to Amendment 23-62.

For the Model 525C the certification basis was FAR Part 23 (Commuter Category) including Amendments through 23-57, plus four additional special conditions were applied, seven exemptions granted and eight more ELOS findings made.

The certification basis of the Cessna 525 Series detailed above are acceptable in accordance with CAR Part 21B Para §21.41, as FAR Part 23 is the basic standard for Normal and Commuter Category Airplanes called up under Part 21 Appendix

C. All the special conditions, exemptions and equivalent level of safety findings have been reviewed and accepted by the CAA. There are no non-compliances and no additional special conditions have been prescribed by the Director under §21.23.

(ii) *Special Conditions:*

Model 525/525A/525B:

Special Condition 23-ACE-55 – Various additional requirements : cockpit smoke evacuation; protection of electronic systems from lightning and HIRF; EFIS; thrust attenuating systems; engine fire extinguishing system; high-speed characteristics and M_{MO} ; effects of contamination on natural laminar flow airfoils, plus takeoff and landing performance requirements which are equivalent to FAR Part 25.

Models 525A/525B/525C:

Special Condition 23-102-SC Model 525A High Altitude Operations – For flight up to FL450 the FAA imposed additional requirements on ventilation (10 cubic ft air per person/min), air conditioning (cabin temperature/time history after failure), pressurized cabins (structural integrity including DTA, and cabin altitude-time history after failure), oxygen equipment, supply, distribution and equipment (quick-don masks for the flight crew, continuous flow system for the passengers and a separate minimum reserve supply for the flight crew must be provided.) Any modifications to the pressure vessel must be approved in accordance with the requirements in the certification basis.

Models 525B/525C:

Special Condition 23-145-SC, Flight Performance & Characteristics, and Operating Limitations – Essentially a set of detailed requirements which apply FAR 25 requirements more appropriate to a turbo-jet aircraft in lieu of the FAR 23 Commuter Category requirements which were written for a turbo-prop aircraft. This included the use of a V_{MO} ; balanced field distances instead of accelerate-stop; all the same as used under 23-ACE-55 for the earlier Models.

Model 525C:

Special Condition 23-234-SC, Single Point Refuel/Defuel System – This applied the FAR 25.979(e) requirement that the airplane defueling system (not including fuel tanks and fuel tank vents) must withstand an ultimate load that is 2.0 times the load arising from the maximum permissible defueling pressure (positive or negative) at the airplane fuelling connection.

Special Condition 23-236-SC, Lithium Ion Battery Installation – The 525C electrical system was designed around the use of a lithium-ion battery. Because of their characteristics the FAA set additional requirements for flammable fluid fire protection; safe cell temperatures and pressures during any probable overcharging or overdischarging; preclusion of explosion or fire in the event of those failures; and specific maintenance and inspections requirements in the ICA.

Special Condition 23-239-SC, High Fuel Temperature – Instead of compliance with FAR 23.961 Cessna had to demonstrate freedom from vapour lock when using fuel at the fuel tank system temperature that is most critical, including all sources of fuel heating and ambient effects.

Special Condition 23-240-SC, Flight – The FAA amended §23.161(b)(2) to apply at all speeds from 1.4 V_{S1} to V_{MO}/M_{MO} . FAR §23.181(a) and (d) was also amended to refer to the maximum allowable speed appropriate to the configuration of the airplane.

(iii) *Equivalent Level of Safety Findings:*

Models 525/525A/525B:

Equivalent Level of Safety ACE-00-01/A (Applicable to s/n 525-0360 and on equipped with Collins Proline 21 electronic engine instruments fitted under STC SA00848WI-D) – Against FAR §23.1305(c)(2), (c)(5) and §23.1549(a) through (d), to permit direct reading, digital-only displays for the high-pressure turbine speed (N_2) and fuel flow indications.

Models 525A/525B:

Equivalent Level of Safety ACE-99-07/A – §23.841(b)(6) – This requires a warning to the crew when a safe or preset CPA (10,000 ft) is exceeded. To enable takeoff and landing at field elevations up to 14,000 ft the system is designed to automatically inhibit warnings under specific conditions, to minimise nuisance altitude warnings and allow the CPA to equal the aircraft altitude. The FAA accepted the system features as meeting the intent of the Rule. However for flight below FL250 for extended periods with the CPA warning shifted one pilot must use oxygen continuously.

