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# TYPE-CERTIFICATE DATA SHEET

**No. EASA.IM.A.232**

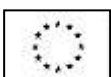
**For**

**Piper PA-44**

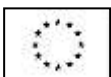
**Type Certificate Holder:**  
Piper Aircraft, Inc.

2926 Piper Drive  
Vero Beach, Florida 32960  
U.S.A.

For Models: PA-44-180  
PA-44-180T



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# CONTENT

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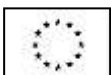
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## **ADMINISTRATIVE SECTION**

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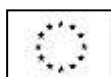
## **SECTION A: Model PA-44-180 (Seminole)**

### **A.I. General**

- |   |   |
|---|---|
| 1. a) Type:                             | PA-44   |
| b) Model:                               | PA-44-180 (Seminole)  |
| c) Variant:                             | N/A   |
| 2. Airworthiness Category:              | Normal Category   |
| 3. Manufacturer:                        | Piper Aircraft, Inc<br>2926 Piper Drive<br>Vero Beach, Florida 32960<br>U.S.A.                          |
| 4. EASA Certification Application Date: | N/A   |
| 5. State of Design Authority:           | FAA   |
| 6. State of Design TC Date:             | 10 March 1978   |
| 7. EASA Type Certification Date:        | 28 September 2003 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a)) |

### **A.II. Certification Basis**

1. Reference Date for determining the applicable requirements: Date of application for FAA TC - 17 January 1976
2. (Reserved)
3. (Reserved)
4. Certification Basis:
  - a) For the basic PA-44-180 (Seminole) aeroplane the applicable certification basis is FAR 23. For details on the applicable FAR 23 amendments see A.V., note 6.
  - b) For PA-44-180 (Seminole) aeroplanes equipped with the factory installed Avidyne Entegra System option the additional certification basis for installation specific items only is CS-23 (for details on applicable paragraphs see A.V., note 7).
  - c) For PA-44-180 (Seminole) aeroplanes equipped with the factory installed Garmin G1000 Integrated Avionics System option the additional certification basis for installation specific items only is CS-23 (for details on applicable paragraphs see A.V., note 7).
  - d) For PA-44-180 (Seminole) equipped with the factory installed Garmin GFC700 AFCS option the additional certification basis for installation specific items only is CS-23 (for details on applicable paragraphs see A.V., note 7).
  - e) For PA-44-180 (Seminole) aeroplanes equipped with Piper Lycoming IO-360-B1G6 and LIO-360-B1G6 Fuel Injected Engines the additional certification basis for installation specific items only is FAR 23 and CS-23 as defined in A.V., note 7).
5. Airworthiness Requirements:
  - a) FAR 23 for the basic PA-44-180 (Seminole) aeroplane



- (for applicable amendments see A.II.4).
- b) FAR 23 and CS-23 for PA-44-180 (Seminole) aeroplanes equipped with the factory installed Avidyne Entegra System option (for applicable amendments see A.II.4).
  - c) FAR 23 and CS-23 for PA-44-180 (Seminole) aeroplanes equipped with the factory installed Garmin G1000 Integrated Avionics System option (for applicable amendments see A.II.4)
  - d) FAR 23 and CS-23 for PA-44-180 (Seminole) aeroplanes equipped with the factory installed Garmin GFC700 AFCS option (for applicable amendments see A.II.4)
  - e) FAR 23 and CS-23 for PA-44-180 (Seminole) aeroplanes equipped with Piper Lycoming IO-360-B1G6 and LIO-360-B1G6 Fuel Injected Engines (for applicable amendments see A.V. note 7)

5. Requirements elected to comply: None

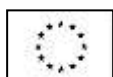
6. Special Conditions:

- a) None for the basic PA-44-180 (Seminole) aeroplane.
- b) CRI-F01, Protection from the Effects of HIRF, CRI-F02, Protection from the Effects of Lightning Strike; Indirect Effects, CRI-F05, Human Factors in Integrated Avionic Systems, for PA-44-180 (Seminole) aeroplanes equipped with the factory installed Avidyne Entegra System option.
- c) CRI B-52, Human Factors in Integrated Avionic Systems, CRI F-66, Synthetic Vision, FAR 23.1306, Amdt. 23-61, Protection of the effects of lightning strike, indirect effects (formerly CRI F-54), FAR 23.1308(a)(b)(c), Amdt. 23-61, Protection of the effects of HIRF (formerly CRI F-52), for PA-44-180 (Seminole) aeroplanes equipped with the factory installed Garmin G1000 Integrated Avionics System option, or with Piper factory installed Garmin G1000NXi Phase I as installed by Piper drawing number 107600-002, or with Piper factory installed Garmin G1000NXi Phase II as installed by Piper drawing number 107600-002 or 107600-003.
- d) CRI F-14 Electronic Stability and Protection (ESP), FAR 23.1306, Amdt. 23-61, Protection of the effects of lightning strike, indirect effects (formerly CRI F-54), FAR 23.1308(a)(b)(c), Amdt. 23-61, Protection of the effects of HIRF (formerly CRI F-52), for PA-44-180 aeroplanes equipped with the factory installed Garmin GFC700 AFCS option
- e) Special condition "Security Protection of Aircraft Systems and Networks" (see annex 1) for aeroplanes equipped with Piper factory installed Garmin G1000NXi Phase I as installed by Piper drawing number 107600-002, or with Piper factory installed Garmin G1000NXi Phase II as installed by Piper drawing number 107600-002 or 107600-003.

7. Exemption: None

8. Equivalent Safety Findings:

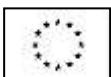
- a) FAR 23.1545(a) for the basic PA-44-180 (Seminole) aeroplane (airspeed indicator markings based on IAS instead of CAS).



