TYPE-CERTIFICATE

DATA SHEET

NO. EASA.IM.A.502

for
Cessna 510 (Mustang)

Type Certificate Holder:
Textron Aviation Inc.

One Cessna Boulevard
Wichita, Kansas 67215
USA

For models: 510

CONTENT

SECTION A: 510

A.I. General

Data Sheet No.: EASA IM.A.502		Issue 1
1.	a) Model:	510
	b) Variant:	N/A
2.	Airworthiness Category:	14 CFR 23 Normal Category
3.	Type Certificate Holder:	Textron Aviation Inc P.O. Box 7704 Wichita, Kansas 67277 USA
4.	Manufacturer:	Textron Aviation Inc. P.O. Box 7704 Wichita, Kansas 67277 USA
5.	EASA Certification Application Date:	9 September 2003 for 510-0001 and On
6.	FAA Type Certification Date:	8 September 2006 for 510-0001 and On
7.	EASA Type Certification Date:	21 May 2007

A.II. EASA Certification Basis

1.	Reference Date for determining the Applicable requirements:	9 September 2003 for 510-0001 and On
2.	(reserved)	
3.	(reserved)	
4.	Certification Basis:	FAR 23 Certification Basis in TCDS A00014WI, *PLUS:*

5. Special Conditions:

CRI B-01	Human Factors	NPA 15/2004, §1302
CRI F-02	High Intensity Radiated Fields	CS 23.1301, .1309
CRI F-05	Aeroplane System Wiring	CS 23.1309, .1529
CRI F-06	Solid State Power Controllers	CS 23.1357
CRI F-07	Battery Endurance Requirement	CS 23.1353
CRI F-08	Thickness of Bonded Fuel Tank Skins, Lightning Protection	CS 23.867

6. Exemptions: N/A

7. Equivalent Level of Safety Findings:

CRI F-10	External LED Navigation and Anti-Collision Lights	CS 23.1385

8. (reserved)

EASA Environmental Standards:

EASA Certification Specification34, "Aircraft Engine Emissions and Fuel Venting", EASA Decision 2003/03/RM.

EASA Certification Specification 36, "Aircraft Noise", EASA Decision 2003/04/RM.

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Specified in EASA CRI A-06; Cessna Airplane Assembly Drawing Number 7000000-1, Document No. A00014WI, latest FAA approved revision.

2. Description: Low wing aircraft with retractable tricycle landing gear, T-tail, pressurized cabin, and two turbofan engines pylon mounted on the rear fuselage.

3. Equipment: Equipment List according to AFM, 510FM-00 or later approved revision
(See Note 2)

4. Dimensions:

Span	13.16 m (43 ft. 2 in.)
Length	12.37 m (40 ft. 7 in.)
Height	4.09 m (13 ft. 5 in.)
Wing Area	19.51 sq.m (210 sq. ft.)

5. Engines: Two Pratt & Whitney Canada PW615F-A turbofans (TCDS EASA.IM.E.025)

Engine Limits: Static thrust standard day, sea level:
Takeoff*: 662 kg (1,460 lbs)

* Other engine limitations: refer to the engine TC

6. (reserved)

7. (reserved)

8. Fluids

8.1 Fuel: Commercial kerosene Jet A, Jet A-1, or JP-8. (See Note 1)

8.2. Oil: Aero Shell Turbine Oil 500 (Type II Standard) or Aero Shell Turbine Oil 560 (Type II HTS; MIL-PRF-23699F)

BP Turbo Oil 2380 (Type II Standard) or
BP Turbo Oil 2197 (Type II HTS; MIL-PRF-23699F)

Castrol 5000

Mobil Jet Oil Type II (Type II Standard) or
Mobil Jet Oil 254 (Type II HTS; MIL-PRF-23699F)

Royco Turbine Oil 500 (Type II Standard) or
Royco Turbine Oil 560 (Type II HTS; MIL-PRF-23699F)

TurboNycoil TN 600

8.3. Coolant: Not applicable.

9. Fluid capacities:

9.1 Fuel: Total usable: 2568 lbs. (383.3 gal./1450.95 litres). Two wing tanks with 1284 lbs. (191.6 gal/725.28 litres) usable each (See Note 1 for unusable fuel)

