

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

T00012WI Revision 12 Textron Aviation Inc. 680 680A April 26, 2016
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**TYPE CERTIFICATE DATA SHEET NO. T00012WI**

This data sheet, which is part of Type Certificate No. T00012WI, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder                      Textron Aviation Inc.  
One Cessna Boulevard  
Wichita, Kansas 67215

Type Certificate Holder Record:        Cessna Aircraft Company transferred to  
Textron Aviation Inc. on July 29, 2015

**I. Model 680 Sovereign (Transport Category) S/N 680-0001 through 680-0500 Approved June 2, 2004;  
S/N 680-0501 and On Approved December 20, 2013**

Engines                                        **S/N 680-0001 through 680-0500**  
Two Pratt & Whitney Canada Corp. PW306C turboprops

**S/N 680-0501 and On**  
Two Pratt & Whitney Canada Corp. PW306D turboprops

Fuel    Commercial kerosene Jet A, Jet A-1, Jet B, JP-4, JP-5, JP-8, TS-1, RT and No. 3 Jet.

Engine Limits Static thrust standard day, sea level

**S/N 680-0001 through 680-0500**  
Takeoff    5,770 lb.  
Max. Continuous                                5,770 lb.

**S/N 680-0501 and on**  
Takeoff    5,907 lb.  
Max. Continuous                                5,907 lb.

Max. permissible engine rotor operating speeds (Takeoff and Maximum Continuous):

N<sub>1</sub> (fan) 105.0%                               (100% = 10,608 r.p.m.)  
N<sub>2</sub> (Gas Gen.) 105.0%                       (100% = 26,930 r.p.m.)  
Max. permissible interturbine gas temperatures:  
Takeoff    920 Degrees C  
Max. continuous                                920 Degrees C  
Transient (20 sec.) and starting            950 Degrees C

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**I. Model 680 Sovereign** (cont'd)

## Airspeed limitations (S/N 680-0001 through 680-0500)

V <sub>mo</sub> (maximum operating)	
Below 8,000 ft.	270 KIAS (270 KCAS)
8,000 ft. to 29,833 ft.	305 KIAS (305 KCAS)
M <sub>mo</sub> above 29,833 ft.	0.80 M <sub>i</sub> (0.80 MACH calibrated)
V <sub>a</sub> (maneuvering sea level)	
30,300 lb.	169 KIAS (169 KCAS)
<i>See AFM for variations with weight and altitude.</i>	
V <sub>RA</sub> (Rough air speed)	
Below 38,813 ft.	225 KIAS (225 KCAS)
Above 38,813 ft.	0.73 M <sub>i</sub> (0.73 MACH calibrated)
Flap extension speeds	
V <sub>FE</sub> (0° to 7° extension)	250 KIAS (250 KCAS)
V <sub>FE</sub> (7° to 15° extension)	200 KIAS (200 KCAS)
V <sub>FE</sub> (15° to 35° extension)	175 KIAS (174 KCAS)
V <sub>MCA</sub> (Minimum control speed) Air 7 deg flaps	92 KIAS (93 KCAS)
V <sub>MCA</sub> (Minimum control speed) Air 15 deg flaps	90 KIAS (91 KCAS)
V <sub>MCL</sub> (Minimum control speed) Landing 15 deg flaps	88 KIAS (89 KCAS)
V <sub>MCL</sub> (Minimum control speed) Landing 35 deg flaps	84 KIAS (84 KCAS)
V <sub>MCG</sub> (Minimum control speed) Ground 7 deg flaps	96 KIAS (97 KCAS)
V <sub>MCG</sub> (Minimum control speed) Ground 15 deg flaps	97 KIAS (98 KCAS)
V <sub>LO</sub> (landing gear operating)	210 KIAS (207 KCAS)
V <sub>LE</sub> (landing gear extended)	210 KIAS (207 KCAS)
V <sub>SB</sub> (speed brakes extension)	Any speed with or without flaps
Maximum autopilot operating speed	
Below 8,000 ft.	270 KIAS (270 KCAS)
8,000 to 29,833 ft.	305 KIAS (305 KCAS)
Above 29,833 ft.	0.80 M <sub>i</sub> (0.80 MACH calibrated)
Maximum tire ground speed	182 knots

## Airspeed limitations (S/N 680-0501 and on)

V <sub>mo</sub> (maximum operating)	
Below 8,000 ft.	270 KIAS (269 KCAS)
8,000 ft. to 29,833 ft.	305 KIAS (304 KCAS)
M <sub>mo</sub> above 29,833 ft.	0.80 M <sub>i</sub> (0.80 MACH calibrated)
V <sub>a</sub> (maneuvering sea level)	
30,775 lb.	193 KIAS (193 KCAS)
<i>See AFM for variations with weight and altitude.</i>	
V <sub>RA</sub> (Rough air speed)	
Below 38,813 ft.	225 KIAS (225 KCAS)
Above 38,813 ft.	0.73 M <sub>i</sub> (0.73 MACH calibrated)
Flap extension speeds	
V <sub>FE</sub> (Up (0°) to 1 (7°) extension)	250 KIAS (249 KCAS)
V <sub>FE</sub> (1 (7°) to 2 (15°) extension)	200 KIAS (200 KCAS)
V <sub>FE</sub> (2 (15°) to Full (35°) extension)	175 KIAS (175 KCAS)
V <sub>MCA</sub> (Minimum control speed) Air 7 deg flaps	88 KIAS (88 KCAS)
V <sub>MCA</sub> (Minimum control speed) Air 15 deg flaps	85 KIAS (85 KCAS)
V <sub>MCL</sub> (Minimum control speed) Landing 15 deg flaps	84 KIAS (84 KCAS)
V <sub>MCL</sub> (Minimum control speed) Landing 35 deg flaps	80 KIAS (80 KCAS)
V <sub>MCG</sub> (Minimum control speed) Ground 7 deg flaps	88 KIAS (88 KCAS)
V <sub>MCG</sub> (Minimum control speed) Ground 15 deg flaps	88 KIAS (88 KCAS)

