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# TYPE-CERTIFICATE DATA SHEET

**No. EASA.IM.A.077**

**for  
Piper PA-46**

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

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

For Models: PA-46-310P (Malibu)  
PA-46-350P (Malibu Mirage)  
PA-46-500TP (Malibu Meridian)  
PA-46R-350T (Malibu Matrix)  
PA-46-600TP (M600)



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## **SECTION A:      Model PA-46-310P (Malibu)**

### **A.I.      General**

- |   |   |
|---|---|
| 1. a) Type:                             | PA-46   |
| b) Model:                               | PA-46-310P  |
| 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:             | 27 September 1983   |
| 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 - 22 August, 1979  |
| 2. (Reserved)  |   |
| 3. (Reserved)  |   |
| 4. Certification Basis:  | FAR Part 23, effective 1 February 1965, as amended by Amendment 23-25, effective 6 March 1980; FAR 25.783(e) as amended by Amendment 25-54, effective 14 October 1980; FAR 25.831(c) and (d) as amended by Amendment 25-41, effective 1 September 1977; |
| 5. Airworthiness Requirements:                                 | FAR 23 (for applicable amendments see A.II.4)   |
| 6. Requirements elected to comply:                             | None  |
| 7. Special Conditions:   | No. 23-ACE-53, Docket No. 082CE   |
| 8. Exemption:  | None  |
| 9. Equivalent Safety Findings:                                 | None  |
| 10. Environmental Standards:                                   | ICAO Annex 16, Volume 1, Chapter 6  |



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

1. Type Design Definition: New Piper Report number VB-1192
2. Description: Single engine turbo-charged, all-metal, six-place, pressurized, low wing airplane, retractable tricycle landing gear.
3. Equipment: For minimum equipment required by certification see applicable AFM/POH, section 2.  
For approved additional equipment, see applicable AFM/POH, section 6.  
(For applicable AFM/POH see A.IV.).
4. Dimensions:

Span	13.11 m (43.0 ft)
Length	8.81 m (28.9 ft)
Height	3.44 m (11.3 ft)
Wing Area	16.30 m <sup>2</sup> (175 sqf)
5. Engines: 1 Teledyne Continental TSIO-520-BE  
  
The EASA Engine Type Certification standard includes that of FAA TCDS E8CE (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1.(a))
  - 5.1 Engine Limits: For all operation:  
2600 RPM and 38" Hg MAP (310 HP), sea level to 24,000 ft  
2600 RPM and 35" Hg MAP above 24,000 ft.  
  
2400 RPM and 31" Hg MAP maximum when leaned to 50° F lean of peak, any altitude.  
  
For other powerplant limitations refer to the applicable AFM/POH, section 2.
6. Propellers: Hartzell, Hub BHC-C2YF-1BF, Blade F8052( )

Pitch:	High 38.0°±1°, Low 16.0°±0.2° at 0.762 m (30") station.
Diameter:	Not over 2.032 m (80"), not under 1.981 m (78").
Spinner:	Hartzell D-4810 or D-4810P.
Governor:	Hartzell Model E-5-2.

  
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))
7. Fluids:
  - 7.1 Fuel: 100/100LL minimum grade aviation gasoline, for alternate fuels see TCM M77-3
  - 7.2 Engine Oil: in accordance with latest revision of TCM SIL99-2
8. Fluid capacities:

8.1 Fuel:	Total: 462 liters (122 US gal) in 2 wing tanks
	Usable: 454 liters (120 US gal) in 2 wing tanks
8.2.Oil:	Maximum: 7.6 liters (8 qts)
	Minimum: 3.3 liters (3.5 qts)



9. Air Speeds:

Design Manoeuvring Speed, $v_A$ (1860 kg (4100 lb))	135 KIAS
Design Manoeuvring Speed, $v_A$ (1111 kg (2450 lb))	103 KIAS
Never Exceed Speed $v_{NE}$	203 KIAS
Maximum Structural Cruising Speed, $v_{NO}$	173 KIAS
Maximum Flap Extend Speed, $v_{FE}$	120 KIAS
Maximum Landing Gear Operating Speed, $v_{LO}$	
Extension	170 KIAS
Retraction	130 KIAS
Maximum Landing Gear Extended Speed, $v_{LE}$	200 KIAS

10. Maximum Operating Altitude: 7620 m (25,000 ft)

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

12. Maximum Masses: Ramp: 1868 kg (4118 lb)  
Take-Off: 1860 kg (4100 lb)  
Landing: 1769 kg (3900 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
1860 (4100)	3.640 (143.3)	3.736 (147.1)
1669 (3680)	3.457 (136.1)	3.736 (147.1)
1111 (2450) or less	3.320 (130.7)	3.736 (147.1)

see also A.V. note 3

14. Datum: 2.54 m (100") forward of forward pressure bulkhead.

15. (Reserved)

16. Levelling Means: Top or bottom fuselage at B.L. 0 (constant section).

17. Minimum Flight Crew: 1 (Pilot)

18. Max. Passenger Seating Capacity: 5, for passenger seating locations see applicable AFM/POH.

19. Baggage / Cargo Compartments: 45 kg (100 lb) at +2.250 m (+88.6) (fwd.)  
45 kg (100 lb) at +6.305 m (+248.23) (aft)

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. Maximum Cabin Operating Pressure Differential: 38.67 kPa (5.5 PSID)

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) DOA No. SO-1 approved Airplane Flight Manual Piper Report FT 157, Appendix D or Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1200, latest approved revision, for Model PA-46-310P, S/N 46-8408001 through 46-8608067, and 4608001 through 4608007.
- b) DOA No. SO-1 approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1300, latest approved revision, for Model PA-46-310P, S/N 4608008 through 4608140.

Airplane Maintenance Manual (AMM) P/N 761-783, latest approved revision (for all S/Ns)

Service Bulletins and Service Letters

#### **A.V. Notes**

1. Applicable Manufacturer's S/N:  
46-8408001 through 46-8408087, 46-8508001 through 46-8508109, 46-8608001 through 46-8608067, 4608001 through 4608140.
2. Approved Noise Levels:  
see EASA TCDSN IM.A.077
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 certified 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: 5.44 kg (12 lb), at +3.870 m (+152.37 in)  
Oil: 1.27 kg (2.8 lb), at +1.359 m (+53.5 in)

4. Placards:  
All placards required in the POH and AFM must be installed in the appropriate locations. The following placard must be displayed in clear view of the pilot:  
"The markings and placards installed in this airplane contain operating limitations which must be complied with when operating this airplane in the Normal Category. Other operating limitations which must be complied with when operating this airplane in this category are contained in the Airplane Flight Manual.  
No aerobatics maneuvers, including spins, approved."
5. Life Limitations (see also AMM, chapter 5-10-00):  
The life limit of the fuselage assembly, P/N 82250, is 10,145 hours time-in-service.  
The life limit of the wing assembly, P/N 83100, is 15,580 hours time-in-service.





## **SECTION B: Model PA-46-350P (Malibu Mirage)**

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

- |   |   |
|---|---|
| 1. a) Type:                             | PA-46   |
| b) Model:                               | PA-46-350P  |
| 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:             | 30 August 1988  |
| 8. 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 for Model PA-46-350P<br>17 September 1987  |
| 2. (Reserved)  |   |
| 3. (Reserved)  |   |
| 4. Certification Basis:  | <ul style="list-style-type: none"><li>a) For the basic PA-46-350P aeroplane the applicable certification basis is FAR Part 23, effective 1 February 1965, as amended by Amendment 23-25, effective 6 March 1980; FAR 25.783(e) as amended by Amendment 25-54, effective 14 October 1980; FAR 25.831(c) and (d) as amended by Amendment 25-41, effective 1 September 1977;</li><li>b) For PA-46-350P aeroplanes equipped with the factory installed Avidyne Entegra System the additional certification basis for installation specific items only is CS-23 as defined in CRI-A01, issue 1, or later revision (for details on applicable paragraphs see B.V., note 7).</li><li>c) For PA-46-350P aeroplanes equipped with the factory installed G1000 integrated avionics and GFC700 AFCS option the additional certification basis for installation specific items only is CS-23 as defined in CRI-A01, issue 5, or later revision (for details on applicable paragraphs see B.V., note 9).</li><li>d) For PA-46-350P aeroplanes equipped with the factory installed HC-I3Y1R-1N/N7605K+2 or N7605CK+2 propeller the additional certification basis for installation specific items only is CS-23 as defined in CRI-A01, issue 5, or later revision (for details on applicable paragraphs see B.V., note 10).</li></ul> |



- e) For PA-46-350P aeroplanes equipped with the factory installed G1000 Phase III option the additional certification basis for installation specific items only is CS-23 as defined in CRI-A01 (for details on applicable paragraphs see B.V., note 11).
- f) For PA-46-350P aeroplanes equipped with the factory installed G1000 NXI Integrated Avionics, the additional certification basis for installation specific items only is CS-23 as defined in CRI-A01 (for details on applicable paragraphs see B.V., note 12).

