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## TYPE-CERTIFICATE DATA SHEET

**UK.TC.A.00021**

for  
Piper PA-44

Type Certificate Holder

**Piper Aircraft, Inc.**

2926 Piper Drive,

Vero Beach,

Florida

32960

United States of America

Model(s): PA-44-180  
PA-44-180T

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## Section 1 PA-44-180 (Seminole)

### I. General

#### 1. Type / Variant or Model

Type: PA-44  
Variant or Model: PA-44-180 (Seminole)

#### 2. Airworthiness Category

Normal Category

#### 3. Type Certificate Holder

Piper Aircraft, Inc.  
2926 Piper Drive  
Vero Beach,  
Florida 32960  
United States of America

#### 4. EASA Type Certification Application Date

N/A

#### 5. State of Design Authority

FAA

#### 6. State of Design Auth. Type Certification Date

10 March 1978

#### 7. UK Type Certification Date

28 September 2003 (see UK Reg (EU) No. 748/2012 Article 3, para 1(a))

### II. Certification Basis

#### 8. Reference Date for determining the applicable requirements

Date of application for FAA TC for Model PA-44-180 (Seminole)  
17 January 1976

#### 9. Airworthiness Requirements

- a) FAR 23 for the basic PA-44-180 (Seminole) aeroplane (for applicable amendments see note 6).
- 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 note 7).
- 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 note 7)
- 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 note 7)
- 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 note 7)
- f) FAR 23 and CS-23 for PA-44-180 (Seminole) aeroplanes equipped with the factory installed Garmin G5 Standby Instrument option (for applicable amendments see note 7)

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10. Requirements elected to comply</b> | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>11. Special Conditions</b>             | <ul style="list-style-type: none"> <li>a) None for the basic PA-44-180 (Seminole) aeroplane</li> <li>b) CRI-F01, Protection from the Effects of HIRF, CRI-F02, Protection from the effects of Lightning Strike; Indirect effects<br/>CRI-F05, Human Factors in Integrated Avionic Systems, for PA-44-180 (Seminole) aeroplanes equipped with the factory installed Avidyne Entegra System option.</li> <li>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.</li> <li>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</li> <li>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.</li> <li>f) SC-B23.div-01 (B-52) Human Factors in Integrated Avionic Systems for PA-44-180 (Seminole) aeroplanes equipped with Garmin G5 Standby Instrument</li> </ul> |
| <b>12. Exemptions</b>                     | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>13. Deviations</b>                     | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>14. Equivalent Safety Findings</b>     | <ul style="list-style-type: none"> <li>a) FAR 23.1545(a) for the basic PA-44-180 (Seminole) aeroplane (airspeed indicator markings based on IAS instead of CAS).</li> <li>b) CRI-F03, Powerplant Instruments for PA-44-180 (Seminole) aeroplanes equipped with the factory installed Avidyne Entegra System option.</li> <li>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</li> <li>d) None for the factory installed Garmin GFC700 AFCS option</li> <li>e) F-201, Flight Instruments, Stabilized Magnetic Compass, for PA-44-180 (Seminole) aeroplanes equipped with Garmin G5 Standby Instrument</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

15.

Environmental Protection

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

III.

Technical Characteristic and Operating Limitations

16.

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.

17.

Description

Twin engine reciprocating, all-metal, four-place, unpressurized, low-wing aeroplane, retractable tricycle landing gear.

18.

Equipment

For approved equipment, see available AFM/POH, section 6.  
(For applicable AFM/POH see Section IV).

19.

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 ft<sup>2</sup>)

20.

Engines

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).

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 Engine Type Certification standard includes that of FAA TCDS E-286 ((see UK Reg (EU) No. 748/2012 Article 3, para 1(a))

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)

Engine Limits:

For all operations:  
2700 RPM (180HP)  
  
For other powerplant limitations refer to the applicable AFM/POH, section 2.