9.2 Oil: 4.85 liters usable each engine (See Note 1)

10. Airplane Limit Speeds (KCAS)

Maximum Operating	V_{MO}: Sea Level to 27,120 feet	250
	M_{MO}: above 27,120 feet	0.63
Maneuvering	V_A	182
	* See AFM for variations with weight and altitude	
Flaps Extended	V_{FE}	185 (Flaps 15°) 150 (Flaps 30°)
Landing Gear Operating	V_{LO}	250 (Extending) 185 (Retracting)
Landing Gear Extended	V_{LE}	250
Minimum Control Air	V_{MCA}	92 (Flaps 0°) 81 (Flaps 15°)

11. Maximum Operating Altitude — 12,497 m (41,000 ft.)

12. Operational Capacity: — VFR Day and Night
IFR Day and Night
RVSM (See Note 6)
Flight into Known Icing (See Limitations Section of EASA Approved Airplane Flight Manual)

13 Maximum Certified Weights in kg (lbs)

Aircraft Serial Number	Max. Zero Fuel Weight	Max. Ramp Weight	Max. Take-Off Weight	Max. Landing Weight
525-0001 and on	1728 kg (6750 lbs)	3960 kg (8730 lbs)	3921 kg (8645 lbs)	3629 kg (8000 lbs)

14. Center of Gravity Range (Gear Extended)*

Forward Limits: Linear variation from 287.04 in. aft of datum (21.32% MAC) at 8730 lb. to 285.59 in. aft of datum (19.00 % MAC) at 6927 lb.; 285.59 in. aft of datum (19.00 % MAC) at 6927 lb. or less.

Aft Limits: 292.46 in. aft of datum (30% MAC) at 8730 lb. or less

Landing Gear retracting moment (-1302.87) in-lb.

* Straight line variation between given points

15. Datum — 143.7 in. forward of the jig point (nose jack pad location)

16. (Reserved)

17. Levelling means — Longitudinal – In board crew seat rails at FS 196.00.
Lateral - In board crew seat rails at FS 196.00.

18. Minimum Flight Crew — (See Note 5 for cockpit equipment/arrangement restrictions):

One pilot (in the left pilot seat) plus additional equipment as specified in the Kinds of Operations Equipment List (KOEL) contained in the Limitations Section of the FAA Approved Airplane Flight Manual
OR
One pilot and one copilot

19. Maximum Passenger Seating Capacity: — 6 Passengers (two crew plus four passenger seats)

20. (Reserved)

21. Baggage / Cargo Compartment

Nose Compartment	145 kg (320 lbs)
Tailcone	136 kg (300 lbs)

22. Wheels and Tires

Main Landing Gear (MLG)	22 x 6.75-10 (Dunlop DR25526T)
Main Landing Gear (MLG)	22 x 6.75-10 (Michelin 021-523-0)
Nose Landing Gear (NLG)	16 x 4.4 (Dunlop DR17026T)
Nose Landing Gear (NLG)	16 x 4.4 (Michelin 079-606-0)

A.IV. Operation and Service Instructions

Airplane Flight Manual (AFM)	Airplanes must be operated according to the EASA Approved Airplane Flight Manual, part number 510FM-00 (or later approved revision).
Airplane Maintenance Manual	Model 510 Maintenance Manual, 510MM00 or later approved revision. See Chapter 4, "Airworthiness Limitations" for inspections, mandatory retirement life information and other requirements for continued airworthiness. "Airworthiness Limitations" may not be changed without the approval of EASA.

A.V. Operational Suitability Data

OSD FC	OSD FC Original Issue or later approved Revision
MMEL	MMEL 510MMELEU, Initial Issue or later Approved Revision

V. Notes

NOTE 1: Current weight and balance information, including list of equipment included in certificated empty weight, and loading instructions are provided for each airplane in the EASA Approved Airplane Flight Manual (AFM) at the time of original certification.

The certificated empty weight and corresponding center of gravity location must include:

Unusable fuel	53.40 lbs at +290.56 in
Full oil	20.2 lbs at +363.11 in
Hydraulic Fluid	10.23 lbs at +192.45 in

NOTE 2: Airplanes must be operated according to the EASA Approved Airplane Flight Manual (AFM), part number 510FM-00. Required placards and markings are listed in Chapter Eleven (11) of Maintenance Manual, part number 510MM00.