5. Airworthiness Requirements:

- a) FAR 23 for the basic PA-46-350P aeroplane (for applicable amendments see B.II.4.a))
- b) FAR 23 and CS-23 for PA-46-350P aeroplanes equipped with the factory installed Avidyne Entegra System (for applicable amendments see B.II.4.b))
- c) FAR 23 and CS-23 for PA-46-350P aeroplanes equipped with the factory installed G1000 integrated avionics and GFC700 AFCS option (for applicable amendments see B.II.4.c))
- d) FAR 23 and CS-23 for PA-46-350P aeroplanes equipped with the factory installed HC-13Y1R-1N/N7605K+2 or N7605CK+2 propeller (for applicable amendments see B.II.4.d))
- e) FAR 23 and CS-23 for PA-46-350P aeroplanes equipped with the factory installed G1000 Phase III option (for applicable amendments see B.II.4.e))
- f) FAR 23 and CS-23 for PA-46-350P aeroplanes equipped with the factory installed G1000 NXI Integrated Avionics option (for applicable amendments see B.II.4.f))

6. Requirements elected to comply: None

7. Special Conditions:

- a) No. 23-ACE-53, Docket No. 082CE, for the basic PA-46-350P 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-46-350P aeroplanes equipped with the factory installed Avidyne Entegra System
- c) CRI-F01, issue 3 or later revision, Protection from the Effects of HIRF  
CRI-F02, issue 3 or later revision, Protection from the Effects of Lightning Strike; Indirect Effects,  
CRI-F05, issue 3 or later revision, Human Factors in Integrated Avionic Systems,  
for PA-46-350P aeroplanes equipped with the factory installed G1000 integrated avionics and GFC700 AFCS option.
- 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-46-350P



- aeroplanes equipped with the factory installed Garmin G1000 Phase III option
- e) CRI F-14 Electronic Stability and Protection (ESP), CRI-F05, issue 3 or later revision, Human Factors in Integrated Avionic Systems, 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), CRI F-90, Security Protection of Aircraft Systems and Networks For PA-46-350P aeroplanes equipped with the factory installed Garmin G1000 NXI Integrated Avionics
8. Exemption: None
9. Equivalent Safety Findings:
- a) None for the basic PA-46-350P aeroplane,
- b) CRI-F03, Power Plant Instruments, for PA-46-350P aeroplanes equipped with the factory installed Avidyne Entegra System
- c) CRI-F03, issue 2 or later revision, Powerplant Instruments, for PA-46-350P aeroplanes equipped with the factory installed G1000 integrated avionics and GFC700 AFCS option.
- d) CRI F-201, Flight Instruments, Stabilized Magnetic Compass, CRI F-203, Power Plant Instruments, Fuel Flow Indication, for PA-46-350P (Malibu Meridian) aeroplanes equipped with the factory installed Garmin G1000 Phase III option
- e) CRI F-201, Flight Instruments, Stabilized Magnetic Compass, CRI F-203, Power Plant Instruments, Fuel Flow Indication, for PA-46-350P (Malibu Meridian) aeroplanes equipped with the factory installed Garmin G1000 NXI Integrated Avionics
- 10.Environmental Standards: ICAO Annex 16, Volume 1, Chapter 6 if equipped with HC-I2YR-1BF/F8074 propeller (2-bladed)
- ICAO Annex 16, Volume 1, Chapter 10 if equipped with HC-I3YR-1E/7890K propeller (3-bladed)
- ICAO Annex 16, Volume 1, Chapter 10, Amendment 9, if equipped with HC-I3Y1R-1N/N7605K+2 or N7605CK+2 propeller (3-bladed)
- 11.Operational Suitability Data (OSD)  
Master Minimum Equipment List: CS-GEN-MMEL, initial issue

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

1. Type Design Definition: New Piper Report number VB-1343  
For TDD of TCDS relevant changes see B.V., Note 8.
2. Description: Single engine turbo-charged, all-metal, six-place, pressurized, low wing airplane, retractable tricycle landing gear.



3. Equipment: For minimum equipment required by certification see applicable AFM/POH, section 2.  
For approved additional equipment, see applicable AFM/POH, section 6.  
(For applicable AFM/POH see B.IV.).
4. Dimensions:
- |           |                                |
|-----------|--------------------------------|
| Span      | 13.11 m (43.0 ft)              |
| Length    | 8.81 m (28.9 ft)               |
| Height    | 3.44 m (11.3 ft)               |
| Wing Area | 16.30 m <sup>2</sup> (175 sqf) |
5. Engines: 1 Textron Lycoming TIO-540-AE2A
- The EASA Engine Type Certification standard includes that of FAA TCDS E14EA (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))
- 5.1 Engine Limits: For all operation:  
2500 RPM and 42" Hg MAP (350hp), sea level to 20,600 ft,  
42-1.6" Hg MAP decrease per each 1000ft altitude increase,  
20,600 ft to 25,000 ft  
For other powerplant limitations refer to the applicable AFM/POH, section 2.
6. Propellers:
- 6.1 Propeller 1: Hartzell, Hub HC-I2YR-1BF, Blade F8074 (standard 2-blade) (S/N 4622001 through 4622200, and 4636001 through 4636195)
- |           |  |
|-----------|--|
| Pitch:    | High 40.5°± 0.5°, Low 17.6°± 0.2°, at 0.762 (30") station. |
| Diameter: | Not over 2.032 m (80"), not under 2.007 m (79").           |
| Spinner:  | Hartzell A-2298-3P.  |
| Governor: | Hartzell Model V-5-2 or V-11-1                             |
- The following limitation is applicable to the two-bladed aluminium propeller installation:  
Do not exceed 36" MAP below 2400 RPM  
Do not exceed 32" MAP below 2300 RPM
- 6.2 Propeller 2: Hartzell, Hub HC-I3YR-1E, Blade 7890K (3-blade) (S/N 4636132 and up)
- |           |   |
|-----------|---|
| Pitch:    | High 38.7°±0.5°, Low 13.65°± 0.15°, at 0.762 m (30") station. |
| Diameter: | 2.032 m (80")   |
| Spinner:  | Hartzell D-6750P.   |
| Governor: | Hartzell Model V-5-2 or V-11-1                                |
- The EASA Propeller Type Certification standard includes that of FAA TCDS P42GL and P33EA (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))
- 6.3 Propeller 3: Hartzell, Hub HC-I3Y1R-1N/N7605K+2 or N7605CK+2 propeller (3-bladed) (S/N 4636460, S/N 4636462 and up)
- |           |   |
|-----------|---|
| Pitch:    | High 38.0°±1.0°, Low 14.0°± 0.2°, at 0.762 m (30") station. |
| Diameter: | 2.032 m (80")   |
| Spinner:  | Hartzell D-6750-1P.   |
| Governor: | Hartzell Model V-5-2, V-11-1 or S-1-30                      |

EASA Type Certificate Data Sheet, EASA.IM.P.132



7. Fluids:

7.1 Fuel:

100/100LL minimum grade aviation gasoline, for alternate fuels see latest revision of Lycoming SI 1070

7.2 Engine Oil:

in accordance with latest revision of Lycoming SI 1014

8. Fluid capacities:

8.1 Fuel:

Total: 462 liters (122 US gal) in 2 wing tanks

Usable: 454 liters (120 US gal) in 2 wing tanks

8.2. Oil:

Maximum: 11.4 liters (12 qts)

Minimum: 2.6 liters (2.75 qts)



9. Air Speeds:

Design Manoeuvring Speed, $v_A$ (1950 kg (4300 lb) for S/N 4636196 and up:	133 KIAS
Design Manoeuvring Speed, $v_A$ (1968 kg (4340 lb)	133 KIAS
Design Manoeuvring Speed, $v_A$ (1111 kg (2450 lb)	100 KIAS
Never Exceed Speed $v_{NE}$	198 KIAS
Maximum Structural Cruising Speed, $v_{NO}$	168 KIAS
Maximum Flap Extend Speed, $v_{FE}$	116 KIAS
Maximum Landing Gear Operating Speed, $v_{LO}$	
Extension	165 KIAS
Retraction	126 KIAS
Maximum Landing Gear Extended Speed, $v_{LE}$	195 KIAS

10. Maximum Operating Altitude: 7620 m (25,000 ft)

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

12. Maximum Masses:

Ramp:	1958 kg (4318 lb)
Take-Off:	1950 kg (4300 lb)
Landing:	1860 kg (4100 lb)

for S/N 4636196 and up:

Ramp:	1977 kg (4358 lb)
Take-Off:	1968 kg (4340 lb)
Landing:	1871 kg (4123 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
1950 (4300)	3.640 (143.3)	3.736 (147.1)
1860 (4100)	3.533 (139.1)	3.736 (147.1)
1815 (4000)	3.480 (137.0)	3.721 (146.5)
1111 (2450)	3.320 (130.7)	3.495 (137.6)
1089 (2400)	3.320 (130.7)	3.487 (137.3)

see also B.V. note 3

for S/N 4636196 and up:

linear variation between given points

Weight kg (lb)	Fwd. Limit m (in) aft of datum	Aft Limit m (in) aft of datum
1968 (4340)	3.660 (144.1)	3.736 (147.1)
1871 (4123)	3.546 (139.6)	3.736 (147.1)
1815 (4000)	3.480 (137.0)	3.721 (146.5)
1111 (2450)	3.320 (130.7)	3.495 (137.6)
1089 (2400)	3.320 (130.7)	3.487 (137.3)

see also B.V. note 3

14. Datum: 2.54 m (100") forward of forward pressure bulkhead.



15.(Reserved)	
16.Levelling Means:	Top or bottom fuselage at B.L. 0 (constant section).
17.Minimum Flight Crew:	1 (Pilot)
18.Max. Passenger Seating Capacity:	5, for passenger seating locations see applicable AFM/POH.
19. Baggage / Cargo Compartments:	45 kg (100 lb) at +2.250 m (+88.6 in) (fwd.) 45 kg (100 lb) at +6.305 m (+248.23 in) (aft)
20.Wheels and Tyres:	
20.1Nose Wheel Tyre Size	5.00x5, 6 ply
20.2Main Wheel Tyre Size	6.00x6, 8 ply
21.Maximum Cabin Operating Pressure Differential:	38.67 kPa (5.5 PSID)
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) DOA No. SO-1 approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1332 for Model PA-46-350P, S/N 4622001 through 4622200.
- b) DOA No. SO-1 approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1609 for Model PA-46-350P, S/N 4636001 through 4636020.
- c) DOA No. SO-1 approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1602 for Model PA-46-350P, S/N 4636021 through 4636131.
- d) DOA No. SO-1 approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1446 for Model PA-46-350P, S/N 4636132 through 4636195. For S/N 4636160 special supplement VB-1855 is required.
- e) DOA No. SO-1 approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1710 for Model PA-46-350P, S/N 4636196 through 4636374.
- f) DOA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1950, revision 2 or later approved revision for Model PA-46-350P S/N's 4636375 and up, equipped with the factory installed Avidyne Entegra option.