- b) CRI-F03, Powerplant Instruments for PA-44-180 (Seminole) aeroplanes equipped with the factory installed Avidyne Entegra System option.
- c) CRI F-201, Flight Instruments, Stabilized Magnetic Compass,  
CRI F-203, Power Plant Instruments, Fuel Flow Indication, for PA-44-180 (Seminole) aeroplanes equipped with the factory installed Garmin G1000 Integrated Avionics System option, or with Piper factory installed Garmin G1000NXi Phase I as installed by Piper drawing number 107600-002, or with Piper factory installed Garmin G1000NXi Phase II as installed by Piper drawing number 107600-002 or 107600-003
- d) None for the factory installed Garmin GFC700 AFCS option

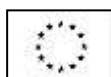
9. Environmental Standards:

ICAO Annex 16, Volume 1 (see TCDSN for further detail)



### **A.III. Technical Characteristics and Operational Limitations**

1. Type Design Definition: For aeroplane S/Ns 44-7995001 through 44-8195026 only:  
Piper report number VB-907
- For aeroplane S/Ns 4495001 through 4495013, and 4496001 and up only:  
Piper report number VB-907 (see note 10)
- For TDD of TCDS relevant changes see also note 8.
2. Description: Twin engine reciprocating, all-metal, four-place, unpressurized, low wing aeroplane, retractable tricycle landing gear.
3. Equipment: For approved equipment, see applicable AFM/POH, section 6.  
(For applicable AFM/POH see A.IV.).
4. Dimensions:
- |           |                      |           |
|-----------|----------------------|-----------|
| Span      | 11.75 m              | (38.6 ft) |
| Length    | 8.41 m               | (27.6 ft) |
| Height    | 2.59 m               | (8.5 ft)  |
| Wing Area | 17.08 m <sup>2</sup> | (184 sqf) |
5. Engines:
- 5.1 Engine 1: For aeroplane S/Ns 44-7995001 through 44-8195026 only:  
1 Lycoming O-360-E1A6D  
carburetor setting 10-5092, 10-5219, or 10-6019 (LH engine),  
1 Lycoming LO-360-E1A6D  
carburetor setting 10-5092, 10-5219, or 10-6019 (RH engine).
- 5.2 Engine 2: For aeroplane S/Ns 4495001 through 4495013, and 4496001 and up only:  
1 Lycoming O-360-A1H6  
carburetor setting 10-5219, or 10-6019 (LH engine)  
1 Lycoming LO-360-A1H6  
carburetor setting 10-5219, or 10-6019 (RH engine)
- The EASA Engine Type Certification standard includes that of FAA TCDS E-286 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1.(a))
- 5.2b Engine 2b (note 11) For aeroplane S/Ns 4496404, 4496417 and up.:  
1 Lycoming IO-360-B1G6 (Left Side) with fuel injector model RSA-5AD1, (Lycoming Part Number 61J28856)  
1 Lycoming LIO-360-B1G6 (Right Side) with fuel injector model RSA-5AD1 (Lycoming Part Number 61J28856)
- EASA TCDS EASA.IM.E.032
- 5.3 Engine Limits: For all operations:  
2700 RPM (180 HP)
- For other powerplant limitations refer to the applicable AFM/POH, section 2.
6. Propellers:
- 6.1 Propeller 1: For aeroplane S/Ns 44-7995001 through 44-8195026 only:  
1 Hartzell, Hub HC-C2Y(K, R) -2CEUF,  
Blade Model C7666A-2R (LH propeller)



Pitch: 1 Hartzell, Hub HC-C2Y(K, R) -2CLEUF,  
Blade Model FJC7666A-2R (RH propeller)  
High  $80.0^\circ \pm 1^\circ$ , Low  $12.4^\circ \pm 0.2^\circ$ , at 0.762 m (30") station.

Diameter: Not over 1.880 m (74.0"), not under 1.829 m (72.0").

Spinner: Hartzell P/N C2285-3 Spinner Assy (LH),  
Hartzell P/N C2285-3L Spinner Assy (RH),  
see A.V., note 9.

Governor: 1 Hartzell Hydraulic Governor Model E-3-2 (LH),  
1 Hartzell Hydraulic Governor Model E-3-2L (RH); or  
1 Hartzell Hydraulic Governor Model E-8-2L (RH) with  
synchrophaser (Piper Drawing No. 36889 Synchrophaser  
Installation, S/N 44-7995278 and up)

The EASA Propeller Type Certification standard includes that of FAA TCDS P-920 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))

6.2 Propeller 2: For aeroplane S/Ns 44-7995001 through 44-8195026 only:

1 Hartzell, Hub HC-C3YR-2EUF, Blade Model FC7663-5R (LH propeller)  
1 Hartzell, Hub HC-C3YR-2LEUF, Blade Model FJC7663-5R (RH propeller)

Pitch: High  $82.0^\circ \pm 1^\circ$ , Low  $10.6^\circ \pm 0.1^\circ$ , at 0.762 m (30") station.

Diameter: Not over 1.854 m (73.0"), not under 1.829 m (72.0").

Spinner: Hartzell P/N C4558 Spinner Assy (LH),  
Hartzell P/N C4558 Spinner Assy (RH)  
see A.V., note 9.