NOTE 3: See Maintenance Manual, Chapter Four (4), “Airworthiness Limitations” for inspections, mandatory retirement life information, and other requirements for continued airworthiness.

NOTE 4: All replacement seats (crew and passenger), although they may comply with TSO C127, must also be demonstrated to comply with installation requirements into the aircraft listed in 14 CFR §§23.2, 23.561, 23.562, and 23.785.

The foam cushion buildup of all seats (crew and passenger) may not be altered. Any deviations in the foam construction or stiffness must be demonstrated by test to comply with the 14 CFR 23.562 paragraph.

NOTE 5: Approval for operation with a minimum crew of one pilot is based upon the cockpit equipment installation and arrangement evaluated during FAA certification testing. No significant changes may be made to the installed cockpit equipment or arrangement (EFIS, autopilot, avionics, etc.), except as permitted by the approved MMEL, without prior approval from the responsible Aircraft Certification Office.

NOTE 6: S/N 510-001 and On: All airplanes are equipped with Garmin G1000 dual RVSM capable Air Data Computers and pilot’s and o-pilot’s Primary Flight Displays as standard equipment.

Each operator must obtain RVSM operating approval in accordance with applicable operating rules.

NOTE 7: The model 510 is approved for One Engine Inoperative 10 minutes thrust capability with the Pratt & Whitney Canada PW615F-A turbofan engine, per FAA Policy Memo “Project Specific Policy on Approval for 10-Minute Rated Takeoff Thrust during Takeoff with One-Engine Inoperative (OEI) under 14 CFR Part 23 and 14 CFR Part 33 for Cessna model 510 Airplane with PW615F-A Engines”, dated August 15, 2006, from Standards Office, Small Airplane Directorate and Standards Office, Engine and Propeller Directorate.

NOTE 8: The System Safety Assessment process has identified mandatory maintenance actions, which must be performed at specific intervals to compensate for latent failures. A list of those actions is contained in report RL-510-176, and cannot be changed without participation from the certificating ACO. This document has influenced certain maintenance actions documented in Airworthiness Limitations section (Chapter 4) of the maintenance manual. Those particular items cannot be changed without participation from the certificating ACO.

ADMINISTRATIVE SECTION

I. Acronyms

A.C. – Advisory Circular
A.D. – Airworthiness Directives
AFM – Airplane Flight Manual
C.G. – Centre of Gravity
CFR – Code of Federal Regulations
CRI – Certification Review Items
CS – Certification Specifications
EASA – European Aviation Safety Agency
EFIS – Electronic Flight Information System
EU – European Union
F.S. – Frame Status
FAA – Federal Aviation Administration
FADEC – Full Authority Digital Engine Control
FC – Flight Crew
FT – Feet
GAL – Gallons
ICAO – International Civil Aviation Organization
IFR – Instrument Flight Rules
KCAS – Knots Calibrated Air Speed
KG – Kilo Grams
KIAS – Knots Indicated Air Speed
LBS – Pounds
L.E. – Leading Edge
MAC – Mean Aerodynamic Chord
MIL – Military Standard
MMEL – Master Minimum Equipment List
N.A.A. – National Aviation Authority
OSD – Operational Suitability Data
RVSM – Reduced Vertical Separation Minimum
S.B. – Service Bulletin
T.O. – Take Off
TC – Type Certificate
TCDS – Type Certificate Data Sheet
TCDSN – Type Certificate Data Sheet – Noise.
TSO – Technical Standards Order
VFR – Visual Flight Rules

II. Type Certificate Holder Record

Since 29 July 2015:

Textron Aviation Inc.
One Cessna Boulevard
P.O. Box 7704
Wichita, Kansas 67277
USA

From 15 Oct 1992 to 28 Jul 2015:

Cessna Aircraft Company
P.O. Box 7704
Wichita, Kansas 67277
USA

III. Change Record

Issue	Date	Changes
Issue 1	21 May 2007	Initial Release
Issue 2	17 Dec 2015	TC holder transfer from Cessna Aircraft Company to Textron Aviation Inc. Corrections throughout all documents, Addition of OSD,
Issue 3	21 June 2018	Alignment of Type name