- g) ODA No. 510620-CE approved Pilot's Operating Handbook and EASA approved Airplane Flight Manual Report No. VB-2121, revision 2 or later approved revision, for Model PA-46-350P, S/N's 4636460, 4636463 and up, equipped with the factory installed G1000 integrated avionics, GFC700 AFCS system.
- h) ODA No. 510620-CE approved Pilots Operating Handbook and FAA approved Airplane Flight Manual Report VB-2561, rev 4 or later approved revision, for PA-46-350P S/N's 4636633, 4636652 and up when equipped with Garmin G1000 Phase III System and Enviro Cabin Pressure Control System.
- i) ODA No. 510620-CE approved Pilots Operating Handbook and FAA approved Airplane Flight Manual Report VB-2747, rev 2 or later approved revision, for PA-46-350P S/N's 4636716, 4636720 and up when equipped with G1000 NXI Integrated Avionics

Airplane Maintenance Manual (AMM):

- a) P/N 761-783, latest approved revision (S/N 4622001 through 4622200)
- b) P/N 761-876, latest approved revision (S/N 4636001 and up)

Service Bulletins and Service Letters

OSD, MMEL:

EASA MMEL report VB-2803

## **B.V. Notes**

1. Applicable Manufacturer's S/N and certification import requirements:

- a) Basic aeroplane: S/N 4622001 through 4622200, 4636001 and up
- b) Avidyne Entegra option: S/N 4636375 and up
- c) HC-I3Y1R-1N/N7605K+2 or N7605CK+2 option: S/N 4636460, 4636462 and up
- d) G1000/GFC700 option: S/N 4636460, 4636463 and up
- e) G1000/GFC700 Phase III option: S/N 4636633, 4636652 and up
- f) G1000/GFC700 Phase III option: S/N 4636716, 4636720 and up; Aircraft equipped with "PTC" yoke switches for Automatic Speech Recognition (ASR), are not eligible under this TCDS and should contact Piper to obtain information to modify the aeroplane.

2. Approved Noise Levels:  
see EASA TCDSN IM.A.077

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 certified 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: 5.44 kg (12 lb), at +3.870 m (+152.37 in)
- Oil: 1.72 kg (3.8 lb), at +1.549 m (+61.0 in)





4. Placards:

All placards required in the POH and AFM must be installed in the appropriate locations. The following placard must be displayed in clear view of the pilot:

"The markings and placards installed in this airplane contain operating limitations which must be complied with when operating this airplane in the Normal Category. Other operating limitations which must be complied with when operating this airplane in this category are contained in the Airplane Flight Manual.

No aerobatics maneuvers, including spins, approved."

5. Life Limitations (see also AMM, chapter 5-10-00 (P/N 761-783) or chapter 4-00-00 (P/N 761-876):  
The life limit of the fuselage assembly, P/N 89600, is 10,145 hours time-in-service.  
The life limit of the wing assembly, P/N 89640, is 15,580 hours time-in-service.

6. PA-46-350P serial numbers 4636196 and up incorporate additional structural strengthening of the wing landing gear that affects the maximum weights and C.G. range. This accounts for differences with respect to serial numbers 4622001 through 4622200 and 4636001 through 4636195.

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.

CS-23 (basic release):

CS 23.301, 23.303, 23.305, 23.307(a), 23.337, 23.341, 23.473, 23.561(b)(3), 23.561(e), 23.571(a), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.627, 23.771(a), 23.773(a)(2), 23.777(a), 23.777(b), 23.867(b), 23.1301, 23.1303, 23.1305, 23.1307, 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, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1549, 23.1555, 23.1563, 23.1581, 23.1583, 23.1585

8. Type Design Definition of TCDS relevant changes:

a) Factory installed Avidyne Entegra option:	VB-1954
b) Factory installed G1000 integrated avionics and GFC700 option:	VB-2092
c) Factory installed HC-I3Y1R-1N/N7605( )+2 propeller option:	VB-2132
d) Factory installed G1000/GFC700 Phase III option:	Top Dwg No.106800-003
e) Factory installed G1000 NXi option:	Top Dwg No. 106800-004 as modified by drawing 85440

9. In addition to the certification basis defined in CRI-A01, latest revision, the applicable paragraphs for the factory installation of the G1000 integrated avionics and GFC700 AFCS option in the PA-46-350P are listed below.

CS-23 (basic release):

CS 23.21, 23.23, 23.25, 23.29, 23.251, 23.301(a), (b), (c), 23.303, 23.305, 23.307, 23.337, 23.341(a), (c), 23.391, 23.395(a), 23.397(a), 23.473, 23.561(a), (b)(3), (e), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.619, 23.625, 23.627, 23.671, 23.677(b), (d), 23.681, 23.683, 23.685, 23.689, 23.693, 23.771(a), 23.773(a)(1), (a)(2), 23.777(a), (b), (d), 23.841(b)(5), (6), 23.867, 23.1141(a), (b), (c), (d), 23.1301(a), (b), (c), (d), 23.1303 (a), (b), (c), (f), 23.1305(a)(1), (a)(2), (a)(3), (b)(2), (b)(5), (b)(6)(i), 23.1309(a)(1), (a)(2), (b), (c), (e), 23.1311(a)(1), (a)(2), (a)(3), (a)(4), (a)(5), (a)(6), (a)(7), (b), (c), 23.1321(a), (c), (d)(5), (e), 23.1322(a), (b), (c), (d), (e), 23.1323(a), (c), 23.1325(a), (b)(1), (b)(2)(ii), 23.1326, 23.1327, 23.1329(a)(1), (b), (d), (e), (f), (g), (h), 23.1331(a), (b), (c), 23.1335, 23.1337(b)(1), (b)(4), 23.1351(a)(1), (a)(2)(i), (b)(1)(i), 23.1353(h), 23.1357(a)(2), (b), (c), (d), 23.1359(c), 23.1365(a), (b), (c), (d), (f), 23.1367(a), (b), (c), (d), 23.1381(a), (b), (c), 23.1419, 23.1431(a), (b), (e), 23.1501, 23.1507, 23.1523, 23.1525, 23.1529, 23.1541(a)(1), (b), 23.1543(b), (c), 23.1545(a), (b)(1), (b)(2), (b)(3), (b)(4), 23.1547, 23.1549(a), (b), (c), 23.1553, 23.1555(a), (b), (d)(2), 23.1559(c), 23.1563(a), (b), 23.1567(a), 23.1581, 23.1583, 23.1585, 23.1587, 23.1589



10. In addition to the certification basis defined in CRI-A01, latest revision, the applicable paragraphs for the factory installation HC-I3Y1R-1N/N7605K+2 or N7605CK+2 propeller option in the PA-46-350P are listed below.

CS-23 (basic release):

CS 23.21, 23.23, 23.25, 23.29, 23.33, 23.45, 23.49, 23.51, 23.65, 23.75, 23.77, 23.141, 23.143, 23.145, 23.147, 23.153, 23.155, 23.157, 23.161, 23.171, 23.173, 23.175, 23.177, 23.181, 23.201, 23.203, 23.207, 23.221, 23.231, 23.233, 23.235, 23.237, 23.239, 23.251, 23.301, 23.303, 23.305, 23.307, 23.321, 23.331, 23.333, 23.337, 23.341, 23.351, 23.361, 23.363, 23.371, 23.471, 23.473, 23.479, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.621, 23.623, 23.625, 23.627, 23.629, 23.901, 23.905(b), (d), 23.907, 23.925, 23.929, 23.939, 23.1041, 23.1043, 23.1047, 23.1301, 23.1309(a), (c), 23.1351(a), (b)(1)(i), 23.1357(a), (b), (c), (d), 23.1365(a), (b), 23.1367, 23.1419, 23.1431, 23.1501, 23.1521, 23.1529, 23.1541, 23.1549, 23.1559, 23.1581, 23.1583, 23.1585, 23.1587

11. In addition to the certification basis defined in CRI-A01, latest revision, the applicable paragraphs for the factory installation of the Garmin G1000/GFC700 Phase III option are listed below.

CS-23, Amendment 3:

23.21, 23.23(a), 23.25(a)(b), 23.29, 23.143(a)(b), 23.207(b), 23.251, 23.301(a)(b)(c), 23.303, 23.305, 23.307, 23.337, 23.341(a)(c), 23.365(a)(b)(d), 23.473, 23.561(a)(b)(3)(e), 23.571(a), 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)(5)(6)(i), 23.1309(a)(1)(2)(b)(c)(d)(e), 23.1311(a)(1)(2)(3)(4)(5)(6)(7)(b)(c), 23.1321(a)(c)(d)(5)(e), 23.1322(a)(b)(c)(d)(e), 23.1323(a)(c), 23.1325(a)(b)(1)(2)(ii), 23.1326(a)(b), 23.1327(a), 23.1329(d)(e)(h), 23.1335, 23.1337(b)(1)(4), 23.1351(a)(1)(2)(i)(b)(1)(i)(3)(c)(4)(d), 23.1353(a)(b)(c)(d)(e)(h), 23.1357(a)(b)(c)(d), 23.1359(c), 23.1361(a)(c), 23.1365, 23.1367(a)(b)(c)(d), 23.1381(a)(b)(c), 23.1416(c), 23.1419(c), 23.1431(a)(b)(e), 23.1501(a)(b), 23.1523, 23.1525, 23.1529, 23.1541(a)(b), 23.1543(b)(c), 23.1545(a)(b)(1)(2)(3)(4), 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

12. In addition to the certification basis defined in CRI-A01, latest revision, the applicable paragraphs for the factory installation of the Garmin G1000NXI Integrated avionics are listed below. These requirements replace the corresponding requirements of note B.V.11. Note that the G1000 NXi is an upgrade of the G1000 phase III option, so for aeroplanes modified with the G1000 NXi also the applicable certification basis for the G1000 phase III option shall be considered.

CS-23, Amendment 3:

23.23(a)(b)(3), 23.25(a)(b), 23.29, 23.301(a)(b)(c), 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, 23.699, 23.771(a), 23.777(a)(b), 23.867, 23.1301(a)(b)(c)(d), 23.1303(a)(b)(c)(f) 23.1305(a)(1)(2)(3)(b)(2)(4)(i)(5)(6)(i), 23.1309(a)(1)(2)(b)(c)(d)(e), 23.1311(a)(1)(2)(3)(4)(5)(6)(7)(b)(c), 23.1321(a)(c)(d)(5)(e), 23.1322(a)(b)(c)(d)(e), 23.1323(a)(c), 23.1325(a)(b)(1)(2)(ii), 23.1326, 23.1327(a), 23.1329(a)(1)(b)(c)(d)(e)(f)(g)(h), 23.1335, 23.1337(b)(1)(4), 23.1351(a)(1)(2)(i)(c)(4)(d), 23.1353(h), 23.1357(a)(b)(c)(d), 23.1359(c), 23.1365, 23.1367(a)(b)(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) .