Governor: 1 Hartzell Hydraulic Governor Model E-3-2 (LH),  
1 Hartzell Hydraulic Governor Model E-3-2L (RH); or  
1 Hartzell Hydraulic Governor Model E-8-2L (RH) with  
synchrophaser (Piper Drawing No. 36889 Synchrophaser  
Installation, S/N 44-7995278 and up)

The EASA Propeller Type Certification standard includes that of FAA TCDS P25EA (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))

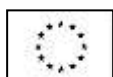
6.3 Propeller 3: For aeroplane S/Ns 4495001 through 4495013, and 4496001 and up only:

1 Hartzell, Hub HC-C2Y(K, R) -2CEUF,  
Blade Model C7666A-2R (LH propeller)  
1 Hartzell, Hub HC-C2Y(K, R) -2CLEUF,  
Blade Model FJC7666A-2R (RH propeller)

Pitch: High  $80.0^\circ \pm 1^\circ$ , Low  $12.4^\circ \pm 0.2^\circ$ , at 0.762 m (30") station.

Diameter: Not over 1.880 m (74.0"), not under 1.829 m (72.0").

Spinner: Hartzell P/N C2285-3 Spinner Assy (LH),  
Hartzell P/N C2285-3L Spinner Assy (RH)  
see A.V., note 9.





Governor: 1 Hartzell Hydraulic Governor Model U-3-15 (LH) with unfeathering accumulator,  
1 Hartzell Hydraulic Governor Model U-3-15L (RH) with unfeathering accumulator

The EASA Propeller Type Certification standard includes that of FAA TCDS P-920 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a)).

7. Fluids:

7.1 Fuel: 100/100LL minimum grade aviation gasoline

7.2 Engine Oil: In accordance with latest revision of Lycoming SI 1014.

8. Fluid capacities:

8.1 Fuel: Total: 416 liters (110 US gal) in 2 nacelle tanks  
Usable: 408 liters (108 US gal) in 2 nacelle tanks

8.2.Oil (per engine): For aeroplanes S/Ns 44-7995001 through 44-8195026 only:  
Maximum: 5.7 liters (6 qts)  
Minimum: 1.9 liters (2 qts)

For aeroplanes S/Ns 4495001 through 4495013, and 4496001 and up only:  
Maximum: 7.6 liters (8 qts)  
Minimum: 1.9 liters (2 qts)

9. Air Speeds:

Design Manoeuvring Speed, $v_A$ (1724 kg (3800 lb))	135 KIAS
Design Manoeuvring Speed, $v_A$ (1225 kg (2700 lb))	112 KIAS
Never Exceed Speed $v_{NE}$	202 KIAS
Maximum Structural Cruising Speed, $v_{NO}$	169 KIAS
Maximum Flap Extend Speed, $v_{FE}$	111 KIAS
Maximum Landing Gear Operating Speed, $v_{LO}$	
Extension	140 KIAS
Retraction	109 KIAS
Maximum Landing Gear Extended Speed, $v_{LE}$	140 KIAS
Minimum Control Speed $v_{MC}$	56 KIAS

10.Maximum Operating Altitude: no limitation specified

11.Operational Capability: VFR Day and Night  
IFR Day and Night

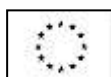
12.Maximum Masses:

Ramp: 1731 kg (3816 lb)  
Take-Off: 1724 kg (3800 lb)  
Landing: 1724 kg (3800 lb)

13.Centre of Gravity Range (gear extended):

linear variation between given points

Weight kg (lb)	Fwd. Limit m (in) aft of datum	Aft Limit m (in) aft of datum
1724 (3800)	2.261 (89.0)	2.362 (93.0)



1542 (3400)	2.159 (85.0)	2.362 (93.0)
1270 (2800)	2.134 (84.0)	2.362 (93.0)

see also A.V. note 3

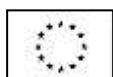
Moment change due to retracting landing gear is +9.44 kgm (+819 in-lb).

14. Datum: 1.99 m (78.4") forward of wing leading edge at WS 106
- 15.(Reserved)
- 16.Levelling Means: Two screws at the left side fuselage below window.
- 17.Minimum Flight Crew: 1 (Pilot)
- 18.Max. Passenger Seating Capacity: 3, for passenger seating locations see applicable AFM/POH
19. Baggage / Cargo Compartments: 91 kg (200 lb) at 3.627 m (+142.8 in)
- 20.Wheels and Tyres:
- 20.1Nose Wheel Tyre Size 5.00x5, 6 ply
- 20.2Main Wheel Tyre Size 6.00x6, 8 ply
- 21.(Reserved)
- 22.Control Surface Movements: For approved control surface deflections see applicable Airplane Maintenance Manual (A.IV.).

#### **A.IV. Operating and Service Instructions**

Airplane Flight Manual AFM and  
Pilot's Operating Handbook (POH):

- a) Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-860 for Model PA-44-180 (Seminole), S/N 44-7995001 through 44-8195026.
- b) Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1380 for Model PA-44-180 (Seminole), S/N 4495001 through 4495013.
- c) Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1616 for Model PA-44-180 (Seminole), S/N 4496001 and up.
- d) DOA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1942 for Model PA-44-180 (Seminole), when equipped with the factory installed Avidyne Entegra option, S/N 4496174 and 4496224 and up.
- e) ODA-510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-2307, Rev 1 or higher, for Model PA-44-180 (Seminole), when equipped with the factory installed Garmin G1000 Integrated Avionics System option, S/N 4496331 and 4496339 and up.
- f) ODA-510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-2307, Rev 5 or higher, for Model PA-44-180 (Seminole), when equipped with the factory installed Garmin G1000 and GFC700 AFCS option, S/N 4496331 and 4496367 and up.