**I. Model 680 Sovereign** (cont'd)

## Airspeed limitations (S/N 680-0501 and on) (cont'd)

V <sub>LO</sub> (landing gear operating)	210 KIAS (210 KCAS)
V <sub>LE</sub> (landing gear extended)	210 KIAS (210 KCAS)
V <sub>SB</sub> (speed brakes extension)	Any speed with or without flaps
Maximum autopilot operating speed	
Below 8,000 ft.	270 KIAS (269 KCAS)
8,000 to 29,833 ft.	305 KIAS (304 KCAS)
Above 29,833 ft.	0.80 M <sub>I</sub> (0.80 MACH calibrated)
Maximum tire ground speed	182 knots

## C.G. Range (Landing Gear Extended) Design C.G. Limits (S/N 680-0001 through 680-0500):

Forward:	18.00% MAC at 19,702 lbs. to 23,700 lbs. Linear variation from 18.00% MAC at 23,700 lbs. to 21.43% MAC at 30,550 lbs Takeoff Forward 21.30% at 30,300 lbs.
Aft:	31.00% MAC at 18,345 lbs. to 23,000 lbs. 30.00% MAC at 26,000 lbs. to 27,100 lbs. 31.00% MAC at 28,500 lbs. to 30,550 lbs. With straight line variation between points.
	Landing Gear retracting moment -8,095 in-lb.

## C.G. Range (Landing Gear Extended) Design C.G. Limits (S/N 680-0501 and on):

Forward:	18.00% MAC at 19,702 lbs. to 23,700 lbs. Linear variation from 18.00% MAC at 23,700 lbs. to 21.67% MAC at 31,025 lbs. Takeoff Forward 21.54% at 30,775 lbs.
Aft:	31.00% MAC at 18,345 lbs. to 23,475 lbs. 30.00% MAC at 26,475 lbs. to 27,575 lbs. 31.00% MAC at 28,975 lbs. to 31,025 lbs. With straight line variation between points.
	Landing Gear retracting moment -8,370 in-lb.

Empty Wt. C.G. Range

None

MAC

107.06 in. (L.E. of MAC at +382.68 in. aft of datum)

Maximum Weight

**S/N 680-0001 through 680-0500**

Takeoff	30,300 lb.
Landing	27,100 lb.
Zero Fuel	20,800 lb.
Ramp	30,550 lb.

Maximum Weight

**S/N 680-0501 and on**

Takeoff	30,775 lb.
Landing	27,575 lb.
Zero Fuel	21,000 lb.
Ramp	31,025 lb.

**I. Model 680 Sovereign** (cont'd)

Minimum Crew for all Flights	One pilot and one copilot			
Number of Seats	Maximum fourteen (two crew plus twelve passenger seats)			
Maximum Baggage	<b>S/N 680-0001 through 680-0500</b>			
	Aft cabin		295 lb. (+440.82 in. aft of datum)	
	Tailcone		1,000 lb. (+522.07 in. aft of datum)	
	<b>S/N 680-0501 and on</b>			
	Aft cabin		312 lb. (+441.63 in. aft of datum)	
	Tailcone		1,000 lb. (+522.09 in. aft of datum)	
Fuel Capacity (usable)	<b>S/N 680-0001 through 680-0500</b>			
	Total usable fuel 11,223 lbs. (1,675.2 gal). Two wing tanks with 5,611.5 lbs. (837.6 gal) usable each (see NOTE 1 for unusable); +412.80 in. aft of datum.			
	<b>S/N 680-0501 and on</b>			
	Total usable fuel 11,394 lbs. (1,700 gal). Two wing tanks with 5,697 lbs. (850 gal) usable each (see NOTE 1 for unusable); +413.43 in. aft of datum.			
Oil Capacity (usable)	Tank mounted on each engine: 5.28 quarts usable each engine; +534.17 in. aft of datum (see NOTE 1)			
Maximum Operating Altitude	47,000 ft.			
Control Surface Movements	Elevator	Up	16.6 +1/-0 degrees	
		Down	9.4 +1/-0 degrees	
	Elevator Trim Tab	Down	2.1 +/-0.5 degrees	
		Down	11.0 +/-0.5 degrees	
	The upper and lower elevator trim tab limits are both below the control surface neutral position.			
	Rudder	Right	30.5 +/-0.5 degrees	
		Left	30.5 +/-0.5 degrees	
	Rudder Trim Tab	Right	3.0 +/-0.5 degrees	
		Left	3.0 +/-0.5 degrees	
	Horizontal Stabilizer	Up	6.9 +/-0.5 degrees	
		Down	1.2 +/-0.5 degrees	
	Aileron Left	Up	18.8 +/-0.5 degrees	
		Down	13.4 +/-0.5 degrees	
	Aileron Right	Up	18.5 +/-0.5 degrees	
		Down	13.6 +/-0.5 degrees	
	Aileron Trim Tab	Up	10.0 +/-0.5 degrees	
		Down	10.0 +/-0.5 degrees	
	Wing Flap	Up	0 +/-0.2 degrees	
		T.O.	7 +/-0.5 degrees	
		T.O./Appr.	15 +/-1.0 degrees	
		(680-0001 through 680-0500)		
		Land	35 +2.0/-2.0 degrees	
Speed Brakes – Panels 5, 6	(680-0501 and on)			
	Land	35 +1.0/-2.0 degrees		
	Speed Brakes – Panels 5, 6		0-24.0 +/-1.0 degrees	
Speed Brakes – Panels 1, 10		0-35.0 +/-1.0 degrees		
Roll Spoilers – Panels 2, 3, 8, 90-35.0 +/-1.0 degrees				
Roll Spoilers – Panels 4, 7			0-24.0 +/-1.0 degrees	
See Airplane Maintenance Manual for rigging instructions.				
Serial Nos. Eligible	680-0001 and On			