## **SECTION C: Model PA-46-500TP (Malibu Meridian)**

### **C.I. General**

- |   |   |
|---|---|
| 1. a) Type:                             | PA-46   |
| b) Model:                               | PA-46-500TP   |
| 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:             | 27 September 2000   |
| 7. EASA Type Certification Date:        | 28 September 2003 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a)) |

### **C.II. Certification Basis**

- |  |  |
|--|--|
| 1. Reference Date for determining the applicable requirements:<br>12 February 1997 | Date of application for FAA TC for Model PA-46-500TP   |
| 2. (Reserved)  |  |
| 3. (Reserved)  |  |
| 4. Certification Basis:  | <ul style="list-style-type: none"><li>a) For the basic PA-46-500TP aeroplane the applicable certification basis is FAR 23. For details on the applicable FAR 23 amendments see C.V., note 6.</li><li>b) For PA-46-500TP aeroplanes equipped with the factory installed Avidyne Entegra System and S-Tec Magic 1500 DFCS Autopilot option the additional certification basis for installation specific items only is CS-23 as defined in CRI-A01, issue 2, or later revision (for details on applicable paragraphs see C.V., note 7).</li><li>c) For PA-46-500TP aeroplanes equipped with the factory installed G1000 integrated avionics and GFC700 AFCS option the additional certification basis for installation specific items only is CS-23 as defined in CRI-A01, issue 4, or later revision (for details on applicable paragraphs see C.V., note 11).</li><li>d) For PA-46-500TP aeroplanes equipped with the factory installed G1000 Phase III option the additional certification basis for installation specific items only is CS-23 as defined in CRI-A01, issue 1, or later revision (for details on applicable paragraphs see C.V., note 12).</li></ul> |



5. Airworthiness Requirements:

- a) FAR 23 for the basic PA-46-500TP aeroplane (for applicable amendments see C.II.4)
- b) FAR 23 and CS-23 for PA-46-500TP aeroplanes equipped with the factory installed Avidyne Entegra System and S-Tec Magic 1500 DFCS option (for applicable amendments see C.II.4)
- c) FAR 23 and CS-23 for PA-46-500TP aeroplanes equipped with the factory installed G1000 integrated avionics and GFC700 AFCS option (for applicable amendments see C.II.4)
- d) FAR 23 and CS-23 for PA-46-500TP aeroplanes equipped with the factory installed G1000 Phase III option (for applicable amendments see C.II.4)

6. Requirements elected to comply: None

7. Special Conditions:

- a) No. 23-096-SC, Docket No. CE153, for the basic PA-46-500TP 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-46-500TP aeroplanes equipped with the factory installed Avidyne Entegra System and S-Tec Magic 1500DFCS option.
- c) 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-46-500TP aeroplanes equipped with the factory installed G1000 integrated avionics and GFC700 AFCS option.
- 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-46-500TP (Malibu Meridian) aeroplanes equipped with the factory installed Garmin G1000 Phase III option

8. Exemption: None

9. Equivalent Safety Findings:

- a) ELOS for 23.955(f)(3), see Certification Base for the basic PA-46-500TP aeroplane
- b) CRI F-201, Flight Instruments, Stabilized Magnetic Compass, for PA-46-500TP (Malibu Meridian) aeroplanes equipped with the factory installed Garmin G1000 Phase III option

10. Environmental Standards:

- a) Noise: ICAO Annex 16, Volume 1, Chapter 10
- b) Fuel Venting: ICAO Annex 16, Volume 2

11. Operational Suitability Data (OSD):

Master Minimum Equipment List: CS-GEN-MMEL, initial issue



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

1. Type Design Definition: New Piper Report number VB-1741  
For TDD of TCDS relevant changes see note 10.
2. Description: Single engine turbopropeller, all-metal, six-place, pressurized, low wing airplane, retractable tricycle landing gear.
3. Equipment: For minimum equipment required by certification see applicable AFM/POH, section 2.  
For approved additional equipment, see applicable AFM/POH, section 6.  
(For applicable AFM/POH see C.IV.).
4. Dimensions:
 

Span	13.11 m (43.0 ft)
Length	9.02 m (29.6 ft)
Height	3.44 m (11.3 ft)
Wing Area	17.00 m <sup>2</sup> (183 sqf)
5. Engines: 1 Pratt & Whitney Canada PT6A-42A  
  
The EASA Engine Type Certification standard includes that of TCCA TCDS E-12 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))
 

5.1 Engine Limits:	Take-off and max continuous power	500 SHP
	Compressor turbine speed (Ng)	39,000 rpm (104%)*
	Propeller speed (Np)	2,205 rpm*

For other powerplant limitations refer to the applicable AFM/POH, section 2, and note 8(\*).
6. Propellers:
 

6.1 Propeller 1:	Hartzell, Hub HC-E4N-3Q, Blade E8501B-3.5
Pitch:	Low 19.0°± 0.1°, at 0.762 (30") station.
Diameter:	Not over 2.096 m (82.5"), not under 2.070 m (81.5").
Spinner:	Hartzell D-630-5P.
Governor:	Woodward Model 210 638

EASA Propeller Type Certificate Data Sheet IM.P.133
7. Fluids:
 

7.1 Fuel:	Jet A and A-1 fuels conforming to Pratt & Whitney Specification 522 or Service Bulletin 3044, CPW204, latest revision. MIL-I-27686 Fuel System Icing Inhibitor or equivalent must be used in the fuel in the amount up to 0.15% by volume.
7.2 Engine and Gearbox Oil:	PWC PT6 Engine Service Bulletin No. 3001 lists approved brand oils.
8. Fluid capacities:
 

8.1 Fuel:	Total: 655 liters (173 US gal) in 2 wing tanks	Usable: 643 liters (170 US gal) in 2 wing tanks
8.2.Oil:	Maximum: 11.4 liters (12 qts)	Minimum: not specified



9. Air Speeds:

Maximum Operating Maneuvring Speed, $v_o$	127 KIAS
Maximum Operating Speed $v_{MO}$	188 KIAS
Maximum Flap Extend Speed (10°), $v_{FE}$	168 KIAS
Maximum Flap Extend Speed (20°), $v_{FE}$	135 KIAS
Maximum Flap Extend Speed (36°), $v_{FE}$	118 KIAS
Maximum Landing Gear Operating Speed, $v_{LO}$	
Extension	168 KIAS
Retraction	129 KIAS
Maximum Landing Gear Extended Speed, $v_{LE}$	168 KIAS

10. Maximum Operating Altitude: 9144 m (30,000 ft)

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

12. Maximum Masses:

for S/N 4697001, 4697003 through 4697156:

Ramp:	2220 kg (4892 lb)
Take-Off:	2200 kg (4850 lb)
Landing:	2200 kg (4850 lb)

for S/N 4697157 and up and earlier aeroplanes having kit 767-360 installed:

Ramp:	2329 kg (5134 lb)
Take-Off:	2310 kg (5092 lb)
Landing:	2200 kg (4850 lb)
Max. Zero Fuel weight:	2200 kg (4850 lb)

For reduced MTOW see C.V., note 9.

13. Centre of Gravity Range (gear extended):

for S/N 4697001, 4697003 through 4697156:

linear variation between given points

Weight kg (lb)	Fwd. Limit m (in) aft of datum	Aft Limit m (in) aft of datum
2220 (4892)	3.562 (140.22)	3.736 (147.10)
2200 (4850)	3.558 (140.06)	3.736 (147.10)
1860 (4100)	3.486 (137.23)	3.736 (147.10)
1592 (3508)	3.429 (135.00)	3.649 (143.67)
1361 (3000)	3.429 (135.00)	3.575 (140.75)

see also C.V. note 3

for S/N 4697157 and up and earlier aeroplanes having kit 767-360 installed:

linear variation between given points

Weight kg (lb)	Fwd. Limit m (in) aft of datum	Aft Limit m (in) aft of datum
2329 (5134)	3.585 (141.13)	3.736 (147.10)
2310 (5092)	3.581 (140.97)	3.736 (147.10)
2220 (4892)	3.562 (140.22)	3.736 (147.10)
2200 (4850)	3.558 (140.06)	3.736 (147.10)
1860 (4100)	3.486 (137.23)	3.736 (147.10)
1592 (3508)	3.429 (135.00)	3.649 (143.67)
1361 (3000)	3.429 (135.00)	3.575 (140.75)

see also C.V. note 3



14. Datum:	2.54 m (100") forward of forward pressure bulkhead.
15. (Reserved)	
16. Levelling Means:	Top or bottom fuselage at B.L. 0 (constant section).
17. Minimum Flight Crew:	1 (Pilot)
18. Max. Passenger Seating Capacity:	5, for passenger seating locations see applicable AFM/POH
19. Baggage / Cargo Compartments:	45 kg (100 lb) at +6.305 m (+248.23 in)
20. Wheels and Tyres:	
20.1 Nose Wheel Tyre Size	5.00x5, 6 ply (S/N 4697001, 4697003 through S/N 4697125 not modified in accordance with SB 1106)
	5.00x5, 8 ply (S/N 4697126 and up or previous S/N modified in accordance with SB 1106)
20.2 Main Wheel Tyre Size	6.00x6, 8 ply
21. Maximum Cabin Operating Pressure Differential:	38.67 kPa (5.5 PSID)
22. Control Surface Movements:	For approved control surface deflections see applicable Airplane Maintenance Manual (C.IV.).
23. OAT Operating Limitation:	For airplanes S/N 4697001, 4697003 through 4697173: +46°C (+115°F) maximum -34°C (-30°F) minimum with Jet-A -41°C (-42°F) minimum with Jet A-1
	For airplanes S/N 4697174 and up and S/N 4697001, 4697003 through 4697158 having Piper Kit 767-380 installed and S/N 4697159 through 4697173 having Piper Kit 767-381 installed: +46°C (+115°F) maximum -54°C (-65°F) minimum
Minimum Fuel Temperature	For airplanes S/N 4697159 and up and S/N 4697001, 4697003 through 4697158 having Piper Kit 767-380 installed: -34°C (-30°F) minimum for starting with Jet-A/A-1 -34°C (-30°F) minimum in-flight with Jet-A -41°C (-42°F) minimum in-flight with Jet A-1

NOTE: When a mixture of Jet A and Jet A-1 is present in the fuel tanks, the Jet A minimum fuel temperature limits must be observed.