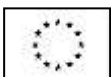


- g) ODA-510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report VB-2636 Rev 04 dated December 16, 2019 or later approved by FAA for S/N: 4496404, 4496417 and up, when the Lycoming Fuel Injected Engines are installed, for S/N: 4496432, 4496447 and up, when Garmin G1000NXi is installed by Piper Drawing Number 107600-002 or 107600-003

Airplane Maintenance Manual (AMM): P/N 761-664, latest approved revision, for S/N 44-7995001 through 4495013

P/N 761-892, latest approved revision, for S/N 4496001 and up

Service Bulletins and Service Letters



## **A.V. Notes**

1. Applicable Manufacturer's S/N and Certification Import Requirements:

- a) Basic aeroplane: S/N 44-7995001 and up  
b) Avidyne Entegra option: S/N 4496174 and 4496224 and up

In addition for import into EU-countries following requirements have to be met:

- PFD set-up has to be configured to display hPa (mbar) altimeter setting units.  
- Pointer type altimeters (including stand-by altimeters) have to be either factory installed or installed in accordance with an approved change, and must have a hPa (mbar) barometric pressure setting scale.

- PFD/MFD fuel quantity and fuel flow units shall be configured in compliance with units displayed in the POH/AFM (see FAR/CS 23.1581c)).

- c) Garmin G1000 option: S/N 4496331 and 4496339 and up  
d) Garmin GFC700 AFCS option: S/N 4496331 and 4496367 and up

2. Approved Noise Levels  
see TCDSN IM.A.232

3. Weight and Balance:

Current Weight and Balance Report, including list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

The certificated empty weight and corresponding center of gravity locations must include undrainable system oil (not included in oil capacity) and unusable fuel as noted below:

Fuel: 5.4 kg (12.0 lb). at +2.413 m (+ 95.0 in)  
Oil: 1.6 kg (3.6 lb). at +1.748 m (+ 68.8 in)

4. Placards:

All placards required in the approved Airplane Flight Manual or Pilot's Operating Handbook and approved Airplane Flight Manual or Pilot's Operating Handbook Supplements must be installed in the appropriate location.

5. Life Limitations:

The service life of the wing and associated structure has been established as 14663 hours maximum.

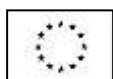
6. Certification Basis for basic PA-44-180 (Seminole) aeroplanes:

Federal Aviation Regulations (FAR) Part 23 effective February 1, 1965, through Amendment 23-16 effective February 14, 1975; FAR 23.1557(c)(1) as amended by Amendment 23-18 effective May 2, 1977; Equivalent Safety Finding: FAR 23.1545(a) (marking of ASI in IAS instead of CAS).

7. In addition to the certification basis defined in CRI-A01, latest revision, the applicable paragraphs for the factory installation of the Avidyne Entegra option are listed below. These CS requirements substitute the corresponding paragraphs of note 6.

CS-23 (basic release):

CS 23.301, 23.303, 23.305, 23.307, 23.337, 23.341, 23.473, 23.561, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.683, 23.771, 23.773, 23.777, 23.867, 23.955, 23.1301, 23.1303, 23.1305,



23.1309, 23.1311, 23.1321, 23.1322, 23.1323, 23.1325, 23.1327, 23.1329, 23.1331, 23.1335, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1549, 23.1553, 23.1555, 23.1563, 23.1581, 23.1583, 23.1585

The applicable paragraphs for the factory installation of the Garmin G1000 Integrated Avionics System option are listed below. These CS requirements substitute the corresponding paragraphs of note 6. CS-23 (Amendment 2):

CS 23.21, 23.23(a), 23.25, 23.29, 23.207(a), 23.251, 23.301(a)(b)(c), 23.303, 23.305, 23.307, 23.337, 23.341(a)(c), 23.421(a), 23.473, 23.561(a)(b)(3)(e), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.625, 23.627, 23.729(e)(f), 23.771(a), 23.773(a)(1)(2), 23.777(a)(b), 23.867, 23.1041, 23.1043(a)(b)(c)(d), 23.1047, 23.1163(a)(b)(d), 23.1301, 23.1303(a)(b)(f), 23.1305(a)(1)(2)(3)(b)(2)(3)(i)(5), 23.1309(a)(1)(3)(b)(c)(d)(e), 23.1311, 23.1321, 23.1322, 23.1323(a)(c), 23.1325(a)(b)(1)(2)(i), 23.1326, 23.1327(a), 23.1329(d)(g)(h), 23.1335, 23.1337(b)(1)(4), 23.1351(a)(1)(2)(i)(b)(1)(i)(3)(c)(4)(d), 23.1353, 23.1357, 23.1359(c), 23.1361(a)(c), 23.1365, 23.1367, 23.1381, 23.1431(a)(b)(e), 23.1501, 23.1507, 23.1523, 23.1525, 23.1529, 23.1541(a)(b), 23.1543(b)(c), 23.1545(a)(b), 23.1549(a)(b)(c), 23.1553, 23.1555(a)(b)(e)(1), 23.1563(a)(b), 23.1567(a), 23.1581(a)(c), 23.1583(g)(h)(m), 23.1585(j), 23.1589

The applicable paragraphs for the factory installation of the Garmin GFC700 AFCS option are listed below.

These CS requirements substitute the corresponding paragraphs of note 6.