**I. Model 680 Sovereign** (cont'd)

Datum	140.40 in. forward of the nose jack point.
Leveling Means	Longitudinal - Place level on the outboard floor panel at BL 13.00 inches, inside of the cabin door. Lateral - Place level across inboard seat tracks behind crew seats at most aft position.

**Certification Basis (S/N 680-0001 through 680-0500):**

- (1) 14 CFR Part 25 of the Federal Aviation Regulations effective February 1, 1965, as amended by amendments 25-1 through 25-98;
- (2) 14 CFR Part 34 of the Federal Aviation Regulations effective September 10, 1990, as amended by amendments 34-1 through 34-3;
- (3) 14 CFR Part 36 of the Federal Aviation Regulations effective December 1, 1969, as amended by amendment 36-1 through 36-28;
- (4) Compliance with the Noise Control Act of 1972;
- (5) Special Conditions as follows:
  - (a) No. 25-214-SC, High Intensity Radiated Fields (HIRF)
  - (b) No. 25-248-SC, Side-Facing Single-Occupant Seats
- (6) Exemption as follows:
  - (a) Exemption No. 7625A, from the general occupant protection requirements of §25.785(b) for multiple-occupancy, side-facing divans
  - (b) Exemption No. 8280, from the lateral trim requirements of 14 CFR 25.161(d) (see NOTE 11)
  - (c) Exemption No. 10089, from oxygen dispensing unit requirements of 14 CFR 25.1447(c)(1)
- (7) Equivalent level of safety as follows:
  - (a) TC2548WI-T-AG-1, Ditching Emergency Exits for Passengers
  - (b) TC2548WI-T-AG-2, Door Between Passenger Compartments
  - (c) TC2548WI-T-AG-3, Width of Aisle
  - (d) TC2548WI-T-AG-4, Exit Locator and Exit Marking Signs
  - (e) TC2548WI-T-AG-5, Placards for Main Entry Door
  - (f) TC2548WI-T-AG-6, Gust and Continuous Turbulence Loads
  - (g) TC2548WI-T-F-1, Use of 1-G Stall Speeds Instead of Minimum Speed in the Stall as a Basis for Determining Compliance
  - (h) TC2548WI-T-P-1, Digital APU Indicators (Oil Temperature, Gas Temperature, Tachometer)
  - (i) TC2548WI-T-P-2, Digital Engine Parameter, Fuel Flow
  - (j) TC2548WI-T-P-5, Use of Single Fire Suppression Bottle for Protection of APU and Baggage Compartment
  - (k) TC2548WI-T-P-6, Certification of Thrust Reversers
  - (l) TC2548WI-T-SE-5, Electric Standby Direction Indicator (Compass)
  - (m) TC2548WI-T-SG-1, Cabin Pressurization - High Altitude Takeoff and Landing Operation
  - (n) Cessna-066650-SG-5, Operation at High Altitude Airports between 14,000 ft and 15,000 ft MSL
- (8) 14 CFR § 25.801 ditching not complied with.
- (9) Compliance with ice protection has been demonstrated in accordance with 14 CFR § 25.1419.