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

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

- a) DOA No. SO-1 approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1689 for Model PA-46-500TP, S/N 4697001, 4697003 through 4697156
- b) DOA No. SO-1 approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1751 for Model PA-46-500TP, (1999 kg) S/N 4697001, 4697003 through 4697156
- c) DOA No. SO-1 approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1835 for Model PA-46-500TP (5092 lb. MTOW) S/N 4697157 through 4697173 and earlier airplanes having Kit 767-360 installed.
- d) DOA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1888, revision 1, or later approved revision for Model PA-46-500TP S/N 4697174 through 4697197 and 4697199 through 4697215.
- e) DOA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1912, revision 3 or later approved revision for Model PA-46-500TP S/N's 4697240, 4697244 and up, equipped with the factory installed Avidyne Entegra option.
- f) DOA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1948, for Model PA-46-500TP (1999 kg MTOW), equipped with the factory installed Avidyne Entegra option, S/N's 4697240, 4697244 and up.
- g) DOA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1993, revision 1 or later approved revision for Model PA-46-500TP, equipped with the factory installed Garmin G1000/GFC700 option, S/N's , 4697340, 4697399 and up.
- h) ODA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-2182, basic revision or later approved revision for Model PA-46-500TP (1999 kg MTOW), equipped with the factory installed G1000/GFC700 option, S/N's , 4697340, 4697399 and up.
- i) ODA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-2543, revision 4 or later approved revision for Model PA-46-500TP), equipped with the factory installed G1000/GFC700 Phase III option, S/N's 4697549, 4697569, 4697582 and up.

Airplane Maintenance Manual (AMM): P/N 767-005, latest approved revision  
(S/N 4697001, 4697003 through 4697398)

P/N 767-072, latest approved revision  
(S/N 4697340, 4697399 and up)

Service Bulletins and Service Letters

OSD, MMEL: VB 2744, initial revision or later approved  
revision for Model PA-46-500TP





## **C.V. Notes**

1. Applicable Manufacturer's S/N:

- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| a) Basic aeroplane:               | S/N 4697001, 4697003 and up          |
| b) Avidyne Entegra option:        | S/N 4697240, 4697244 and up          |
| c) G1000 and GFC700 option:       | S/N 4697340, 4697399 and up          |
| d) G1000/GFC700 Phase III option: | S/N 4697549, 4697569, 4697582 and up |

2. Approved Noise Levels:  
see EASA TCDSN IM.A.077

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 certified 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: 5.44 kg (20.1 lb), at +3.667 m (+144.37 in)  
Oil: 2.52 kg (5.55 lb), at +1.971 m (+77.76 in)

4. Placards:

All placards required in the POH and AFM must be installed in the appropriate locations. The following placard must be displayed in clear view of the pilot:

"This aircraft must be operated as a Normal Category Airplane in compliance with the operating limitations stated in the form of placards, markings and manuals. No acrobatic maneuvers, including spins are approved. This aircraft is approved for VFR, IFR day and night icing flight when equipped in accordance with the airplane flight manual."

5. Life Limitations (see also AMM, chapter 4-00-00 (P/N 767-005 and 767-072, as applicable)):  
for S/N 4697001, 4697003 through 4697156:

The life limit of the fuselage assembly, P/N 89600-4, is 10,145 hours time-in-service.  
The life limit of the wing assembly, P/N 89640-4/-7, is 13,349 hours time-in-service.

For S/N 4697157 and up and earlier airplanes having Kit 767-360 installed:

The life limit of the fuselage assembly, P/N 89600-4, is 10,145 hours time-in-service.  
The life limit of the wing assembly, P/N 89640-7, is 10,255 hours time-in-service.

For S/N 4697174 and up:

The life limit of the wing assembly, P/N 89640-8, is 10,255 hours time-in-service.

6. Certification Basis for basic PA-46-500TP aeroplanes:

FAR 23, effective February 1, 1965, as amended by Amendment 23-25, effective March 6, 1980 unless otherwise indicated herein; FAR 23.1529 as amended by Amendment 23-26, effective October 14, 1980; FAR 23.441 as amended by Amendment 23-28, effective April 28, 1982; FAR 23.994 and 23.995 as amended by Amendment 23-29, effective March 26, 1984; FAR 23.781 as amended by Amendment 23-33, effective August 11, 1986; FAR 23.173, 23.333, 23.443, and 23.1165 as amended by Amendment 23-34, effective February 17, 1987; FAR 23.2, 23.783(a), (b), (e)(2) and (e)(3), and 23.1413 as amended by amendment 23-36, effective September 14, 1988; FAR 23.331, 23.351, 23.421, 23.423, 23.425, 23.427, 23.831, 23.939, and 23.1163 as amended by Amendment 23-42, effective February 4, 1991; FAR 23.905, 23.937, 23.943, 23.951, 23.957, 23.961, 23.967, 23.971, 23.977, 23.991, 23.993, 23.997, 23.999, 23.1011, 23.1019, 23.1021, 23.1027, 23.1103, 23.1123, 23.1145, 23.1189, 23.1193, 23.1322, 23.1331, 23.1357, 23.1385, 23.1387, 23.1441, 23.1443, and 23.1445 as amended by Amendment 23-43, effective May 10, 1993; FAR 23.23, 23.141, 23.181, 23.251, 23.305, 23.321, 23.361, 23.397, 23.479, 23.485, 23.571, 23.572, 23.621, 23.655, 23.731, 23.733, 23.773, 23.1507, 23.1525, 23.1527, 23.1549, 23.1557, and 23.1563 as amended by Amendment 23-45, effective September 7, 1993; FAR 23.301, 23.335, 23.337, 23.341, 23.343, 23.345, 23.347, 23.349, 23.371, 23.391, 23.393, 23.399, 23.415, 23.457, 23.473, 23.499, 23.561, 23.575, 23.611, 23.629, 23.657, 23.673, 23.725, and 23.865 as amended by FAR 23-48, effective March 11, 1996; FAR 23.677, 23.723, 23.735, 23.745,



23.775, 23.841, 23.853, 23.867, 23.1303, 23.1307, 23.1309, 23.1311, 23.1321, 23.1323, 23.1326, 23.1329, 23.1353, 23.1359, 23.1361, 23.1383, 23.1401, 23.1447, 23.1451, and 23.1453 as amended by Amendment 23-49, effective March 11, 1996; FAR 23.3, 23.25, 23.33, 23.45, 23.49, 23.51, 23.53, 23.63, 23.65, 23.69, 23.71, 23.73, 23.75, 23.77, 23.143, 23.145, 23.153, 23.155, 23.157, 23.161, 23.175, 23.177, 23.201, 23.203, 23.207, 23.221, 23.233, 23.235, 23.253, 23.1325, 23.1511, 23.1521, 23.1543, 23.1553, 23.1555, 23.1559, 23.1567, 23.1581, 23.1583, 23.1585, 23.1587, and 23.1589 as amended by Amendment 23-50, effective March 11, 1996; FAR 23.777, 23.779, 23.901, 23.903, 23.907, 23.925, 23.929, 23.933, 23.955, 23.959, 23.963, 23.965, 23.973, 23.975, 23.1013, 23.1041, 23.1043, 23.1045, 23.1091, 23.1093, 23.1121, 23.1141, 23.1143, 23.1153, 23.1181, 23.1183, 23.1191, and 23.1337 as amended by Amendment 23-51, effective March 11, 1996; and FAR 23.1305 as amended by Amendment 23-52, effective July 25, 1996. Equivalent Level of Safety (ELOS) for FAR 23.955(f)(3), June 6, 2000. Special Condition 23-096-SC (Docket CE153), August 27, 1999.

Compliance with the requirements of FAR 23.1419 as amended by Amendment 23-14, effective December 20, 1973, has been established, provided the required ice protection systems are installed and functioning properly.

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(a), 23.337, 23.341, 23.473, 23.561(b)(3), 23.561(e), 23.571(a), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.627, 23.771(a), 23.773(a)(2), 23.777(a), 23.777(b), 23.867(b), 23.1301, 23.1303, 23.1305, 23.1307, 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, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1549, 23.1555, 23.1563, 23.1581, 23.1583, 23.1585
8. Notes regarding engine limits:  
The maximum propeller shaft overspeed limit for the PT6A-42A is 100% (2205 rpm) for all ratings. 91% propeller shaft speed is defined as 2000 rpm and is the normal steady state operating limit.  
  