Models 525A/525B/525C:

Equivalent Level of Safety ACE-00-05/A/B – §23.841(a) – The FAA allowed the 525 Series to have small temporary cabin pressure altitude excursions above 15,000 feet in the event of any probable pressurization system failure. The justification is that the severity of hypoxia effects increase progressively with increasing Cabin Pressure Altitude (CPA) and duration of exposure. Tests showed the duration and magnitude of CPA overshoot is less than the oscillations below it.

Model 525B:

Equivalent Level of Safety ACE-02-18 – §23.783(f)(1) – Sanctions a smaller passenger entry door opening size than required under the Commuter Category, on the grounds that some dimensions exceed the minimum, the total projected egress area is only just under the requirement and the same door has been certified under Part 25 for various Cessna 550/560 Models for up to 11 passengers. (An evacuation test was carried out with 11 occupants on the original Model 500.)

Equivalent Level of Safety ACE-02-20 – §23.815(b) – To permit a cabin aisle width less than required under the Commuter Category (9” below and 13” above 25” from the floor, compared to the specified 12” and 15”) on the basis that similar ELOS have been granted to the Cessna Models 500/550/560 (which have the identical fuselage cross-section) under FAR 25 on the grounds that evacuation tests have shown negligible differences in egress time.

Equivalent Level of Safety ACE-03-07 – §23.853(d)(2) – To allow the “No Smoking” placard lettering size to be the same as previously approved for the 525A, rather than the exact size required under the Commuter category. No minimum size is specified in FAR 25 for other Citations.

Equivalent Level of Safety ACE-04-06 – §23.1447(e) – To permit the use of a streamer to pull the passenger oxygen dispensing units down in lieu of automatic presentation, because at low temperatures the units become stiff and will not fall just before the cabin altitude exceeds 15,000 ft.

Equivalent Level of Safety ACE-11-07 – § 23.855(c)(3) – It was found the front baggage compartment did not comply with the criteria for Cargo and Baggage Compartment Fire Protection due to false annunciations caused by humidity condensing into fog following extended cold soak flights. The ELOS was granted subject to the lining panels and doors being self-extinguishing, and a prohibition on certain flammable materials, batteries, and devices containing batteries. Meanwhile Cessna developed an alternative solution by certifying the smoke detector from the Model 525C. Therefore, as noted on the TCDS, no 525B aircraft have the configuration which requires the ELOS.

Model 525C:

ELOS No. ACE-08-01: 14 CFR § 23.1555(d)(1) Useable Fuel Capacity Marking – In lieu of the useable fuel capacity being marked at the fuel quantity indicator, the FAA accepted a direct reading of fuel quantity available, a low-level indicator and crew alert, plus fuel flow display.

ELOS No. ACE-08-03A: 14 CFR § 23.841(b)(6) Cabin Pressurization — High Altitude Takeoff and Landing Operation – The same as was previously granted to the 525B.

ELOS No. ACE-08-04: 14 CFR § 23.815(b) Cabin Aisle Width – As was granted for the Model 525B a reduced aisle width was allowed based on a successful evacuation test.

ELOS No. ACE-08-07: 14 CFR § 23.853(d)(2) No Smoking Placard Lettering Size – As was granted for the Model 525B the FAA accepted conspicuous “No Smoking” signs without any dimensional requirements, similar to the equivalent Transport Category provisions of FAR 25.

ELOS No. ACE-08-08: 14 CFR § 23.807(e) Emergency Exit Water Barrier – This was required because the main exit on the 525C would be partly under the waterline in a ditching situation. The FAA accepted the use of a water barrier that is required for all flights and adequately briefed at the main entry door as a satisfactory second escape route to the over-wing evacuation exit.

ELOS No. ACE-09-07: 14 CFR § 23.1303(c) Compass – The non-stabilized magnetic compass was replaced with an electronic standby display utilising a remote-mounted magnetic flux detector and gyroscopic stabilisation. This was accepted on the basis availability was ensured by the use of independent sensors and a separate power supply from the standby battery pack. The residual uncompensated errors for this Direction Indicator also means a calibration placard is not required.