**I. Model 680 Sovereign** (cont'd)**Certification Basis (S/N 680-0501 and on):**

- (1) 14 CFR Part 25 of the Federal Aviation Regulations effective February 1, 1965, as amended by amendments 25-1 through 25-98;

- (a) Additions (as shown in table):

Section	Title	Amendment Level	Comments
25.899	Electrical bonding and protection against static electricity	25-129	For winglet installation and all aircraft installations requiring electrical bonding and p-static protection
25.1317	High-intensity Radiated Field (HIRF) Protection	25-129	For avionics upgrade, winglet installation, upgraded interior and autothrottle
25.1323	Airspeed indicating system	25-129	For entire airplane
25.1325	Static pressure systems	25-129	For entire airplane
25.1419	Ice protection	25-129	For entire airplane. Refer to Section 9 "Additional Design Requirements" for clarification
25.1431	Electronic equipment	25-129	For winglet installation, powerplant improvements, and avionics systems
25.1459	Flight data recorders	25-129	For when the optional flight data recorder is installed
25.1001	Fuel jettisoning system	25-129	For entire airplane
Subpart B	Flight	25-115	For entire airplane
Subpart G	Operating Limitations and Information	25-115	For entire airplane (see Additional Design Requirement (9)(c))
25.773	Pilot compartment view	25-108	For entire airplane
25.1329	Flight guidance system	25-119	For autothrottle only
25.981	Fuel tank ignition prevention	25-125	For winglet installation
25.1457(a)(6)	Cockpit voice recorders	25-124	When an optional data link system is installed
25.1457(d)(5)	Cockpit voice recorders	25-124	When the optional flight data recorder is also required

- (2) 14 CFR Part 34 of the Federal Aviation Regulations effective September 10, 1990, as amended by amendments 34-1 through 34-4;
- (3) 14 CFR Part 36 of the Federal Aviation Regulations effective December 1, 1969, as amended by amendment 36-1 through 36-28;
- (4) Compliance with the Noise Control Act of 1972;
- (5) Special Conditions as follows:
- (a) No. 25-248-SC, Side-Facing Single-Occupant Seats
  - (b) No. 25-507-SC, Aircraft Electronic System Security Protection from Unauthorized Internal Access
  - (c) No. 25-508-SC, Aircraft Electronic System Security Protection from Unauthorized External Access
- (6) Exemptions as follows:
- (a) Exemption No. 7625A, from the general occupant protection requirements of §25.785(b) for multiple-occupancy, side-facing divans
  - (b) Exemption No. 10902, §25.901(c) Uncontrollable High Thrust (see Note 12)

**I. Model 680 Sovereign** (cont'd)**Certification Basis (S/N 680-0501 and on)** (cont'd):

- (7) Equivalent level of safety as follows:
- (a) TC2548WI-T-AG-1, Ditching Emergency Exits for Passengers
  - (b) TC2548WI-T-AG-2, Door between Passenger Compartments
  - (c) TC2548WI-T-AG-3, Width of Aisle
  - (d) TC2548WI-T-AG-4, Exit Locator and Exit Marking Signs
  - (e) TC2548WI-T-AG-5, Placards for Main Entry Door
  - (f) TC2548WI-T-AG-6, Gust and Continuous Turbulence Loads
  - (g) TC2548WI-T-P-6, Certification of Thrust Reversers
  - (h) TC2548WI-T-SE-5, Electric Standby Direction Indicator (Compass)
  - (i) AT5438WI-T-P-5, 14 CFR 25.901(c), 25.903(d)(2), 25.1305, 25.1309(a)(b)(c), 25.1321(c)(2), 25.1322 and 25.1549, Digital-Only Display of Turbine Engine High Pressure Rotor Speed (N2), Oil Pressure, Oil Temperature and Fuel Flow
  - (j) AT5438WI-T-P-1, 14 CFR 25.1305(a)(4)(5)(6) and 25.1549(a)(b)(c), Digital display of APU Instruments
  - (k) TC2548WI-T-P-5, 14 CFR 25.857, 25.1195 Use of Single Fire Suppression Bottle for Protection of both a Class C baggage compartment and APU installation
  - (l) TC2548WI-T-SG-1, 14 CFR 25.841(a),(b)(6) and (b)(8) Cabin Pressurization - High Altitude Takeoff and Landing Operation
  - (m) Cessna-072100-P-4, 14 CFR 25.1141(f)(2), Powerplant Valve Indication
- (8) 14 CFR § 25.801 ditching not complied with.
- (9) Additional Design Requirements:
- (a) Flight in icing conditions
 

The design complies with 14 CFR 25.21(g), 25.103, 25.105, 25.107, 25.111, 25.119, 25.121, 25.123, 25.125, 25.143, 25.207, 25.237, and 25.253 at amendment 25-129, except that compliance may be shown using ice accretions based on the atmospheric icing conditions defined in Appendix C at amendment 25-0.
  - (b) In-Flight Engine Restart
 

A minimum restart capability after an all-engines-out scenario must be established under the following conditions using procedures provided in the Airplane Flight Manual (AFM):

    - a. During the take-off and the initial climb-out portion of the flight, the airplane has the capability for the flight crew to restore engine power immediately following an all-engine-out scenario and when the fuel source to the engine is restored.
    - b. During the high altitude portion of the flight at cruise speed and maximum altitude, the airplane has the capability for the flight crew to restart engines from a stabilized windmill speed prior to descending below an altitude of 15,000 ft, by showing either or both:
      - 1) All but one engine should be restarted and accelerated to produce maximum continuous thrust/power, or
      - 2) The engine(s) should be restarted, and the necessary thrust/power achieved, to enable the airplane to maintain level flight.
    - c. During flight at speeds greater than the minimum flaps-up "holding speed" and at altitudes below 20,000 ft, the airplane has the capability for the flight crew to restart engines from a stabilized windmill speed prior to descending 5,000 ft from the initiation of the restart procedure and prior to exceeding an airspeed of 300 knots, by showing either or both:
      - 1) All but one engine should be restarted and accelerated to produce maximum continuous thrust/power, or

**I. Model 680 Sovereign** (cont'd)**Certification Basis (S/N 680-0501 and on)** (cont'd):

- 2) The engine(s) should be restarted, and the necessary thrust/power achieved, to enable the airplane to maintain level flight.