CS-23 (Amendment 3):

23.21(b), 23.23(a)(b)(3), 23.25(a)(1)(iii)(b), 23.29, 23.143(a)(b), 23.207(a)(b)(c)(d)(e), 23.301(a)(b)(c), 23.303, 23.305, 23.307, 23.337, 23.397, 23.399, 23.341(a)(c), 23.473, 23.561(a)(b)(3)(e), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.625, 23.627, 23.681, 23.683, 23.693, 23.771(a), 23.777(a)(b), 23.779(a)(2), 23.867, 23.1141(d), 23.1301, 23.1309(a)(1)(3)(b)(c)(d)(e), 23.1321(c), 23.1322(a)(b)(c)(d)(e), 23.1329(a)(1)(b)(c)(d)(e)(f)(g)(h), 23.1335, 23.1351(a)(1)(2)(i), 23.1357(a)(b)(c)(d), 23.1359(c), 23.1365, 23.1367(a)(b)(c)(d), 23.1431(a)(b)(e), 23.1501, 23.1523, 23.1525, 23.1529, 23.1541(a)(b), 23.1555(a), 23.1581(a), 23.1583(g)(h)(m), 23.1585(a)(1)(j)

For aircraft equipped with Piper Lycoming IO-360-B1G6 and LIO-360-B1G6 Fuel Injected Engines, for installation specific items only, these requirements substitute the corresponding paragraphs of note 6.

CS 23 at Amendment 3:

23.21, 23.23, 23.25(a)(b), 23.29, 23.301, 23.303, 23.305, 23.307, 23.337, 23.341(a)(c), 23.473, 23.561(a)(b)(3)(e), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.625, 23.627, 23.777(a)(b), 23.779(b)(1), 23.954(a)(b)(c), 23.955(a)(c)(1)(3)(e)(3), 23.969, 23.1017, 23.1023, 23.1041, 23.1043, 23.1047, 23.1093(a)(5), 23.1101, 23.1107, 23.1149, 23.1163, 23.1182; 23.1301(a)(b)(c)(d), 23.1305(a)(1)(2)(3)(4)(b)(2)(3)(i)(4)(5), 23.1309(a)(1)(a)(3)(b)(f), 23.1337(a)(1)(2)(3)(b)(1)(4)(c)(d)(1), 23.1351(b)(1)(i), 23.1357(a)(b)(c), 23.1359(c), 23.1365(e), 23.1431(b), 23.1529, 23.1541(a)(b), 23.1549(a)(b)(c), 23.1553, 23.1555(a)(b)(c)(1)(3)(4)(d)(e)(1)(2), 23.1581(a), 23.1583(g)(h)(m), 23.1585(j), 23.1589;

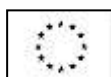
14 CFR Part 23 at Amendment 23-16

23.33(a)(d), 23.865, 23.901(a)(1)(2)(b)(1)(2), 23.903(a)(c)(1)(2)(d), 23.905(a)(b)(c), 23.907(a), 23.925(a)(c)(1)(2)(3), 23.951(a)(b)(1), 23.953(a), 23.959, 23.961, 23.963, 23.965, 23.967, 23.971, 23.973, 23.975(a), 23.977, 23.991(a)(1)(b), 23.993, 23.994, 23.995, 23.997, 23.999, 23.1011, 23.1019(b), 23.1021, 23.1027, 23.1091(a)(b)(1)(2)(3), 23.1103, 23.1121(a)(b)(c)(d)(e)(f), 23.1123, 23.1141(a)(b)(c)(d), 23.1143, 23.1145, 23.1147, 23.1153, 23.1183, 23.1189, 23.1191, 23.1193, 23.1521(a)(b)(1)(c)(1)(4)(d)

14 CFR Part 23 Amendment 23-51; 23.1093(a)(5)

Note: 14 CFR § 23.1093 (a)(5) Amdt 23-51 is accepted as means of compliance to CS 23.1093 (a)

For aircraft equipped with Piper factory installed optional Garmin G1000 NXi phase I as installed by Piper Drawing Number 107600-002, the applicable requirements are listed below. These requirements substitute the corresponding paragraphs of note 6. Note that the G1000 NXi is an upgrade of the G1000, so for aeroplanes modified with the G1000 NXi also the applicable certification basis for the G1000 installation shall be considered.



CS 23 Amendment 3: 23.21, 23.23(a), 23.25(a)(b), 23.29, 23.251, 23.301(a)(b)(c), 23.303, 23.305, 23.307, 23.337, 23.341(a)(c), 23.421(a), 23.473, 23.561(a)(b)(3)(e), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.625, 23.627, 23.729(e)(f), 23.771(a), 23.773(a)(2), 23.777(a)(b), 23.867, 23.903(a), 23.1041, 23.1043(a)(b)(c), 23.1047, 23.1163(a)(b)(d), 23.1301, 23.1303(a)(b)(f), 23.1305(a)(1)(2)(3)(b)(2)(3)(i)(4)(5), 23.1309(a)(1)(3)(b)(c)(d)(e), 23.1311(a)(1)(2)(3)(4)(5)(6)(7)(b)(c), 23.1321(a)(b)(c)(d)(5)(e), 23.1322(a)(b)(c)(d)(e), 23.1323(a)(c), 23.1325(a)(b)(1)(2)(i), 23.1326(a), 23.1327(a), 23.1329(h), 23.1335, 23.1337(b)(1)(4), 23.1351(a)(1)(2)(i) (b)(1)(i)(3)(c)(4)(d), 23.1353(h), 23.1357(a)(b)(c)(d), 23.1359(c), 23.1361(a), 23.1365, 23.1367(a)(b)(c)(d), 23.1381(a)(b)(c), 23.1383(a)(b)(c)(d), 23.1385(a)(b)(c)(d), 23.1387(a)(b)(c)(d)(e), 23.1389(a)(b)(c), 23.1391, 23.1393, 23.1395(a)(b), 23.1397(a)(b)(c), 23.1401(a)(b)(c)(d)(e)(f), 23.1431(a)(b), 23.1523, 23.1525, 23.1529, 23.1541(a)(b), 23.1543(b)(c), 23.1545(a)(b), 23.1549(a)(b)(c), 23.1553, 23.1555(a)(b)(e)(1), 23.1563(a)(b), 23.1567(a), 23.1581(a)(c), 23.1583(g)(h)(m), 23.1585(j), 23.1589.