## 21. Propellers:

|              |                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Propeller 1: | For aeroplane S/Ns 44-7995001 through 44-8195026 only:<br>1 Hartzell, Hub HC-C2Y(K, R) -2CEUF, Blade Model C7666A-2R (LH propeller)<br>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),<br>Hartzell P/N C2285-3L Spinner Assy (RH),<br>see note 9.                                                                                                                                                                                                                                                                                            |
| Governor:    | 1 Hartzell Hydraulic Governor Model E-3-2 (LH),<br>1 Hartzell Hydraulic Governor Model E-3-2L (RH); or<br>1 Hartzell Hydraulic Governor Model E-8-2L (RH) with synchrophaser (Piper Drawing No. 36889 Synchrophaser Installation, S/N 44-7995278 and up)<br><br>The Propeller Type Certification standard includes that of FAA TCDS P-920 (see UK Reg (EU) No. 748/2012 Article 3, para 1(a)) |
| Propeller 2: | For aeroplane S/Ns 44-7995001 through 44-8195026 only:<br>1 Hartzell, Hub HC-C3YR-2EUF, Blade Model FC7663-5R (LH propeller)<br>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),<br>Hartzell P/N C4558 Spinner Assy (RH),<br>see note 9.                                                                                                                                                                                                                                                                                                 |
| Governor:    | 1 Hartzell Hydraulic Governor Model E-3-2 (LH),<br>1 Hartzell Hydraulic Governor Model E-3-2L (RH); or<br>1 Hartzell Hydraulic Governor Model E-8-2L (RH) with synchrophaser (Piper Drawing No. 36889 Synchrophaser Installation, S/N 44-7995278 and up)<br><br>The Propeller Type Certification standard includes that of FAA TCDS P25EA (see UK Reg (EU) No. 748/2012 Article 3, para 1(a)) |
| Propeller 3: | For aeroplane S/Ns 4495001 through 4495013, and 4496001 and up only:<br>1 Hartzell, Hub HC-C2Y(K, R) -2CEUF, Blade Model C7666A-2R (LH propeller)<br>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 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 Propeller Type Certification standard includes that of FAA  
TCDS P-920 (see UK Reg (EU) No. 748/2012 Article 3, para 1(a))

## 22. Fluids

Fuel: 100/100LL minimum grade aviation gasoline  
Oil: In accordance with latest revision of Lycoming SI 1014

## 23. Fluid Capacities

Fuel: Total: 416 Liters (110 US gal) in 2 nacelle tanks  
Useable: 408 Liters (108 US gal) in 2 nacelle tanks

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 only:  
Maximum: 7.6 Liters (8 qts)  
Minimum: 1.9 Liters (2 qts)

## 24. Air Speeds

|                                                     |          |
|-----------------------------------------------------|----------|
| Design Manoeuvring Speed $V_A$<br>(1724kg (3800lb)) | 135 KIAS |
| Design Manoeuvring Speed $V_A$<br>(1225kg (2700lb)) | 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  |

## 25. Approved Operations Capability

VFR Day and Night  
IFR Day and Night

**26. Maximum Masses**

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

**27. Centre of Gravity Range (gear extended)**

Linear variation between given points:

| <b>Weight<br/>Kg (lb)</b> | <b>Fwd. Limit<br/>m (in) aft of datum</b> | <b>Aft Limit<br/>m (in) aft of datum</b> |
|---------------------------|-------------------------------------------|------------------------------------------|
| 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 Note 3.

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

**28. Datum**

1.99 m (78.4") forward of wing leading edge at WS 106

**29. Levelling Means**

Two screws at the left side fuselage below window

**30. Minimum Flight Crew**

1 (Pilot)

**31. Maximum Passenger Seating Capacity**

3, for passenger seating locations see applicable AFM/POH

**32. Baggage/Cargo Compartments**

91 kg (200 lb) at 3.627m (+142.8 in)

**33. Wheels and Tyres**

Nose Wheel Tyre Size: 5.00x5, 6 ply

Main Wheel Tyre Size: 6.00x6, 8 ply

**34. Control Surface Movements**

For approved control surface deflections see applicable Airplane Maintenance Manual.

**IV. Operating and Service Instructions****35. Airplane Flight Manual AFM and Pilot's Operating Handbook (POH):**

- 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.
- 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.
- 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.
- 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
  - h) ODA-510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report VB -2636, Rev 08 or later approved for SN4496471, 4496498, 4496502 and up, when Garmin G5 Standby instrument is installed by Piper Drawing Number 107600-002 or 107600-003

### **36. 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

## 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 the UK the 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 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 UK.TC.A.00021 or UK noise database for light propeller driven aeroplanes, latest revision.