ELOS No. ACE-09-13: 14 CFR §§ 23.1305, 23.1549, 23.1553, Digital Displays – The Model 525C Powerplant and Fuel System Instrumentation consists of electronic displays for Fuel Flow, N₂ Indication and Fuel Quantity. Although digital-only displays have been historically considered to not provide enough trend or rate-of-change information for critical engine parameters, the FAA does allow them after careful evaluation on a case-by-case basis.

ELOS No. ACE-10-06: 14 CFR § 23.1236(b), Pitot Heat Indication System – This was granted on the same basis as was previously allowed for the Model 510. To protect the pitot heat during ground operations the aircraft utilizes a white “P/S HTR L-R” CAS message indication when the pitot heater is off or inoperative, which transitions to amber during the takeoff roll.

(iv) *Exemptions:*

Model 525/525A:

Exemption No. 5759 granted to use a relaxed “Dutch Roll” damping criteria above 18,000 feet in lieu of damping criteria of FAR §23.181(b). (The 525 showed compliance with an appropriate level of lateral-directional dynamic stability solely by aerodynamic means, allowing continued operation above FL180 if the yaw damper becomes inoperative.)

Model 525B:

Exemption No. 7981 – Granted to permit certification in the Commuter category – The CJ3 is over the 12,500 lb weight limit of FAR 23 Normal category. The Commuter Category allows up to 19,000 lb. but is restricted to propeller-driven aircraft. The 525B is a derivative of the 525A which was certificated in the Normal category and has an excellent safety record. Cessna also contended that jet-powered aircraft are simpler and more reliable than turboprops, and have a much better accident history in the business use area. The Commuter category has mostly been used for business aircraft and not regional airliners, and would result in a higher level of safety for the 525B. However the FAA did require the 525B to comply with §23.562, which would not otherwise apply.

Exemption No. 8323 – Granted to allow use of a relaxed “Dutch Roll” damping criteria above FL180 in lieu of §21.181(b) – This was the same as previously granted for earlier models. However the 525B is restricted to 30,000 feet if the yaw damper fails.

Model 525C:

Exemption No. 9495 – Granted to allow the CJ4 to meet FAR 25 Ground Load Conditions – Reduced ground loads specified under Part 25 were accepted on the basis that the 525C will be landed on paved runways by type rated pilots which will ensure a similar level of skill and experience such that it will be operated in a manner comparable to Transport Category aircraft.

Exemption No. 9593 – Permits the installation of a multi-place side-facing couch – In lieu of FAR § 23.562(a), which was developed for fore/aft facing seats, alternative testing criteria was allowed. This specified requirements for Body-to-body contact; TTI (Thoracic Trauma Index); lateral pelvic acceleration; body-to-wall/furnishing contact; and occupant retention.

Time-Limited Exemption No. 9906 – This permitted certification without a warning system indicating a failure of the pressure refuelling automatic shutoff system as specified in the rule until August 1, 2010, in lieu of 14 CFR § 23.979(b)(2). Exemption No. 9906A extends Exemption No. 9906 to February 1, 2011, and Exemption No. 9906B extends Exemption No. 9906A to May 1, 2011. In order to conduct operations after May 1, 2012, aircraft prior to S/N 525C-0025 that do not have a warning system indicating the failure of the pressure refuelling automatic shutoff system must comply with Service Bulletin SB525C-28-01.

Exemption No. 9920 – Allows for a reduced level of dynamic lateral-directional stability after a yaw damper failure – Similar to previous exemptions for earlier CJ models this permitted relaxed “Dutch Roll” damping requirements at high altitude and high speed with a yaw damper failure on the basis the aircraft is controllable and can safely transition to a flight regime where damping is compliant. It must be damped to 1/10 amplitude in 7 cycles at or below FL180, and to 1/10 amplitude in 13 cycles above FL180. For the Model 525C the yaw damper must be engaged for all flight phases. Dispatch is prohibited with the yaw damper inoperative, and the aircraft must descend to FL250 after an in-flight failure.

Exemption No. 9534 to permit certification in the commuter category, in lieu of 14 CFR § 23.3(d). This was similar to the previous exemption for the Model 525B.