For aircraft equipped with Piper factory installed optional Garmin G1000 NXi phase II as installed by Piper Drawing Number 107600-002 or 107600-003, the applicable requirements are listed below. These requirements substitute the corresponding paragraphs of note 6. Note that the G1000 NXi is an upgrade of the G1000, so for aeroplanes modified with the G1000 NXi also the applicable certification basis for the G1000 installation shall be considered.

CS 23 Amendment 3: 23.21, 23.23, 23.25(a)(b), 23.29, 23.251, 23.301(a)(b)(c), 23.303, 23.305(a)(b), 23.307(a), 23.337(a)(b), 23.341(a)(c), 23.473, 23.561(a)(b)(3)(e), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.625, 23.627, 23.729(e)(f), 23.771(a), 23.773(a)(1)(2), 23.777(a)(b), 23.867, 23.1301(a)(b)(c)(d), 23.1303(a)(b)(f) 23.1305(a)(1)(2)(3)(b)(2)(3)(i)(4)(5), 23.1309(a)(1)(3)(b)(c)(d)(e), 23.1311(a)(1)(2)(3)(4)(6)(7)(b)(c), 23.1321(a)(b)(c)(d)(5)(e), 23.1322(a)(b)(c)(d)(e), 23.1323(a)(c), 23.1325(a)(b)(1)(2)(i), 23.1326(a)(b), 23.1327(a), 23.1329(d)(e)(g)(h), 23.1335, 23.1337(b)(1)(4), 23.1351(a)(1)(2)(i)(b)(1)(i)(ii)(iii)(3)(c)(4)(d), 23.1353(h), 23.1357(a)(b)(c)(d), 23.1359(c), 23.1361(a), 23.1365, 23.1367(c)(d), 23.1381(a)(b)(c), 23.1431(a)(b)(e), 23.1501, 23.1523, 23.1525, 23.1529, 23.1541(a)(b), 23.1543(b)(c), 23.1545(a)(b), 23.1549(a)(b)(c), 23.1553, 23.1555(a)(b)(e)(1), 23.1581(a)(c), 23.1583(g)(h)(m), 23.1585(j), 23.1589(a),

8. Type Design Definition of TCDS relevant changes:

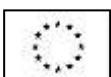
- |   |                                 |
|---|---------------------------------|
| a) Factory installed Avidyne Entegra option:    | New Piper report number VB-1940 |
| b) Factory installed Garmin G1000 option:       | Piper Top Drawing 107600        |
| b) Factory installed Garmin GFC700 AFCS option: | Piper Top Drawing 107600-001    |

9. The PA-44-180, S/N 44-7995001 through 44-8195026, may be operated without spinner domes or without spinner domes and rear bulkheads, except when equipped with three-bladed propellers and air conditioning, in which case only the spinner dome may be removed.

The PA-44-180, S/N 4495001 through 4495013, and 4496001 and up, may be operated with only the spinner dome removed.

10. PA-44-180, S/N 4495001 and on, differ from PA-44-180, S/Ns 44-7995001 through 44-8195026, not only because of a different engine model installed but also because of major powerplant installation differences.

11. Engine In AIII.5.2b only in combination with propeller in AIII.6.3



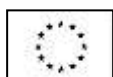
## **SECTION B: Model PA-44-180T (Turbo Seminole)**

### **B.I. General**

- |   |   |
|---|---|
| 1. a) Type:                             | PA-44   |
| b) Model:                               | PA-44-180T (Turbo Seminole)   |
| c) Variant:                             | N/A   |
| 2. Airworthiness Category:              | Normal Category   |
| 3. Manufacturer:                        | Piper Aircraft, Inc<br>2926 Piper Drive<br>Vero Beach, Florida 32960<br>U.S.A.                          |
| 4. EASA Certification Application Date: | N/A   |
| 5. State of Design Authority:           | FAA   |
| 6. State of Design TC Date:             | 29 November 1979  |
| 7. EASA Type Certification Date:        | 28 September 2003 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a)) |

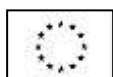
### **B.II. Certification Basis**

- |  |   |
|--|---|
| 1. Reference Date for determining the applicable requirements: | Date of application for FAA TC - 6 September 1978   |
| 2. (Reserved)  |   |
| 3. (Reserved)  |   |
| 4. Certification Basis:  | For the basic PA-44-180T (Turbo Seminole) aeroplane the applicable certification basis is FAR 23. For details on the applicable FAR 23 amendments see B.V., note 6. |
| 5. Airworthiness Requirements:                                 | FAR 23 for the basic PA-44-180T (Turbo Seminole) aeroplane (for applicable amendments see B.II., 4).  |
| 6. Requirements elected to comply:                             | None  |
| 7. Special Conditions:   | None  |
| 8. Exemption:  | None  |
| 9. Equivalent Safety Findings:                                 | None  |
| 10. Environmental Standards:                                   | ICAO Annex 16, Volume 1, (see TCDSN for further detail)   |