### 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),

For aircraft equipped with Piper factory installed Garmin G5 Standby Instrument 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:

CS 23 Amendment 3:

23.25(a)(b), 23.29, 23.251(a), 23.301(a), 23.303, 23.305, 23.307(a), 23.337(a)(b), 23.561(a)(b)(3)(c), 23.601, 23.603, 23.605(a), 23.607(b), 23.613(a)(b), 23.771(a), 23.773(a)(2), 23.777(a)(b), 23.853(a), 23.1301(a)(b)(c), 23.1303(a)(b)(f), 23.1309(a)(1)(2)(b)(1)(e), 23.1311(a)(1)(2)(3)(6)(7)(b), 23.1321(c)(e), 23.1322(a)(e), 23.1323(a)(b)(c), 23.1325(a)(b), 23.1331(a)(b)(1)(c), 23.1351(a)(1)(2)(i), 23.1353(h), 23.1357(a)(b)(c)(d), 23.1359, 23.1365(a)(b)(c)(d)(e), 23.1381(a)(b), 23.1431(a)(b), 23.1529, 23.1541(a)(b), 23.1543(b), 23.1545(a)(b)(c), 23.1555(a)(b), 23.1581(a)(b)(d)(f), 23.1583(m), 23.1585(a).

CS 23 Amendment 5:

23.2515(a)(b), 23.2520(a)(b)

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                 |
| c) Factory Installed Garmin GFC700 AFCS Option: | Piper Top Drawing 107600-001             |
| d) Factory Installed Garmin G1000 NXi:          | Piper Top Drawing 107600-002, 107600-003 |
| e) Factory Installed Garmin G5:                 | Piper Top Drawing 107600-002, 107600-003 |

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 2b in III.20 only in combination with Propeller 3 in III.6.3

## Section 2 PA-44-180T (Turbo Seminole)

### I. General

#### 1. Type / Variant or Model

Type: PA-44  
Variant or Model: PA-44-180T (Turbo Seminole)

2. **Airworthiness Category** Normal Category

#### 3. Type Certificate Holder

Piper Aircraft, Inc.  
2926 Piper Drive  
Vero Beach,  
Florida 32960  
United States of America

#### 4. EASA Type Certification Application Date

N/A

5. **State of Design Authority** FAA

#### 6. State of Design Auth. Type Certification Date

29 November 1979

#### 7. UK Type Certification Date

28 September 2003 (see UK Reg (EU) No. 748/2012 Article 3, para 1(a))

### II. Certification Basis

#### 8. Reference Date for determining the applicable requirements

Date of application for FAA TC for Model PA-44-180T  
(Turbo Seminole)  
06 September 1978

#### 9. Airworthiness Requirements

FAR 23 for the basic PA-44-180T (Turbo Seminole) aeroplane (for applicable amendments see note 6)

10. **Requirements elected to comply** None

11. **Special Conditions** None

12. **Exemptions** None

13. **Deviations** None

14. **Equivalent Safety Findings** None

15. **Environmental Protection** ICAO Annex 16, Volume 1 (see TCDSN for further detail)

### III. Technical Characteristic and Operating Limitations

16. Type Design Definition Piper report number VB-1052

17. Description

Twin engine reciprocating, turbo charged, all-metal, four-place, unpressurized, low-wing aeroplane, retractable tricycle landing gear.

18. Equipment

For approved equipment, see available AFM/POH, section 6.  
(For applicable AFM/POH see Section IV).

19. 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 ft <sup>2</sup> ) |

20. Engines

Engine: 1 Lycoming TO-360-E1A6D, carburetor setting 10-5256, (LH engine),  
1 Lycoming LTO-360-E1A6D, carburetor setting 10-5256, (RH engine).

The Engine Type Certification standard includes that of FAA TCDS E26EA ((see UK Reg (EU) No. 748/2012 Article 3, para 1(a))

Engine Limits:

For all operations:

36.5 inHg @ 2575 (180HP)

For other powerplant limitations refer to the applicable AFM/POH, section 2.