Minimum propeller speed (Np) corresponding to minimum idle gas generator speed (Ng) is 1200 RPM.  
Gas generator speeds up to 104% are permissible for 10 seconds and 101.6% for unlimited periods subject to applicable temperature and other limits. 100% gas generator speed is defined as 37,500 rpm.
9. For operational reasons AFM/POH with a reduced MTOW of 1999 kg (4406 lb) are available. No physical changes on the aircraft are necessary for this MTOW reduction.
10. Type Design Definition of TCDS relevant changes:
  - a) Factory installed Avidyne Entegra and S-Tec Magic 1500 DFCS option: VB-1919
  - b) Factory installed G1000 integrated avionics and GFC700 AFCS option: VB-1988 and VB-2044
  - c) Factory installed G1000/GFC700 Phase III option: Top Dwg No.102000-008
11. In addition to the certification basis defined in CRI-A01, latest revision, the applicable paragraphs for the factory installation of the Garmin G1000/GFC700 option are listed below. These CS requirements substitute the corresponding paragraphs of note 6.  
CS-23 (basic release):  
CS 23.23, 23.25, 23.143(a)(b)(c), 23.251, 23.253, 23.301(a)(b)(c), 23.303, 23.305, 23.307, 23.337, 23.341(a), 23.391, 23.395(a), 23.397(a), 23.473, 23.561(a)(b)(3)(e), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.619, 23.625, 23.627, 23.671, 23.672, 23.677, 23.681, 23.683, 23.685, 23.689, 23.693, 23.771(a), 23.773(a)(1)(2), 23.777(a)(b), 23.779, 23.841, 23.853, 23.867, 23.955(a)(2), 23.1183(a), 23.1191, 23.1301, 23.1303(a)(b)(d)(e)(1)(2)(f), 23.1305, 23.1307, 23.1309, 23.1311, 23.1321, 23.1322, 23.1323, 23.1325, 23.1326, 23.1327, 23.1329, 23.1331, 23.1335, 23.1337, 23.1351(a)(1)(2)(i)(b)(1)(2)(3)(d)(1)(g), 23.1353(d)(h), 23.1357(a)(2)(b)(c)(d), 23.1359(c), 23.1361(a)(b)(c), 23.1365(a)(b)(d)(e)(f), 23.1367, 23.1381, 23.1419, 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)(4)(d), 23.1547, 23.1549, 23.1553, 23.1555(a)(d)(1), 23.1563(a)(b), 23.1567(a), 23.1581, 23.1583, 23.1585, 23.1587, 23.1589.



12. In addition to the certification basis defined in CRI-A01, latest revision, the applicable paragraphs for the factory installation of the Garmin G1000/GFC700 Phase III option are listed below. These CS requirements substitute the corresponding paragraphs of note 6.

CS-2, Amendment 3:

23.21, 23.23(a), 23.25(a)(b), 23.29, 23.143(a)(b), 23.207(b), 23.251, 23.301(a)(b)(c), 23.303, 23.305, 23.307, 23.337, 23.341(a)(c), 23.365(a)(b)(d), 23.473, 23.561(a)(b)(3)(e), 23.571(a), 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)(c)(1)(2)(3)(4)(5)(6)(8)(e)(1)(2), 23.1309(a)(1)(2)(b)(c)(d)(e), 23.1311(a)(1)(2)(3)(4)(5)(6)(7)(b)(c), 23.1321(a)(c)(d)(5)(e), 23.1322(a)(b)(c)(d)(e), 23.1323(a)(c), 23.1325(a)(b)(1)(2)(ii), 23.1326(a)(b), 23.1327(a), 23.1329(d)(e)(h), 23.1335, 23.1337(b)(1)(4), 23.1351(a)(1)(2)(i)(b)(1)(i)(3)(c)(4)(d), 23.1353(a)(b)(c)(d)(e)(h), 23.1357(a)(b)(c)(d), 23.1359(c), 23.1361(a)(c), 23.1365, 23.1367(a)(b)(c)(d), 23.1381(a)(b)(c), 23.1416(c), 23.1419(c), 23.1431(a)(b)(e), 23.1501(a)(b), 23.1523, 23.1525, 23.1529, 23.1541 (a)(b), 23.1543(b)(c), 23.1545(a)(b)(1)(2)(3)(4), 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



## **SECTION D:      Model PA-46R-350T (Malibu Matrix)**

### **D.I.    General**

- |   |  |
|---|--|
| 1. a) Type:                             | PA-46  |
| b) Model:                               | PA-46R-350T  |
| a) 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: | 11 February 2008   |
| 5. State of Design Authority:           | FAA  |
| 6. State of Design TC Date:             | 26 October 2007  |
| 7. EASA Type Certification Date:        | 10 September 2008  |

### **D.II.   Certification Basis**

1. Reference Date for determining the applicable requirements: Date of application for FAA TC for Model PA-46R-350T  
19 June 2006
2. (Reserved)
3. (Reserved)
4. Certification Basis:

For those portions of the aeroplane that are unchanged from the basic PA-46-350P the applicable certification basis is FAR Part 23, effective 1 February 1965, as amended by Amendment 23-25, effective 6 March 1980; FAR 25.783(e) as amended by Amendment 25-54, effective 14 October 1980; FAR 25.831(c) and (d) as amended by Amendment 25-41, effective 1 September 1977.  
No equivalent safety findings.  
Special Conditions No. 23-ACE-53, Docket No. 082CE.

  - a) For changed areas (Avidyne Entegra and PA-46R-350T specific areas) the certification basis is CS-23 as defined in CRI-A01, issue 5, or later revision (for details on applicable paragraphs see D.V., note 6 and 7).
  - b) For PA-46R-350T aeroplanes equipped with the factory installed G1000 integrated avionics and GFC700 AFCS option the additional certification basis for installation specific items only is CS-23 as defined in CRI-A01, issue 5, or later revision (for details on applicable paragraphs see D.V., note 9).
  - c) For PA-46R-350T aeroplanes equipped with the factory installed HC-13Y1R-1N/N7605+2, N7605C+2, N7605K+2 or N7605CK+2 propeller the additional certification basis for installation specific items only is CS-23 as defined in CRI-A01, issue 5, or later (for details on applicable paragraphs see D.V., note 10)



5. Airworthiness Requirements:

- a) FAR 23 and CS-23 for PA-46R-350T aeroplanes (for applicable amendments see D.II.4.a))
- b) FAR 23 and CS-23 for PA-46R-350T aeroplanes equipped with the factory installed G1000 integrated avionics and GFC700 AFCS option (for applicable amendments see D.II.4.b))
- c) FAR 23 and CS-23 for PA-46R-350T aeroplanes equipped with the factory installed HC-I3Y1R-1N/N7605K+2, N7605C+2, N7605K+2 or N7605CK+2 propeller (for applicable amendments see D.II.4.c and D.V.10))

6. Requirements elected to comply: None

7. Special Conditions:

- a) CRI F-01, Protection from the Effects of HIRF  
CRI F-02, Protection from the Effects of Lightning Strike; Indirect Effects,  
CRI F-05, Human Factors in Integrated Avionic Systems,
- b) CRI-F01, issue 3 or later revision, Protection from the Effects of HIRF  
CRI-F02, issue 3 or later revision, Protection from the Effects of Lightning Strike; Indirect Effects,  
CRI-F05, issue 3 or later revision, Human Factors in Integrated Avionic Systems,  
for PA-46R-350T aeroplanes equipped with the factory installed G1000 integrated avionics and GFC700 AFCS option.

8. Exemption: None

9. Equivalent Safety Findings:

- a) CRI F-03, Powerplant Instruments
- b) CRI-F03, issue 2 or later revision, Powerplant Instruments,  
for PA-46R-350T aeroplanes equipped with the factory installed G1000 integrated avionics and GFC700 AFCS option.

10.Environmental Standards:

a) Noise:

ICAO Annex 16, Volume 1, Chapter 10

ICAO Annex 16, Volume 1, Chapter 10, Amendment 9, if equipped with HC-I3Y1R-1N/N7605+2, N7605C+2, N7605K+2 or N7605CK+2 propeller (3-bladed)



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

1. Type Design Definition: Piper Report number VB-2008
2. Description: Single piston engine, turbocharged, propeller, all-metal, six-place, unpressurized, low wing airplane, retractable tricycle landing gear.
3. Equipment: For minimum equipment required by certification see applicable AFM/POH, section 2.  
For approved additional equipment, see applicable AFM/POH, section 6.  
(For applicable AFM/POH see D.IV.).
4. Dimensions:
- |           |                                |
|-----------|--------------------------------|
| Span      | 13.11 m (43.0 ft)              |
| Length    | 8.81 m (28.9 ft)               |
| Height    | 3.44 m (11.3 ft)               |
| Wing Area | 16.26 m <sup>2</sup> (175 sqf) |
5. Engines: 1 Textron Lycoming TIO-540-AE2A
- The EASA Engine Type Certification standard includes that of FAA TCDS E14EA (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))
- 5.1 Engine Limits: For all operation:  
2500 RPM and 42" Hg MAP (350 HP), sea level to 20,600 ft,  
42-1.6" Hg MAP decrease per each 1000 ft altitude increase, 20,600 ft to 25,000ft
6. Propellers:
- 6.1 Propeller 1: Hartzell, Hub HC-I3YR-1E, Blade 7890K or 7890B  
Pitch: High 38.7°±0.5°, Low 13.65°± 0.15°, at 0.762 m (30") station  
Diameter: 2,032 m (80").  
Spinner: Hartzell D-6750P.  
Governor: Hartzell Model V-11-1
- The EASA Propeller Type Certification standard includes that of FAA TCDS P33EA (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a)).
- 6.2 Propeller 2: Hartzell, Hub HC-I3Y1R-1N/N7605+2, N7605C+2, N7605K+2 or N7605CK+2 propeller (3-bladed) (S/N 4692123 and up)  
Pitch: High 38.0°±1.0°, Low 14.0°± 0.2°, at 0.762 m (30") station.  
Diameter: 2.032 m (80")  
Spinner: Hartzell D-6750-1P  
Governor: Hartzell Model V-11-1 or S-1-30
- EASA Type Certificate Data Sheet, EASA.IM.P.132
7. Fluids:
- 7.1 Fuel: 100/100LL minimum grade aviation gasoline, for alternate fuels refer to latest revision of Lycoming SI 1070
- 7.2 Engine Oil: in accordance with latest revision of Lycoming SI 1014



8. Fluid capacities:

8.1 Fuel:	Total:	462 liters (122 US gal) in 2 wing tanks
	Usable:	454 liters (120 US gal) in 2 wing tanks
8.2.Oil:	Maximum:	11.4 liters (12 qts)
	Minimum:	2.6 liters (2.75 qts)

9. Air Speeds:

Design Manoeuvring Speed, $v_A$ (1969 kg (4340 lb))	133 KIAS
Design Manoeuvring Speed, $v_A$ (1316 kg (2900 lb))	108 KIAS
Never Exceed Speed $v_{NE}$	198 KIAS
Maximum Structural Cruising Speed, $v_{NO}$	168 KIAS
Maximum Flap Extend Speed (10°), $v_{FE}$	165 KIAS
Maximum Flap Extend Speed (20°), $v_{FE}$	130 KIAS
Maximum Flap Extend Speed (36°), $v_{FE}$	116 KIAS
Maximum Landing Gear Operating Speed, $v_{LO}$	
Extension	165 KIAS
Retraction	126 KIAS
Maximum Landing Gear Extended Speed, $v_{LE}$	195 KIAS