## (c) Airplane Flight Manual (AFM)

The AFM text associated with the design maneuvering speed ( $V_A$ ) meets the requirements of 14 CFR 25.1583, amendment 25-130.

- (10) 14 CFR Part 26 is not applicable.

Production Basis      Production Certificate No. 4 amended to add Model 680 effective September 1, 2004.  
See NOTE 10 for airplane serial effectivity of Production Certificate No. 4 on new airplane serials.

Equipment              The basic required equipment as prescribed in the applicable airworthiness regulations  
(see Certification Basis) must be installed in the airplane for certification.

NOTE 1.                Current weight and balance information, including list of equipment included in certificated empty weight, and loading instructions are provided for each airplane at the time of original certification.

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

**S/N 680-0001 through 680-0500**

Unusable fuel	82.90 lb. at +405.86 in.
Full oil	33.50 lb. at +534.17 in.
Hydraulic Fluid	46.83 lb. at +505.53 in.

**S/N 680-0501 and on**

Unusable fuel	86.85 lb. at +410.66 in.
Full oil	33.50 lb. at +534.17 in.
Hydraulic Fluid	46.83 lb. at +505.53 in.

NOTE 2.                **S/N 680-0001 through 680-0500:** Airplanes must be operated according to the FAA Approved AFM, part number 68FM-00 (or later FAA approved revision). Required placards and markings are listed in Chapter 11 of Illustrated Parts Catalog, part number 68PC00 (or later revision).

**S/N 680-0501 and on:** Airplanes must be operated according to the FAA Approved AFM, part number 68FMA-00 (or later FAA approved revision). Required placards and markings are listed in Chapter 11 of Illustrated Parts Catalog, part number 68PC00 (or later revision).

NOTE 3.                See Maintenance Manual, Chapter 4, "Airworthiness Limitations" for inspections, mandatory retirement life information, and other requirements for continued airworthiness.

NOTE 4.                Aircraft definition for Type Certificate is Parts List 6900000, Airplane Assembly.

NOTE 5.                Certification Maintenance Requirements (CMR) are found in Maintenance Manual, Chapter 4. Engineering approval of the CMR's is documented in the Cessna System Safety Assessment reports.

NOTE 6.                Deleted.

NOTE 7.                The Model 680 has been approved for high altitude operations (altitudes above 41,000 ft) by compliance with certain Part 25 sections. To ensure the compliance is maintained, any modifications to the pressure vessel must be approved in accordance with the requirements as shown in the appropriate certification basis. To ensure pressurization compliance is not affected, this includes modifications which could result in a pressure vessel opening, either through crack-growth or antenna loss, greater than 3.98 sq. in.

**I. Model 680 Sovereign** (cont'd)

- NOTE 8. The Model 680 received a Provisional Type Certificate on December 24, 2003, that was subsequently cancelled when the Type Certificate was issued on June 2, 2004.
- NOTE 9. The Model 680 has been shown to meet the airworthiness requirements for operations in Reduced Vertical Separation Minimum (RVSM) airspace. No Service Bulletin is associated with this requirement. All serial numbers are eligible. Each operator must obtain RVSM operating approval directly from the FAA.
- NOTE 10. Production Certificate No. 4 applies to Model 680 serial numbers 680-0005 and on.
- NOTE 11. Exemption No. 8280, from the lateral trim requirements of 14 CFR 25.161(d), is only applicable to serial numbers 680-0001 thru 680-0049.
- NOTE 12. The FAA has concluded that the occurrence of any uncontrollable high-thrust failure condition, or any of the associated causal failures listed within Cessna Document (Maintenance Manual Chapter 4 Airworthiness Limitations), may endanger the safe operation of an airplane. Consequently, the FAA recommends that operators be encouraged to report any such failures in accordance with Title 14, Code of Federal Regulations 121.703(c), 125.409(c), and 135.415(c).
- NOTE 13. The following serials are manufactured under the name Cessna Aircraft Company: 680-0001 thru 680-0547.
- NOTE 14. Company name change effective 7/29/15. The following serials are manufactured under the name Textron Aviation Inc.: 680-0548 and On.