Time-Limited Exemption No. 9997 – This allowed type certification with the current engine low pressure rotary group shaft speed (N_1) and interstage turbine temperature (ITT) displays until April 30, 2011, in lieu of 14 CFR § 23.1549(a), (b), and (c). In order to conduct operations after April 30, 2012, aircraft prior to S/N 525C-0025 must comply with Service Bulletin SB525C-34-02.

Time-Limited Exemption No. 9998 – This allowed type certification with the current engine oil pressure and temperature displays until April 30, 2011, in lieu of 14 CFR § 23.1321(b), 23.1549(a), (b), and (c). In order to conduct operations after April 30, 2012, aircraft prior to S/N 525C-0025 must comply with Service Bulletin SB525C-34-02.

(v) *Airworthiness Limitations:*

See Chapter 4 of the Maintenance Manual

(3) Aircraft Noise and Engine Emission Standards:

(i) *Environmental Standard:*

The Model 525 has been certificated under FAR Part 34 (CJ/CJ1 original Issue, CJ1+ Amendment 3, M2 Amendment 5), and FAR Part 36, including Amendments 36-1 through 36-18 (CJ/CJ1), and Amendments 36-1 through 36-28 (CJ1+/M2).

The Model 525A has been certificated under FAR Part 34, including Amendments 34-1 through 34-3, and FAR Part 36, including Amendments 36-1 through 36-22 (CJ2), and Amendments 36-1 through 36-28 (CJ2+).

The Model 525B has been certificated under FAR Part 34, including Amendments 34-1 through 34-3, and FAR Part 36, including Amendments 36-1 through 36-28.

The Model 525C has been certificated under FAR Part 34, including Amendments 34-1 through 34-4, and FAR Part 36, including Amendments 36-1 through 36-28.

(ii) *Compliance Listing:*

Cessna Dynamics Report D-525-31 – Model 525 FAR 36 Noise Test Results

525 MCTOW 10,400 lb Flaps 15, Thrust Cutback, MLW 9,700 lb Flaps 35:

Sideline: 83.6 EPNLdB Takeoff: 73.4 EPNLdB Approach: 89.5 EPNLdB

525 (CJ1) MCTOW 10,600 lb Flaps 15, Thrust Cutback, MLW 9,800 lb Flaps 35:

Sideline: 83.6 EPNLdB Takeoff: 73.6 EPNLdB Approach: 89.7 EPNLdB

525 (CJ1+) MCTOW 10,700 lb Flaps 15, Thrust Cutback, MLW 9,900 lb Flaps 35:

Lateral: 85.2 EPNLdB Flyover: 73.5 EPNLdB Approach: 88.5 EPNLdB

Cessna Dynamics Report D-525B-231 – Model 525A FAR 36 Test Results

525A at MCTOW 12,375 lb Flaps 15, Thrust Cutback, MLW 11,500 lb Flaps 35:

Sideline: 88.8 EPNLdB Takeoff: 74.5 EPNLdB Approach: 91.4 EPNLdB

525A “CJ2+” MCTOW 12,500 lb Flaps 15, Thrust Cut, MLW 11,525 lb Flaps 35:

Lateral: 86.1 EPNLdB Flyover: 75.5 EPNLdB Approach: 89.7 EPNLdB

Cessna Dynamics Report D-525B-231 – Model 525B FAR 36 Test Results

525B at MCTOW 13,870 lb Flaps 15, Thrust Cutback, MLW 12,750 lb Flaps 35:

Sideline: 88.8 EPNLdB Takeoff: 74.0 EPNLdB Approach: 88.6 EPNLdB

Cessna Dynamics Report D-525C-231 – Model 525C FAR 36 Test Results

525C at MCTOW 17,100 lb Flaps 15, Thrust Cutback, MLW 15,660 lb Flaps 35:

Lateral: 92.8 EPNLdB Flyover: 75.6 EPNLdB Approach: 89.5 EPNLdB

(4) Certification compliance listing:

Cessna Report 525-92-066 – Model 525 Master Compliance Checklist

Document No: PR-525-007/V1 – Model 525 Restart Project Specific Certification Plan – Volume 1 – FAA Project Number: CESSNA-071190