10. Maximum Operating Altitude: 7620 m (25,000 ft)

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

12. Maximum Masses:

Ramp:	1977 kg (4358 lb)
Take-Off:	1969 kg (4340 lb)
Landing:	1870 kg (4123 lb)

13. Centre of Gravity Range (gear extended):

linear variation between given points

Weight	Fwd. Limit	Aft Limit
	m (in) aft of datum	m (in) aft of datum
1969 (4340)	3.660 (144.1)	3.736 (147.1)
1870 (4123)	3.546 (139.6)	3.736 (147.1)
1814 (4000)	3.480 (137.0)	3.721 (146.5)
1315 (2900)	3.366 (132.5)	3.561 (140.2)

14. Datum: 2.54 m (100") forward of forward cockpit bulkhead.

15. (Reserved)

16. Levelling Means: Top or bottom fuselage at B.L. 0 (constant section).

17. Minimum Flight Crew: 1 (Pilot)

18. Max. Passenger Seating Capacity: 5, for passenger seating locations see applicable AFM/POH

19. Baggage / Cargo Compartments: 45 kg (100 lb) at +2.250 m (+88.6 in) (fwd.)  
5 kg (100 lb) at +6.305 m (+248.23 in) (aft)

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. Maximum Cabin Operating Pressure Differential: N/A
22. Control Surface Movements: For approved control surface deflections see applicable Airplane Maintenance Manual (D.IV.).

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

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

- a) DOA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-2007, revision 5 or later approved revision for Model PA-46R-350T S/N's 4692001 and up, equipped with the factory installed Avidyne Entegra option.
- b) ODA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-2122, revision 1 or later approved revision for Model PA-46R-350T S/N's 4692134 and up, equipped with the factory installed G1000 integrated avionics, GFC700 AFCS.

Airplane Maintenance Manual (AMM): P/N 761-876, latest approved revision

Service Bulletins and Service Letters

#### **D.V. Notes**

1. Applicable Manufacturer's S/N and certification import requirements:

- a) For the basic model PA-46R-350T S/N 4692001 and up
- b) For the HC-13Y1R-1N/N7605+2, N7605C+2, N7605K+2 or N7605CK+2 option S/N 4692123 and up
- c) For the G1000/GFC700 S/N 4692134 and up

2. Approved Noise Levels:  
see EASA TCDSN

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 certified 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: 5.44 kg (12 lb), at +3.870 m (+152.37 in)  
Oil: 1.72 kg (3.8 lb), at +1.549 m (+61.0 in)

4. Placards:

All placards required in the POH and AFM must be installed in the appropriate locations. The following placard must be displayed in clear view of the pilot:  
"This aircraft must be operated as a Normal Category Airplane in compliance with the operating limitations stated in the form of placards, markings and manuals. No acrobatic maneuvers, including spins are approved. This aircraft is approved for VFR, IFR day and night icing flight when equipped in accordance with the airplane flight manual."





5. Life Limitations (see also AMM, chapter 4-00-00 (P/N 761-876):  
The life limit of the wing assembly, P/N 89640-10, is 15,580 hours time-in-service.  
The life limit of the horizontal stabilizer assembly, P/N 83404-2, is 15,580 hours time-in-service.  
The life limit of the vertical fin assembly, P/N 83401-9, is 15,580 hours time-in-service.
6. In addition to the certification basis defined in CRI-A01,PA-46R-350T, latest revision, the applicable paragraphs for the factory installation of the Avidyne Entegra option are listed below.  
CS-23 (basic release):  
CS 23.301, 23.303, 23.305, 23.307(a), 23.337, 23.341, 23.473, 23.561(b)(3), 23.561(e), 23.571(a), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.627, 23.771(a), 23.773(a)(2), 23.777(a), 23.777(b), 23.867(b), 23.1301, 23.1303, 23.1305, 23.1307, 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, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1549, 23.1555, 23.1563, 23.1581, 23.1583, 23.1585
7. In addition to the certification basis defined in CRI-A01,PA-46R-350T, latest revision, the applicable paragraphs for the PA-46R-350T specific modifications are listed below:  
CS-23 (basic release):  
CS23.2, 23.25, 23.561, 23.572, 23.575, 23.607, 23.611, 23.613, 23.773, 23.775, 23.783, 23.831, 23.851, 23.853, 23.905, 23.907, 23.1191, 23.1309, 23.1311, 23.1321, 23.1323, 23.1325, 23.1351, 23.1357, 23.1441, 23.1443, 23.1445, 23.1447, 23.1451, 23.1453, 23.1527, 23.1529, 23.1543, 23.1545, 23.1589, CS-23 App. F and App. G
8. Type Design Definition of TCDS relevant changes:  
a) Changes relevant to the PA-46R-350T model: VB-2008  
b) Factory installed G1000 integrated avionics and GFC700 AFCS option: VB-2093  
c) Factory installed HC-13Y1R-1N/N7605( )+2 propeller option: VB-2132
9. In addition to the certification basis defined in CRI-A01, latest revision, the applicable paragraphs for the factory installation of the G1000 integrated avionics and GFC700 AFCS option in the PA-46R-350T are listed below.  
CS-23 (basic release):CS 23.21, 23.23, 23.25, 23.29, 23.251, 23.301(a), (b), (c), 23.303, 23.305, 23.307, 23.337, 23.341(a), (c), 23.391, 23.395(a), 23.397(a), 23.473, 23.561(a), (b)(3), (e), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.619, 23.625, 23.627, 23.671, 23.677(b), (d), 23.681, 23.683, 23.685, 23.689, 23.693, 23.771(a), 23.773(a)(1), (a)(2), 23.777(a), (b), (d), 23.867, 23.1141(a), (b), (c), (d), 23.1301(a), (b), (c), (d), 23.1303 (a), (b), (c), (f), 23.1305(a)(1), (a)(2), (a)(3), (b)(2), (b)(5), (b)(6)(i), 23.1309(a)(1), (a)(2), (b), (c), (e), 23.1311(a)(1), (a)(2), (a)(3), (a)(4), (a)(5), (a)(6), (a)(7), (b), (c), 23.1321(a), (c), (d)(5), (e), 23.1322(a), (b), (c), (d), (e), 23.1323(a), (c), 23.1325(a), (b)(1), (b)(2)(i), 23.1326, 23.1327, 23.1329(a)(1), (b), (d), (e), (f), (g), (h), 23.1331(a), (b), (c), 23.1335, 23.1337(b)(1), (b)(4), 23.1351(a)(1), (a)(2)(i), (b)(1)(i), 23.1353(h), 23.1357(a)(2), (b), (c), (d), 23.1359(c), 23.1365(a), (b), (c), (d), (f), 23.1367(a), (b), (c), (d), 23.1381(a), (b), (c), 23.1419, 23.1431(a), (b), (e), 23.1441(b), (c), (e), 23.1501, 23.1507, 23.1523, 23.1525, 23.1529, 23.1541(a)(1), (b), 23.1543(b), (c), 23.1545(a), (b)(1), (b)(2), (b)(3), (b)(4), 23.1547, 23.1549(a), (b), (c), 23.1553, 23.1555(a), (b), (d)(2), 23.1559(c), 23.1563(a), (b), 23.1567(a), 23.1581, 23.1583, 23.1585, 23.1587, 23.1589



10. In addition to the certification basis defined in CRI-A01, latest revision, the applicable paragraphs for the factory installation HC-I3Y1R-1N/N7605+2, N7605C+2, N7605K+2 or N7605CK+2 propeller option in the PA-46R-350T are listed below.

CS-23 (basic release):

CS 23.21, 23.23, 23.25, 23.29, 23.33, 23.45, 23.49, 23.51, 23.65, 23.75, 23.77, 23.141, 23.143, 23.145, 23.147, 23.153, 23.155, 23.157, 23.161, 23.171, 23.173, 23.175, 23.177, 23.181, 23.201, 23.203, 23.207, 23.221, 23.231, 23.233, 23.235, 23.237, 23.239, 23.251, 23.301, 23.303, 23.305, 23.307, 23.321, 23.331, 23.333, 23.337, 23.341, 23.351, 23.361, 23.363, 23.371, 23.471, 23.473, 23.479, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.621, 23.623, 23.625, 23.627, 23.629, 23.901, 23.905(b), (d), 23.907, 23.925, 23.929, 23.939, 23.1041, 23.1043, 23.1047, 23.1301, 23.1309(a), (c), 23.1351(a),(b)(1)(i), 23.1357(a), (b), (c), (d), 23.1365(a), (b), 23.1367, 23.1419, 23.1431, 23.1501, 23.1521, 23.1529, 23.1541, 23.1549, 23.1559, 23.1581, 23.1583, 23.1585, 23.1587



## **SECTION E:      **Model PA-46-600TP (M600)****

### **E.I.    General**

- |   |  |
|---|--|
| 1. a) Type:                             | PA-46  |
| b) Model:                               | PA-46-600TP  |
| 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: | 06 July 2016   |
| 5. State of Design Authority:           | FAA  |
| 6. State of Design TC Date:             | 16 June 2016   |
| 7. EASA Type Certification Date:        | 19 May 2017  |

### **E.II.   Certification Basis**

- |  |  |
|--|--|
| 1. Reference Date for determining the applicable requirements: | Date of application for FAA TC for Model PA-46-600TP<br>29 May 2012  |
| 2. (Reserved)  |  |
| 3. (Reserved)  |  |
| 4. Certification Basis:  | a) For the basic PA-46-600TP aeroplane the applicable certification basis is FAR 23 and CS-23. For details on the applicable FAR 23 and CS-23 certification basis see E.V., note 6.  |
| 5. Airworthiness Requirements:                                 | a) FAR 23 and CS-23 for the basic PA-46-600TP aeroplane (for applicable amendments see E.II.4)   |
| 6. Requirements elected to comply:                             | a) CS-23, Amendment 4, for all applicable CS-23 paragraphs of the basic PA-46-600TP (see E.II.4)   |
| 7. Special Conditions:   | a) CRI B-52, Human Factors<br>CRI B-01, Handling characteristics for high performance aircraft<br>CRI E-58, Turbine engine installation, rain ingestion<br>CRI F-601, Security Protection of Aircraft Systems and Networks |
| 8. Exemption:  | None   |



9. Equivalent Safety Findings:

- a) CRI B-101, Longitudinal control forces
- CRI D-601, Material strength properties
- CRI E-601, Fuel flow, no pilot action required after engine start
- CRI E-602, Digital only display of powerplant instruments and omission of coloured caution and normal operating range arcs
- CRI F-606, Flight instruments, stabilized magnetic compass

10. Environmental Standards:

Noise:

ICAO Annex 16, Volume I, Part II, Chapter 10, in accordance with CS-36, Amdt. 4

Fuel Venting:

ICAO Annex 16, Volume II, Part II, in accordance with CS-34, Amdt. 2

11. Operational Suitability Data (OSD):

Master Minimum Equipment List:

CS-GEN-MMEL, initial issue

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

1. Type Design Definition:

Piper Aircraft Drawing 46G00A000-001

2. Description:

Single engine turbopropeller, all-metal, six-place, pressurized, low wing airplane, retractable tricycle landing gear.