**II. Model 680A Latitude (Transport Category) S/N 680A-0001 and On Approved June 5, 2015**

Engines	Two Pratt & Whitney Canada Corp. PW306D1 turbopfans	
Fuel	Commercial kerosene Jet A, Jet A-1, Jet B, JP-4, JP-5, JP-8, TS-1, RT, and No. 3 Jet	
Engine Limits Static thrust standard day, sea level		
	Takeoff	5,907 lb.
	Max. Continuous	5,907 lb.
Max. permissible engine rotor operating speeds (Takeoff and Maximum Continuous):		
	N <sub>1</sub> (fan) 105.0%	(100% = 10,608 r.p.m.)
	N <sub>2</sub> (Gas Gen.) 105.0%	(100% = 26,930 r.p.m.)
Max. permissible interturbine gas temperatures:		
	Takeoff	920 Degrees C
	Max. continuous	920 Degrees C
	Transient (20 sec.) and starting	950 Degrees C
Airspeed limitations		
	V <sub>MO</sub> (maximum operating)	
	Below 8,000 ft.	270 KIAS (270 KCAS)
	8,000 ft. to 29,833 ft.	305 KIAS (305 KCAS)
	M <sub>MO</sub> above 29,833 ft.	0.80 M <sub>I</sub> (0.80 MACH calibrated)
	V <sub>A</sub> (maneuvering sea level)	
	30,800 lb.	191 KIAS (191 KCAS)
	<i>See AFM for variations with weight and altitude.</i>	
	V <sub>RA</sub> (Rough air speed)	
	Below 38,813 ft.	225 KIAS (225 KCAS)
	Above 38,813 ft.	0.73 M <sub>I</sub> (0.73 MACH calibrated)
	Flap extension speeds	
	V <sub>FE</sub> (Position UP to 1)	250 KIAS (250 KCAS)
	V <sub>FE</sub> (Position 1 to 2)	200 KIAS (200 KCAS)
	V <sub>FE</sub> (Position 2 to FULL)	175 KIAS (175 KCAS)

**II. Model 680A Latitude** (cont'd)

## Airspeed limitations (cont'd)

V <sub>MCA</sub> (Minimum Control Speed) Air Flaps 1	88 KIAS (88 KCAS)
V <sub>MCA</sub> (Minimum Control Speed) Air Flaps 2	83 KIAS (83 KCAS)
V <sub>MCL</sub> (Minimum Control Speed) Landing Flaps 2	83 KIAS (83 KCAS)
V <sub>MCL</sub> (Minimum Control Speed) Landing Flaps FULL	78 KIAS (78 KCAS)
V <sub>MCG</sub> (Minimum Control Speed) Ground Flaps 1	88 KIAS (88 KCAS)
V <sub>MCG</sub> (Minimum Control Speed) Ground Flaps 2	91 KIAS (91 KCAS)
V <sub>LO</sub> (Landing Gear Operating)	210 KIAS (211 KCAS)
V <sub>LE</sub> (Landing Gear Extended)	210 KIAS (211 KCAS)
V <sub>SB</sub> (Speed Brakes Extension)	Any speed with or without flaps
Maximum autopilot operating speed	
Below 8,000 ft.	270 KIAS (270 KCAS)
8,000 to 29,833 ft.	305 KIAS (305 KCAS)
Above 29,833 ft.	0.80 M <sub>I</sub> (0.80 MACH calibrated)
Maximum tire ground speed	182 knots

## C.G. Range (Landing Gear Extended) Design C.G. Limits:

Forward: 18.00% MAC at 19,700 lbs. to 23,700 lbs.  
 Linear variation from 18.00% MAC at 23,700 lbs. to 21.68% MAC  
 at 31,050 lbs.  
 Takeoff Forward 21.56% MAC at 30,800 lbs.

Aft: 31.00% MAC at 17,500 lbs. to 31,050 lbs.

Landing Gear retracting moment -7,954 in-lb.

Empty Wt. C.G.  
Range

None

MAC

107.06 in. (L.E. of MAC at +368.24 in. aft of datum)

Maximum Weight

Takeoff	30,800 lb.
Landing	27,575 lb.
Zero Fuel	21,200 lb.
Ramp	31,050 lb.

Minimum Crew for all Flights

One pilot and one copilot

Number of Seats

Maximum eleven (two crew plus nine passenger seats)

Maximum Baggage

Tailcone 1,000 lb. (+500.09 in. aft of datum)

Fuel Capacity (usable)

Total usable fuel 11,394 lbs. (1,700 gal). Two wing tanks with 5,697 lbs. (850 gal) usable each (see NOTE 1 for unusable); +399.03 in. aft of datum.

Oil Capacity (usable)

Tank mounted on each engine: 5.28 quarts usable each engine;  
+519.73 in. aft of datum (see NOTE 1)

Maximum Operating Altitude

45,000 ft.

Control Surface Movements

Elevator	Up	16.6 +1/-0 degrees
	Down	9.4 +1/-0 degrees
	Down	2.1 +0.0/-0.5 degrees
Elevator Trim Tab	Down	12.5 +/-0.5 degrees
	The upper and lower elevator trim tab limits are both below the control surface neutral position.	
Rudder	Right	30.5 +/-0.5 degrees
	Left	30.5 +/-0.5 degrees

**II. Model 680A Latitude** (cont'd)

## Control Surface Movements (cont'd)

Rudder Trim Tab	Right	3.0 +/-0.5 degrees
	Left	3.0 +/-0.5 degrees
Horizontal Stabilizer	Up	7.4 +/-0.5 degrees
	Down	1.2 +0.2/-0.0 degrees
Aileron Left	Up	18.8 +/-0.5 degrees
	Down	13.4 +/-0.5 degrees
Aileron Right	Up	18.5 +/-0.5 degrees
	Down	13.6 +/-0.5 degrees
Aileron Trim Tab	Up	10.0 +/-0.5 degrees
	Down	10.0 +/-0.5 degrees
Wing Flap	UP	0 +/-0.2 degrees
	1	7.1 +/-0.5 degrees
	2	15.1 +/-1.0 degrees
	FULL	35.1 +1.0/-2.0 degrees
Speed Brakes – Panels 5, 6		0-24 +/-1.0 degrees
Speed Brakes – Panels 1, 10		0-35 +/-1.0 degrees
Roll Spoilers – Panels 2, 3, 8, 9		0-35 +/-1.0 degrees
Roll Spoilers – Panels 4, 7		0-24 +/-1.0 degrees

See Airplane Maintenance Manual for rigging instructions.