Document No: PR-525-008 – Master Compliance Checklist – Model 525 Restart – Model No: 525 S/N 0685 and 0800 and On

Cessna Report 525A-98-003/A1 – Model 525A Master Compliance Checklist

Cessna Report PR-525A-010 Model No: 525A – Project Specific Certification Plan

Cessna Report No. AW-525B-001 – Model 525B Master Compliance Checklist

Document No: PR-525B-005/V1 – Model No: 525B – Project Specific Certification Plan Volume 1 – FAA Project Number: CESSNA-072642 (Model 525 BPC)

Cessna Document No: PR-525C-002 Summary Report Volume 1 – Contains copies of all Exemptions, ELOS and Special Conditions, including FAA Issue Papers.

Cessna Document No: PR-525C-002 Summary Report Volume 2 – Master Compliance Checklist – FAA

(5) Flight manual: FAA-Approved Airplane Flight Manual Cessna CitationJet (Serial 525-0001 thru -0359) – Pub. 525FM – CAA Accepted as AIR 3382

FAA-Approved Airplane Flight Manual Cessna Citation CJ1 (Serial 525-0360 thru -0599) – Pub. 525FMA – CAA Accepted as AIR 2804

FAA-Approved Airplane Flight Manual Cessna Citation CJ1+ (Serial 525-0600 thru -0799) – Pub. 525FMB – CAA Accepted as AIR 3383

FAA-Approved Airplane Flight Manual Cessna Citation M2 Model 525 (Serial 525-0685 and 525-0800 and on) – Publication 525FMC – CAA Accepted as AIR 3384

FAA-Approved Airplane Flight Manual Cessna Citation CJ2 (Serial 525A-0001 thru -0299) Pub. 525AFM – CAA Accepted as AIR 3385

FAA-Approved Airplane Flight Manual Cessna Citation CJ2+ Model 525A (Serial 525A-0300 and on) – Publication 525AFMA – CAA Accepted as AIR 3386

FAA-Approved Airplane Flight Manual Cessna Citation CJ3 Model 525B – Publication 525BFM – CAA Accepted as AIR 2910

FAA-Approved Airplane Flight Manual Cessna Citation CJ3+ Model 525B – Publication 525BFMA – CAA Accepted as AIR 3381

FAA-Approved Airplane Flight Manual Cessna Citation CJ4 Model 525C – Publication 525CFM – CAA Accepted as AIR 3226

(6) Operating Data for Aircraft:

(i) *Maintenance Manual:*

Publication 525MM – Model 525 Maintenance Manual

Publication 525MMC – Model 525 Maintenance Manual (s/n 0685, 0800 and on)

Publication 525WD – Model 525 Wiring Diagram Manual (s/n 0001-0599)

Publication 525WDB – Model 525 Wiring Diagram Manual (s/n 0600-0799)

Publication 525WDC – Model 525 Wiring Diagram Manual (s/n 0800 and on)

Publication 525SR – CJ-Series/M2 Structural Repair Manual

Publication 525CM – CJ-Series/M2 Component Maintenance Manual

Publication 525ND – CJ-Series/M2 Nondestructive Testing Manual

Publication 525AMM – Model 525A Maintenance Manual

Publication 525AICA – Model 525A Instructions for Continued Airworthiness

Publication 525AWD – Model 525A Wiring Diagram Manual (s/n 0001-0299)

Publication 525AWDB – Model 525A Wiring Diagram Manual (s/n -0300 and on)

Publication 525ACM – Model 525A Component Maintenance Manual

Publication 525ASR – Model 525A/B Series Structural Repair Manual

Publication 525AND – Model 525A/B Series Nondestructive Testing Manual

Publication 525ATE – Model 525A/B Illustrated Tool and Equipment Manual

Publication 525BMM – Model 525B Maintenance Manual

Publication 525BICA – Model 525B Instructions for Continued Airworthiness

Publication 525BWD – Model 525B Wiring Diagram Manual (s/n 001-134)

Publication 525BWDA – Model 525B Wiring Diagram Manual (s/n 135 and on)