21. Propellers:

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),  
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 Propeller Type Certification standard includes that of FAA TCDS P-920 (see UK Reg (EU) No. 748/2012 Article 3, para 1(a))

**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  $82.0^{\circ} \pm 1^{\circ}$ , Low  $11.2^{\circ} \pm 0.1^{\circ}$ , 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),

**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 Propeller Type Certification standard includes that of FAA TCDS P25EA (see UK Reg (EU) No. 748/2012 Article 3, para 1(a))

**22. Fluids**

**Fuel:** 100/100LL minimum grade aviation gasoline

**Oil:** In accordance with latest revision of Lycoming SI 1014

## 23. Fluid Capacities

Fuel: Total: 416 Liters (110 US gal) in 2 nacelle tanks  
Useable: 408 Liters (108 US gal) in 2 nacelle tanks

Oil (per engine):

Maximum: 5.7 Liters (6 qts)

Minimum: 1.9 Liters (2 qts)

## 24. Air Speeds

Design Manoeuvring Speed  $V_A$  137 KIAS  
(1780kg (3925lb))

Design Manoeuvring Speed  $V_A$  112 KIAS  
(1225kg (2700lb))

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

## 25. Approved Operations Capability

VFR Day and Night

IFR Day and Night

## 26. Maximum Masses

Ramp: 1789 kg (3943 lb)

Take-off: 1780 kg (3925 lb)

Landing: 1724 kg (3800 lb)

## 27. Centre of Gravity Range (gear extended)

Linear variation between given points:

| Weight<br>Kg (lb) | Fwd. Limit<br>m (in) aft of datum | Aft Limit<br>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 Note 3.

- 28. Datum**  
1.99 m (78.4") forward of wing leading edge at WS 106
- 29. Levelling Means**  
Two screws at the left side fuselage below window
- 30. Minimum Flight Crew**  
1 (Pilot)
- 31. Maximum Passenger Seating Capacity**  
3, for passenger seating locations see applicable AFM/POH
- 32. Baggage/Cargo Compartments**  
91 kg (200 lb) at 3.627m (+142.8 in)
- 33. Wheels and Tyres**  
Nose Wheel Tyre Size: 5.00x5, 6 ply  
Main Wheel Tyre Size: 6.00x6, 8 ply
- 34. Control Surface Movements**  
For approved control surface deflections see applicable Airplane Maintenance Manual.
- IV. Operating and Service Instructions**
- 35. 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.
- 36. Airplane Maintenance Manual (AMM)**  
P/N 761-664, latest approved revision, for S/N 44-8107001 through 44-8207020

## V. Notes

1. Applicable Manufacturer's S/N: 44-8107001 through 44-8207020
2. Approved Noise Levels:  
See TCDSN UK.TC.A.00021 or UK noise database for light propeller driven aeroplanes, latest revision.
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.

## Section 3 Administration

### I. Acronyms and Abbreviations

| Acronym /<br>Abbreviation | Definition                  |
|---------------------------|-----------------------------|
| TC                        | Type Certificate            |
| TCDS                      | Type Certificate Data Sheet |
| TCH                       | Type Certificate Holder     |

## II. Type Certificate Holder Record

(and Manufacturer Record)

| TCH Record                                                                              | Period               |
|-----------------------------------------------------------------------------------------|----------------------|
| Piper Aircraft, Inc.<br>2926 Piper Drive<br>Vero Beach, Florida 32960<br>U.S.A.         | Present. No changes. |
| The New Piper Aircraft, Inc.<br>2926 Piper Drive<br>Vero Beach, Florida 32960<br>U.S.A. | Until August 7, 2006 |
| Piper Aircraft Corporation<br>Lock Haven, Pennsylvania/Vero Beach Florida<br>U.S.A.     | Until 1995           |

## III. Amendment Record

| TCDS Issue No. | TCDS Issue Date | Changes                                                                                                                                          | TC Issue and Date      |
|----------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 1              | 07 Feb 2022     | This TCDS supersedes EASA TCDS EASA.IM.A.232 Issue 4. All technical data as per EASA.IM.A.232 Issue 5. Introduction of G5 Installation approval. | Issue 1<br>07 Feb 2022 |

– END –