Serial Nos. Eligible

680A-0001 and on

Datum

135.52 in. forward of the nose jack point.

Leveling Means

Longitudinal - Put the leveling bar on the center of the floorboard panel at approximately BL 0.00 inches, directly in front of the cabin entry door.  
Lateral – Put the leveling bar behind the inboard crew seat rails and flush against the rear of the seat rails.

Certification Basis:

- (1) 14 CFR Part 25 of the Federal Aviation Regulations effective February 1, 1965, as amended by amendments 25-1 through 25-98;

- (a) Additions (as shown in table):

Section	Title	Amendment Level	Comments
25.571	Damage-Tolerance and Fatigue Evaluation of Structure	25-134	Fuselage, Engine Support
25.773	Pilot compartment view	25-134	For entire airplane
25.783	Fuselage Doors	25-134	For entire airplane
25.807	Emergency exits	25-134	Fuselage
25.809	Emergency exit arrangement	25-134	Fuselage
25.810	Emergency egress assist means and escape routes	25-114	For entire airplane
25.820	Lavatory doors	25-114	For entire airplane
25.899	Electrical bonding and protection against static electricity	25-134	For entire airplane
25.903	Engines	25-134	For entire airplane
25.981	Fuel tank explosion prevention	25-125	For winglet installation
25.981(a)(d)	Fuel tank explosion prevention	25-134	Fuselage
25.1001	Fuel jettisoning system	25-134	For entire airplane
25.1316	Electrical and electronic system lightning projection	25-134	For entire airplane

**II. Model 680A Latitude** (cont'd)

Certification Basis (cont'd):

25.1317	High-intensity Radiated Fields (HIRF) Protection	25-134	For entire airplane
25.1323	Airspeed indicating system	25-129	For entire airplane
25.1325	Static pressure systems	25-129	For entire airplane
25.1329	Flight guidance system	25-119	For autothrottle only
25.1419	Ice protection	25-129	For entire airplane.
25.1431	Electronic equipment	25-129	For winglet installation, powerplant improvements, and avionics systems
25.1457(a)(6)	Cockpit voice recorders	25-124	When an optional data link system is installed
25.1459	Flight recorders	25-129	For when the optional flight data recorder is installed
Subpart B	Flight	25-129	For entire airplane
Subpart G	Operating Limitations and Information	25-115	For entire airplane.
Subpart G	Operating Limitations and Information	25-130	The AFM text associated with the design maneuvering speed ( $V_A$ ) must meet the requirements of 14 CFR 25.1583, Amendment 25-130
Appendix C	Ice Shapes	25-0	Original ice shapes can be used to show compliance, based on the atmospheric icing conditions defined at Amendment 25-0.

- (2) 14 CFR Part 34 of the Federal Aviation Regulations effective September 10, 1990, as amended by amendments 34-1 through 34-5;
- (3) 14 CFR Part 36 of the Federal Aviation Regulations effective December 1, 1969, as amended by amendment 36-1 through 36-28;
- (4) Compliance with the Noise Control Act of 1972;
- (5) Special Conditions as follows:
  - (a) No. 25-248-SC, Side-Facing Single-Occupant Seats
  - (b) No. 25-507-SC, Aircraft Electronic System Security Protection from Unauthorized Internal Access
  - (c) No. 25-508-SC, Aircraft Electronic System Security Protection from Unauthorized External Access
  - (d) No. 25-579-SC, Pilot Compartment View - Hydrophobic Coatings in Lieu of Windshield Wipers
- (6) Exemption as follows:
  - (a) Exemption No. 7625B, from the general occupant protection requirements of §25.785(b) for multiple-occupancy, side-facing divans
  - (b) Exemption No. 11350, 14 CFR 25.809(a) for view out of emergency door exits
- (7) Equivalent level of safety as follows:
  - (a) TC2548WI-T-AG-2, § 25.813(e), Door Between Passenger Compartments
  - (b) TC2548WI-T-AG-4, §§ 25.811(d)(1) and 25.812(b)(1), Exit Locator and Exit Marking Signs
  - (c) TC2548WI-T-AG-6, § 25.341(b), Gust and Continuous Turbulence Loads
  - (d) TC2548WI-T-P-6, § 25.933(a)(1)(ii), Flight Critical Thrust Reverser
  - (e) TC2548WI-T-SE-5, §§ 25.1303(a)(3) and 25.1547, Electric Standby Direction Indicator (Compass)
  - (f) AT5438WI-T-P-5, § 25.1549(a), (b), & (c); Digital-Only Display of Turbine Engine High Pressure Rotor Speed (N2), Oil Pressure, Oil Temperature, and Fuel Flow
  - (g) AT5438WI-T-P-1, § 25.1305(a)(4), (a)(5) & (a)(6) and § 25.1549(a), (b) & (c); Equivalent Level of Safety for APU Instrumentation