Publication 525BCM – Model 525B Component Maintenance Manual

Publication 525CMM – Model 525C Maintenance Manual
Publication 525CICA – Model 525C Instructions for Continued Airworthiness
Publication 525CWD – Model 525C Wiring Diagram Manual
Publication 525CCM – Model 525C Component Maintenance Manual
Publication 525CSR – Model 525C Structural Repair Manual
Publication 525CTE – Model 525C Illustrated Tool and Equipment Manual
Publication 525CND – Model 525C Nondestructive Testing Manual

(ii) *Current service Information:*

525/A/B/C Citation Service Bulletins
525/A/B/C Citation Service Letters

(iii) *Illustrated Parts Catalogue:*

Publication 525PC – Model 525 IPC (-0001 thru -0684 & -0686 thru -0799)
Publication 525PCC – Model 525 IPC (serial no. -0685, -0800 and On)
Publication 525APC – Model 525A Illustrated Parts Catalog
Publication 525BPC – Model 525B Illustrated Parts Catalog
Publication 525CPC – Model 525C Illustrated Parts Catalog

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

CAA 2171 form from Cessna Manager of Airworthiness dated 16 August 2002
CAA 2171 from Cessna Manager – Airworthiness Engineering dated May 14, 2012

NOTE: All Cessna publications are now available directly to the CAA through the Textron “1View” website at <https://ww2.txtav.com> or for manuals for some older models at <http://techpubs.cessna.com/>

(8) Other information:

Cessna Report 525-92-049 – Model 525 Electrical Power System Load Analysis
Publication 525OMA – Model 525 Citationjet (s/n 360 and on) Operating Manual
Publication 525BOM – Model 525B CJ3 Operating Manual

Citation CJ1 – Optional Equipment Selection Guide (2002 deliveries) – March 2001
Citation CJ1 – Specification and Description (Units 525-0476 to TBD) – Jan 2001

Report No: AES-525-200 – Model 525 Electrical System Load Analysis
Report No. EL-525A-203 – Electrical Power Systems Load Analysis S/N 300 & On

Cessna Drawing No. 6300303 – Model 525B Three View & General Arrangement

Report No. EL-525B-200 – Model 525B Electrical Power Systems Load Analysis
Model No: 525B BPC (CJ3+) (S/N 525B-00451 & On, 525B-000057)

CJ3 – Specification & Description (Units 0001 to TBD) – Preliminary August 2003
CJ3 – Optional Equipment Selection Guide – For Aircraft to be delivered in 2005
Aircraft Order (079027) – CJ3 s/n 000027 Temporary Registration N5188W

Citation CJ4 Specification and Description (Units 525C-0070 to TBD) – Dec 2011

Cessna Avionics Certification Report No: AES-525C-100 – Model No: 525C:
Elect Systems and Power Generation and Distribution Compliance Report

Cessna Report No: AES-525C-102 – Model No: 525C:
Elect Systems Equipment Qualification Report

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.

CAR 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 for the Cessna Model 525 CJ Series, unless otherwise noted, and were found to be covered by either the original certification requirements or the basic build standard of the aircraft, except as highlighted:

CAR Part 91 – Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
91.505	Shoulder Harness if Aerobatic; >10 pax; Flight Training	* Shoulder harness for crew seats required for all operations
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	FAR §23.1303(a) – PFD * PFD * FAR §23.1303(b) – PFD * FAR §23.1303(c) – * ** FAR §23.1305(a) – Fuel Quantity System * FAR §23.1305(d)(e) – MFD * FAR §23.1305(b) – MFD *
		(8) Coolant Temp (9) Oil Temperature (10) Manifold Pressure (11) Cylinder Head Temp. (12) Flap Position (13) U/c Position (14) Ammeter/Voltmeter
		N/A – Turbojet FAR §23.1305(c) – MFD * N/A – Turbojet FAR §23.699(a)(2) – Std Fit * FAR §23.729(e) – Std Fit * FAR §23.1351(d) – Ammeter and DC Voltmeter std eqpt *
		** The Model 525C does not have a traditional magnetic compass, but uses an electronic standby Direction Indicator without a calibration placard. This was accepted by the FAA under an Equivalent Level of Safety finding.
91.511 Night	(1) Turn and Slip (2) Position Lights	Included in PFD presentation FAR §23.1385 *
		(3) Anti-collision Lights (4) Instrument Lighting
91.517 IFR	(1) Gyroscopic AH (2) Gyroscopic DI (3) Gyro Power Supply (4) Sensitive Altimeter	PFD Required standard equipit * PFD Required standard equipit * FAR §23.1331(a)(3) – EFIS Required for all Operations *
		(5) OAT (6) Time in hr/min/sec (7) ASI/Heated Pitot (8) Rate of Climb/Descent
		Included in PFD presentation Required Equipment for IFR * Required for all Operations * Included in PFD presentation
91.519	IFR Communication and Navigation Equipment	Operational requirement – Compliance as applicable Standard Proline 21 avionics package on the Model 525 includes dual audio control panels, dual VHF Comm (KY196A), dual VOR/ILS (KN53), ADF (KR87), DME (KN63) and Transponders (KT70), autoflight system , GPS (KLN900), Radio altimeter and weather radar. Model 525C uses VHF-4000, NAV-4000, DME-4000 and GPS-4000S as standard equipment.
		Model 525 is type certificated for Day and Night VFR and IFR flight into known icing conditions when suitably equipped *
91.523 Emrgcy Eqpmt.	(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	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	Artex ELT 110-4 fitted under Miscellaneous Option M165 Artex C406-N ELT is fitted as standard on the Model 525C
91.531	Oxygen Indicators - Volume/Pressure/Delivery	FAR §25.1441 and FAR §25.1443
91.535 Press. A/c	(1) Flight Crew Member On-Demand Mask; 15 min PBE (2) 1 Set of Portable 15 min PBE (3) Crew Member – Pax Oxygen Mask; Portable PBE 120l (4) Spare Oxygen Masks/PBE (5) Min Quantity Supplement Oxygen (6) Required Supplemental/Therapeutic Oxygen Above FL250 – Quick-Donning Crew On-Demand Mask – Supplemental O ₂ Masks for all Pax/Crew – Supplemental Mask in Washroom/Toilet Above FL300 – Total Outlets Exceed Pax by 10% – Extra Units Uniformly Distributed – Automatically Presented Above FL140 – Manual Means of Deploying Pax Masks	Crew oxygen masks fitted as std – See Operating Manual EROS 15-40F PBE to be fitted to s/n 0511 Not Applicable – No additional crew members Standard 22 cu.ft. bottle provides 25 minutes supply for 6 (optional 50 cu.ft. [std on CJ3] provides 60 min supply for 6) Crew masks are quick-donning type; Passenger masks are continuous flow type; One oxygen mask is provided in the lavatory; AFM requires one mask for each occupied pax seat Masks are deployed if cabin altitude exceeds 13,500 ± 600 ft There is a manual option on the Oxygen Control Valve In the CJ3 the masks only deploy at CPA 14,500 ± 500 ft. An Exemption against the Rules was granted under 5/EXE/107 Similar exemption was granted to the CJ4 under 13/EXE/8

91.541	SSR Transponder and Altitude Reporting Equipment	Operational requirement – Compliance as applicable (s/n 0511 is equipped with dual Garmin GTX 330D Tx.) TDR-94D Transponder standard equipment on the 525C
	RVSM	Avionics Options A022 (Third EFIS display) or A107 (AM-250 Altimeter) provides second air data computer for compliance with RVSM certification for CJ1. (See FM Supp.1, and SB525-34-40) Model 525C is certificated as eligible for operation in RVSM airspace
	BRNAV	Option A107 also adds BRNAV-Compliant KLN-900 GPS unit which is coupled to the EFIS and features 8-channel IFR enroute, terminal and non-precision approach capabilities. (See SL525-34-07)
	RNP	With the FMS-3000 Flight Management System with WAAS (Dual installation) the Model 525C has been shown to meet the requirements for GPS primary means navigation in remote and oceanic airspace (per AC20-138A); North Atlantic MNPS; RNP-4 and RNP-10; and with Single FMS installation: P-RNAV/B-RNAV. (See 525CFM-S1-00)
91.543	Altitude Alerting Device – Turbojet or Turbofan	Standard function on the Collins Proline 21 System
91.545	Assigned Altitude Indicator	Not Applicable – see above
A.15	ELT Installation Requirements	To be determined on an individual aircraft basis