### **B.III. Technical Characteristics and Operational Limitations**

1. Type Design Definition: Piper Report number VB-1052
2. Description: Twin engine reciprocating, turbo charged, all-metal, four-place, unpressurized, low wing aeroplane, retractable tricycle landing gear.
3. Equipment: For approved equipment, see applicable AFM/POH, section 6.  
(For applicable AFM/POH see B.IV.).
4. Dimensions:
- |           |                                |
|-----------|--------------------------------|
| Span      | 11.75 m (38.6 ft)              |
| Length    | 8.41 m (27.6 ft)               |
| Height    | 2.59 m (8.5 ft)                |
| Wing Area | 17.08 m <sup>2</sup> (184 sqf) |
5. Engine:
- 1 Lycoming TO-360-E1A6D, carburetor setting 10-5256, (LH engine),  
1 Lycoming LTO-360-E1A6D, carburetor setting 10-5256, (RH engine).
- The EASA Engine Type Certification standard includes that of FAA TCDS E26EA (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1.(a) .
- 5.1 Engine Limits:
- For all operations:  
36.5 inHg @ 2575 RPM (180 HP)
- For other powerplant limitations refer to the applicable AFM/POH, section 2.
6. Propellers:
- 6.1 Propeller 1:
- 1 Hartzell, Hub HC-C2YR-2C ( )UF,  
Blade Model FC7666A-2R or FC7666AB-2R (LH propeller)  
1 Hartzell, Hub HC-C2YR-2CL ( )UF,  
Blade Model FJC7666A-2R or FJC7666AB-2R (RH propeller)
- Pitch: High 80.0° ±1°, Low 13.1°± 0.2°, at 0.762 m (30") station.
- Diameter: Not over 1.880 m (74.0"), not under 1.829 m (72.0").
- Spinner: Hartzell P/N C2285-3 Spinner Assy (LH),  
Hartzell P/N C2285-3L Spinner Assy (RH)
- Governor: 1 Hartzell Hydraulic Governor Model E-3-5 (LH), or  
1 Hartzell Hydraulic Governor Model U-3-10 (LH) with unfeathering accumulator,  
  
1 Hartzell Hydraulic Governor Model E-3-5L (RH), or  
1 Hartzell Hydraulic Governor Model U-3-10L (RH) with unfeathering accumulator, or





1 Hartzell Hydraulic Governor Model E-8-5L (RH) with synchrophaser (Piper Drawing 86818-2), or  
1 Hartzell Hydraulic Governor Model U-8-10L (RH) with unfeathering accumulator and synchrophaser installation (Piper Drawing 86818-2).

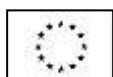
The EASA Propeller Type Certification standard includes that of FAA TCDS P-920 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))

- 6.2 Propeller 2: 1 Hartzell, Hub HC-C3YR-2 ( )UF, Blade Model FC7663-5R or FC7663B-5R (LH propeller),  
1 Hartzell, Hub HC-C3YR-2L ( )UF, Blade Model FJC7663-5R or FJC7663B-5R (RH propeller).
- Pitch: High 82.0° ±1°, Low 11.2°± 0.1°, at 0.762 m (30") station.
- Diameter: Not over 1.854 m (73.0"), not under 1.829 m (72.0").
- Spinner: Hartzell P/N C4558 Spinner Assy (LH),  
Hartzell P/N C4558 Spinner Assy (RH)
- Governor: 1 Hartzell Hydraulic Governor Model E-3-5 (LH), or  
1 Hartzell Hydraulic Governor Model U-3-10 (LH) with unfeathering accumulator,  
  
1 Hartzell Hydraulic Governor Model E-3-5L (RH), or  
1 Hartzell Hydraulic Governor Model U-3-10L (RH) with unfeathering accumulator, or  
1 Hartzell Hydraulic Governor Model E-8-5L (RH) with synchrophaser (Piper Drawing 86818-2), or  
1 Hartzell Hydraulic Governor Model U-8-10L (RH) with unfeathering accumulator and synchrophaser installation (Piper Drawing 86818-2)

"Avoid continuous operation at manifold pressures below 15 "Hg above 12.000 ft altitude."

The EASA Propeller Type Certification standard includes that of FAA TCDS P25EA (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))

7. Fluids:
- 7.1 Fuel: 100/100LL minimum grade aviation gasoline,
- 7.2 Engine Oil: In accordance with latest revision of Lycoming SI 1014.
8. Fluid capacities:
- 8.1 Fuel: Total: 416 liters (110 US gal) in 2 nacelle tanks  
Usable: 408 liters (108 US gal) in 2 nacelle tanks
- 8.2.Oil (per engine): Maximum: 5.7 liters (6 qts)  
Minimum: 1.9 liters (2 qts)



9. Air Speeds:

Design Manoeuvring Speed, $v_A$ (1780 kg (3925 lb))	137 KIAS
Design Manoeuvring Speed, $v_A$ (1225 kg (2700 lb))	112 KIAS
Never Exceed Speed $v_{NE}$	202 KIAS
Maximum Structural Cruising Speed, $v_{NO}$	170 KIAS
Maximum Flap Extend Speed, $v_{FE}$	111 KIAS
Maximum Landing Gear Operating Speed, $v_{LO}$	
Extension	140 KIAS
Retraction	109 KIAS
Maximum Landing Gear Extended Speed, $v_{LE}$	140 KIAS
Minimum Control Speed $v_{MC}$	57 KIAS

10. Maximum Operating Altitude: 20.000 ft

11. Operational Capability: VFR Day and Night  
IFR Day and Night

12. Maximum Masses:

Ramp:	1789 kg (3943 lb)
Take-Off:	1780 kg (3925 lb)
Landing:	1724 kg (3800 lb)