**II. Model 680A Latitude** (cont'd)

## Certification Basis (cont'd):

- (h) TC2548WI-T-P-5, § 25.857(c)(2) and § 25.1195(a) & (b); Use of Single Fire Suppression Bottle for Protection of Both a Class C Baggage Compartment and APU Installation
- (i) Cessna-072100-AG-1, § 25.807(i), Emergency Exit – Use of Water Barrier
- (j) Cessna-072100-S-3, § 25.831(g), Acceptable High Temperature Physiological Environment During Failure Conditions
- (k) Cessna-072100-P-4, § 25.1141(f)(2), Powerplant Valve Indication
- (l) Cessna-072100-S-5, § 25.783(d)(2), Cabin Entry Door – Independence of Latch Securing Means and Locking System
- (m) Cessna-072100-S-6, § 25.783(d)(2), Unpressurized Doors – Independence of Latch Securing Means and Locking Systems
- (n) Cessna-072100-S-2, § 25.841(a) and 25.841(b)(6), Cabin Pressurization – High Elevation Takeoff and Landing Operations Systems

(8) 14 CFR § 25.801 ditching not complied with.

(9) Compliance with ice protection has been demonstrated in accordance with 14 CFR § 25.1419.

(10) Additional Design Requirements:

(a) In-Flight Engine Restart

A minimum restart capability after an all-engines-out scenario must be established under the following conditions using procedures provided in the Airplane Flight Manual (AFM):

a. During the take-off and the initial climb-out portion of the flight, the airplane has the capability for the flight crew to restore engine power immediately following an all-engine-out scenario and when the fuel source to the engine is restored.

b. During the high altitude portion of the flight at cruise speed and maximum altitude, the airplane has the capability for the flight crew to restart engines from a stabilized windmill speed prior to descending below an altitude of 15,000 ft, by showing either or both:

- 1) All but one engine restarted and accelerated to produce maximum continuous thrust/power, or
- 2) The engine(s) restarted, and the necessary thrust/power achieved, to enable the airplane to maintain level flight.

c. During flight at speeds greater than the minimum flaps-up “holding speed” and at altitudes below 20,000 ft, the airplane has the capability for the flight crew to restart engines from a stabilized windmill speed prior to descending 5,000 ft from the initiation of the restart procedure and prior to exceeding an airspeed of 300 knots, by showing either or both:

- 1) All but one engine restarted and accelerated to produce maximum continuous thrust/power, or
- 2) The engine(s) restarted, and the necessary thrust/power achieved, to enable the airplane to maintain level flight.

(11) 14 CFR Part 26 is not applicable.

Application to amend type certificate was dated January 25, 2012. The type certificate T00012WI amended to include the Model 680A was obtained by the manufacturer using the Organization Designation Authorization (ODA) Procedures.

Production Basis      Production Certificate No. 4 amended to add Model 680A.

Equipment              The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane for certification.

**II. Model 680A Latitude** (cont'd)

NOTE 1. Current weight and balance information, including list of equipment included in certificated empty weight, and loading instructions are provided for each airplane at the time of original certification.

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

Unusable fuel	86.85 lb. at +395.22 in.
Full oil	33.50 lb. at +519.73 in.
Hydraulic Fluid	56.97 lb. at +415.52 in.

NOTE 2. Airplanes must be operated according to the FAA Approved AFM, part number 68AFM-00 (or later FAA approved revision). Required placards and markings are listed in Chapter 11 of Illustrated Parts Catalog, part number 68APC00 (or later revision).

NOTE 3. See Maintenance Manual, Chapter 4, "Airworthiness Limitations" for inspections, mandatory retirement life information, and other requirements for continued airworthiness.

NOTE 4. Aircraft definition for Type Certificate is Parts List 7400000, Airplane Assembly.

NOTE 5. Certification Maintenance Requirements (CMR) are found in Maintenance Manual, Chapter 4. Engineering approval of the CMR's is documented in the Cessna System Safety Assessment reports.

NOTE 6. The Model 680A has been approved for high altitude operations (altitudes above 41,000 ft) by compliance with certain Part 25 sections. To ensure the compliance is maintained, any modifications to the pressure vessel must be approved in accordance with the requirements as shown in the appropriate certification basis. To ensure pressurization compliance is not affected, this includes modifications which could result in a pressure vessel opening, either through crack-growth or antenna loss, greater than 5.00 sq. in.

NOTE 7. The Model 680A has been shown to meet the airworthiness requirements for operations in RVSM airspace. All serial numbers are eligible. Each operator must obtain RVSM operating approval directly from the FAA.

NOTE 8. The following serials are manufactured under the name Cessna Aircraft Company: 680A-0005 (TC Only).

NOTE 9. Company name change effective 7/29/15. The following serials are manufactured under the name Textron Aviation Inc.: 680A-0001 thru 680A-0004, 680A-0006 and On.

NOTE 10. Flight crew use of the alerting system during high elevation airport takeoff and landing operations may result in non-compliance with §§ 91.211(a)(1), 121.329(b)(1) and (b)(2), and 135.89(b) requirements for flight crew use of supplemental oxygen.

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