Civil Aviation Rules Part 135 (Model 525 CJ1)

Subpart F - Instrument and Equipment Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
135.355	Seating and Restraints – Shoulder harness 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
135.361	IFR Operations	Speed, Alt, spare bulbs/fuses
135.363	Emergency Equipment (Part 91.523 (a) and (b))	Operational requirement – Compliance as applicable
135.367	Cockpit Voice Recorder	Not Applicable – Only helicopters with more than 10 pax (A200S CVR available fit under Option A065) Required equipment for two pilots with six pax seats installed *
135.369	Flight Data Recorder	Not Applicable – Less than 10 passenger seats
135.371	Additional Attitude Indicator	Standby Attitude Indicator required equipment for all operations * (All Model 525 have a third independent attitude source with a dedicated battery power supply.)

Civil Aviation Rules Part 125 (Models 525B/C CJ3/4)

Subpart F - Instrument and Equipment Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
125.355	Seating and Restraints	§FAR 23.785 (Required under §23.562)
125.357	Additional Instruments (Powerplant and Propeller)	Certificated to FAR Part 23, including §23.1305
125.359	Night Flight	Landing light, Pax compartment
125.361	IFR Operations	Speed, Alt, spare bulbs/fuses
125.361	SE IFR Requirements – If Applicable	Not Applicable – twin-engined aircraft
125.363	Emergency Equipment (Part 91.523 (a) and (b))	Operational requirement – Compliance as applicable
125.365	Public Address and Crew Member Intercom System	Not Applicable – Less than 10 passenger seats
125.367	Cockpit Voice Recorder (TSO C84 or TSO C123, with TSO C121 ULD)	Required for two-pilot operations – (Available under Production Option Number 634K) L3 FA2100 Cockpit Voice Recorder standard on the 525C
125.369	Flight Data Recorder (TSO C124 – See Appendix B4)	Not Applicable – Less than 10 passenger seats (JAA FDR available under Production Option Number 634D) L3 88-parameter FDR available as an option for the 525C
125.371	Additional Attitude Indicator	Goodrich GH-3000 Electronic Standby Instrument System fitted as standard . L3 ESIS fitted as standard on the 525C
125.373	Weather Radar (TSO C63)	Collins WXR-800 X-band colour radar fitted as standard RTA-4112 Multi-scan weather radar new for Model 525C
125.375	Ground Proximity Warning System (TSO C92)	See under TAWS
125.377	HUMS	Not Applicable – twin-engined aircraft
125.379	Terrain Awareness and Warning System (TSO C151a/b)	Landmark TAWS 8000 (Class B) system fitted as standard Honeywell Mk.VIII EGPWS fitted as standard on the 525C
125.381	Airborne Collision Avoidance System (TSO C118 or 119a)	Goodrich Skywatch HP TCAS I system fitted as standard TSS-4100 Traffic Surveillance System (TCAS II 7.1) standard fit for the 525C

* See the “Kinds of Operations Equipment List” in Section II of the Flight Manual

- 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:

- Photographs first-of-type example CJ1 s/n 525-0511 ZK-TBM
- Three-view drawing Cessna Model 525 CJ1
- Cessna Drawing No.6300303 Three View & General Arrangement 525B
- Three-view drawing Cessna Model 525C CJ4
- Copy of FAA Type Certificate/ Type Certificate Data Sheet A1WI

Sign off

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David Gill
Team Leader Airworthiness

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Checked – Kavita van Mari
Airworthiness Engineer

Appendix 1

List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
525 “CJ1”	Cessna Aircraft Company	3/21B/5	28 February 2003
525B “CJ3”	Cessna Aircraft Company	5/21B/18	27 May 2005
525C “CJ4”	Cessna Aircraft Company	12/21B/23	9 October 2012
525 “M2”	Textron Aviation Inc.	17/21B/23	15 August 2017
525A “CJ2/CJ2+”	Textron Aviation Inc.	17/21B/23	15 August 2017
525B “CJ3+”	Textron Aviation Inc.	17/21B/23	15 August 2017