13. Centre of Gravity Range (gear extended):  
linear variation between given points

Weight kg (lb)	Fwd. Limit m (in) aft of datum	Aft Limit m (in) aft of datum
1780 (3925)	2.278 (89.7)	2.362 (93.0)
1724 (3800)	2.217 (87.3)	2.362 (93.0)
1542 (3400)	2.159 (85.0)	2.362 (93.0)
1225 (2700)	2.108 (83.0)	2.362 (93.0)

see also B.V. note 3

14. Datum: 1.99 m (78.4") forward of wing leading edge at WS 106.

15. (Reserved)

16. Levelling Means: Two screws at the left side fuselage below window

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: 3, for  
passenger seating locations see applicable AFM/POH

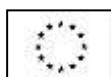
19. Baggage / Cargo Compartments: 91 kg (200 lb) at 3.627 m (+142.8 in)

20. Wheels and Tyres:

20.1 Nose Wheel Tyre Size	5.00x5, 6 ply
20.2 Main Wheel Tyre Size	6.00x6, 8 ply

21. (Reserved)

22. Control Surface Movements: For approved control surface deflections see applicable  
Airplane Maintenance Manual (B.IV.).



#### **B.IV. Operating and Service Instructions**

Airplane Flight Manual AFM and  
Pilot's Operating Handbook (POH):

- a) Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1100 for Model PA-44-180T (Turbo Seminole),  
S/N 44-8107001 through 44-8207020

Airplane Maintenance Manual (AMM): P/N 761-664, latest approved revision  
S/N 44-8107001 through 44-8207020

Service Bulletins and Service Letters

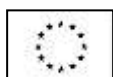
#### **B.V. Notes**

1. Applicable Manufacturer's S/N: S/N 44-8107001 through 44-8207020
2. Approved Noise Levels:  
TBD (EASA noise certificate)
3. Weight and Balance:  
Current Weight and Balance Report, including list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

The certificated empty weight and corresponding center of gravity locations must include undrainable system oil (not included in oil capacity) and unusable fuel as noted below:

Fuel: 5.4 kg (12.0 lb). at +2.413 m (+ 95.0 in)  
Oil: 1.6 kg (3.6 lb). at +1.748 m (+ 68.8 in)

4. Placards:  
All placards required in the approved Airplane Flight Manual or Pilot's Operating Handbook and approved Airplane Flight Manual or Pilot's Operating Handbook Supplements must be installed in the appropriate location
5. Life Limitations:  
The service life of the wing and associated structure has been established as 16462 hours maximum.
6. Certification Basis for basic PA-44-180T (Turbo Seminole) aeroplanes:  
Federal Aviation Regulations (FAR) Part 23 effective February 1, 1965, through Amendment 23-16 effective February 14, 1975; FAR 23.207 and 23.1091 as amended by Amendment 23-7 effective September 14, 1969; FAR 23.201 and 23.203 as amended by Amendment 23-14 effective December 20, 1973; FAR 23.1093 and 23.1557(c)(1) as amended by Amendment 23-18 effective May 2, 1977; FAR 23.1581(b)(2) as amended by Amendment 23-21 effective March 1, 1978; FAR 23.1545(a) as amended by Amendment 23-23 effective December 1, 1978; compliance with FAR 23.1441 as amended by Amendment 23-9 effective June 17, 1970, shown with optional supplemental oxygen.



## **ADMINISTRATIVE SECTION**

### **I. ACRONYMS**

N/A

### **II. TYPE CERTIFICATION HOLDER RECORD**

#### **Piper Aircraft, Inc.**

2926 Piper Drive  
Vero Beach, Florida 32960  
U.S.A.

Until August 7, 2006:

#### **The New Piper Aircraft, Inc.**

2926 Piper Drive  
Vero Beach, Florida 32960  
U.S.A.

Until 1995:

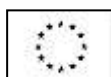
#### **Piper Aircraft Corporation**

Lock Haven, Pennsylvania/Vero Beach Florida  
U.S.A.

### **III. CHANGE RECORD**

Issue No.	Date	Change
01	28 February 2007	Initial issue to record EASA approval of Avidyne Entegra installation
02	13 May 2014	Addition of the Garmin G1000 Integrated Avionics System option
03	10 February 2017	Addition of the Garmin GFC700 AFCS option to Section A Editorial changes in Section A and Section B Removal of "Lycoming SI 1070" alternate fuel reference in Section A and Section B
04	03 July 2020	Addition of the Garmin G1000 phase I and II option for the PA-44-180; Addition of the fuel injected engines for the PA-44-180 . Clarified the certification basis for Noise. Removed references to CRI A-01.

- END -



#### IV. Appendix 1

Special condition	"Security Protection of Aircraft Systems and Networks"
<p>a) The applicant shall ensure security protection of the systems and networks of the aircraft from any remote or local access by unauthorized sources if corruption of these systems and networks (including hardware, software, data) by an inadvertent or intentional attack would impair safety, and</p> <p>b) The applicant shall ensure that the security threats to the aircraft, including those possibly caused by maintenance activity or by any unprotected connecting equipment/devices inside or outside the A/C, are identified, assessed and risk mitigation strategies are implemented to protect the aircraft systems from all adverse impacts on safety, and</p> <p>c) Appropriate procedures shall be established to ensure that the approved security protection of the aircraft's systems and networks is maintained following future changes to the Type Certificated design.</p> <p>Definitions:</p> <p>See also ED-202A for a complete set of definition.</p>	
Terms	Definitions
Security	Safeguarding civil aviation against acts of unlawful interference, which consist in this context of threats to the integrity and availability of aircraft systems and data, including operational software, over networks and network interfaces but excluding consideration for or mitigation of physical threats that does not involve propagation of data or information over a network or manipulation of data by a computer system.
Threat	Any potential violation of security that could cause direct or indirect damages to an asset