3. Equipment:

For minimum equipment required by certification see applicable AFM/POH, section 2.  
For approved additional equipment, see applicable AFM/POH, section 6.  
(For applicable AFM/POH see E.IV.).

4. Dimensions:

Span	13.15 m (43.2 ft)
Length	9.05 m (29.7 ft)
Height	3.44 m (11.3 ft)
Wing Area	19.42 m <sup>2</sup> (209 sqft)

5. Engines:

1 Pratt & Whitney Canada PT6A-42A  
(PWC Build Specification BS1322)  
The EASA Engine Type Certification standard includes that of TCCA TCDS E-12 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))

5.1 Engine Limits:

Take-off and max continuous power	600 SHP
Compressor turbine speed (Ng)	38,100 rpm (101.7%)
Propeller speed (Np)	2000 rpm

For other powerplant limitations refer to the applicable AFM/POH, section 2, and E.V., note 7.

6. Propellers:

6.1 Propeller 1:

Pitch:	Low 19.0°± 0.1°, at 0.762 (30") station.
Diameter:	Not over 2.096 m (82.5"), not under 2.070 m (81.5").
Spinner:	Hartzell D-630-5P.
Governor:	Woodward Model 210 695

The EASA Propeller Type Certification standard includes that of EASA Type Certificate Data Sheet IM.P.133



6.1 Propeller 2:  
Pitch: Hartzell, Hub 5D3-N338A1, Blade 78D01B  
Low  $17.7^{\circ} \pm 0.1^{\circ}$ , at 0.762 (30") station  
Feather  $83.2^{\circ} \pm 0.5^{\circ}$ , at 0.762 (30") station  
Reverse  $-11.0^{\circ} \pm 0.5^{\circ}$ , at 0.762 (30") station  
Diameter: 2.096 m (82.5"), no reduction permitted  
Spinner: Hartzell Standard: 106917(P) or  
Hartzell Light Weight: 105951(P)  
Governor: Woodward Model 210 695

The EASA Propeller Type Certification standard includes that of EASA Type Certificate Data Sheet IM.P.136

7. Fluids:

7.1 Fuel: Jet A and A-1 fuels conforming to Pratt & Whitney Specification 522 or Service Bulletin 3044, CPW204, latest revision. MIL-DTL-85470 (formerly MIL-DTL-27686G, and MIL-I-27686F) Fuel System Icing Inhibitor or equivalent must be used in the fuel in the amount up to 0.15% by volume.

7.2 Engine and Gearbox Oil: PWC PT6 Engine Service Bulletin No. 3001 lists approved brand oils.

8. Fluid capacities:

8.1 Fuel: Total: 996 liters (263.2 US gal) in 2 wing tanks  
Usable: 984 liters (260 US gal) in 2 wing tanks  
8.2.Oil: Maximum: 11.4 liters (12 qts) for the complete oil system  
Minimum: not specified

9. Air Speeds:

Maximum Operating Limit Speeds

V <sub>MO</sub>	251 KIAS	(250 KCAS)
M <sub>MO</sub>	0,55 M	

Maximum Operating Maneuvring Speed, V<sub>o</sub>

2722 kg (6000 lb)	153 KIAS	(151 KCAS)
1701 kg (3750 lb)	121 KIAS	(119 KCAS)

Maximum Flap Extend Speed, V<sub>FE</sub>

T/O	147 KIAS	(145 KCAS)
LDG	112 KIAS	(108 KCAS)

Maximum Landing Gear Operating Speed, V<sub>LO</sub>

Extension	170 KIAS	(168 KCAS)
Retraction	130 KIAS	(128 KCAS)

Maximum Landing Gear Extended Speed, V<sub>LE</sub>

170 KIAS	(168 KCAS)
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10.Maximum Operating Altitude: 9144 m (30,000 ft)

11.Operational Capability: VFR Day and Night  
IFR Day and Night  
Flight Into Known Icing (FIKI) (see E.V. note 8)

12.Maximum Masses:

Ramp:	2744 kg (6050 lb)
Take-Off:	2722 kg (6000 lb)
Landing:	2631 kg (5800 lb)
MZFW:	2200 kg (4850 lb)



13. Centre of Gravity Range:  
linear variation between given points

	Weight	Fwd. Limit	Aft Limit
	kg (lb)	m (in) aft of datum	m (in) aft of datum
Ramp Envelope	2744 (6050)	3.658 (144.00)	3.708 (146.00)
	2654 (5850)	3.588 (141.26)	-
Flight Envelope	2722 (6000)	3.658 (144.00)	3.708 (146.00)
	2631 (5800)	3.585 (141.15)	-
	2041 (4500)	-	3.708 (146.00)
	1780 (3925)	3,480 (137.00)	-
	1588 (3500)	3,480 (137.00)	3,556 (140.00)

see also E.V., note 3.

14. Datum: 2.54 m (100") front side of forward pressure bulkhead.
15. (Reserved)
16. Levelling Means: Top or bottom fuselage at B.L. 0 (constant section).
17. Minimum Flight Crew: 1 (Pilot)
18. Max. Passenger Seating Capacity: 5, for passenger seating locations see applicable AFM/POH
19. Baggage / Cargo Compartments: 45 kg (100 lb) at +6.304 m (+248.20 in)
20. Wheels and Tyres:  
 20.1 Nose Wheel Tyre Size 18 x 5.5, 8 ply, TL  
 20.2 Main Wheel Tyre Size 5.00 x 5, 10 ply, TT
21. Maximum Cabin Operating Pressure Differential: 38.61 kPa (5.6 PSID)
22. Control Surface Movements: For approved control surface deflections see applicable Airplane Maintenance Manual (E.IV.).
23. OAT Operating Limitation: +46°C (+115°F) maximum  
 -54°C (-65°F) minimum
- Minimum Fuel Temperature -34°C (-30°F) minimum for starting with Jet-A/A-1  
 -34°C (-30°F) minimum in-flight with Jet-A  
 -41°C (-42°F) minimum in-flight with Jet A-1

NOTE: When a mixture of Jet A and Jet A-1 is present in the fuel tanks, the Jet A minimum fuel temperature limits must be observed.



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

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

- a) ODA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-2366, revision 4 or later approved revision for Model PA-46-600TP S/N's 4698001 and up.

Airplane Maintenance Manual (AMM): P/N 767-617, latest approved revision (S/N 4698001 and up)

Service Bulletins and Service Letters

OSD, MMEL: VB-2742, initial revision or later approved revision for Model PA-46-600TP



## **E.V. Notes**

1. Applicable Manufacturer's S/N:  
S/N 4698001 and up
2. Approved Noise Levels:  
see EASA TCDSN IM.A.077
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 certified 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: 5.44 kg (20.1 lb), at +3.782 m (+148,9 in)  
Oil: 2.52 kg (5.55 lb), at +1.971 m (+77.76 in)
4. Placards:  
All placards required in the POH and AFM must be installed in the appropriate locations. The following placard must be displayed in clear view of the pilot:  
"This aircraft must be operated as a Normal Category Airplane in compliance with the operating limitations stated in the form of placards, markings and manuals. No acrobatic maneuvers, including spins are approved. This aircraft is approved for VFR, IFR day and night icing flight when equipped in accordance with the airplane flight manual."
5. Life Limitations (see also AMM, chapter 4-00-00 (P/N 767-617)):  
S/N 4698001 and up:  
The life limit of the fuselage assembly, P/N 46F00A000-001, is 6,143 hours time-in-service.  
The life limit of the wing assembly, P/N 46W57A100-001, is 5,132 hours time-in-service.  
The life limit of the horizontal stabilizer assembly, P/N 102050-005, is 25,241 hours time-in-service  
The life limit of the vertical fin assembly, P/N 83401-13, is 7,632 hours time-in-service
6. Certification Basis for basic PA-46-600TP aeroplanes:  
In addition to the certification review items defined in CRI-A01, latest revision, following airworthiness standards are applicable:  
FAR 23, effective February 1, 1965, as amended by amendment levels:  
FAR 23.562, 23.573, 23.701, 23.783, 23.785, 23.807, as amended by Amendment 23-25, effective March 6;  
FAR 23.251, 23.571, 23.572 as amended by Amendment 23-45 effective September 7, 1993;  
FAR 23.1353 as amended by Amendment 23-49 effective March 11, 1996;  
CS-23, amendment 4, for all other paragraphs, except of CS 23.811(a)
7. Notes regarding engine limits:  
The maximum propeller shaft overspeed limit for the PT6A-42A is 100% (2205 rpm) for all ratings. 91% propeller shaft speed is defined as 2000 rpm and is the normal steady state operating limit.  
  
Minimum propeller speed (N<sub>p</sub>) corresponding to minimum idle gas generator speed (N<sub>g</sub>) is 1180 RPM.  
Gas generator speeds up to 104.1% (39.000 rpm) are permissible for 10 seconds and 101.7% (38.100 rpm) for unlimited periods subject to applicable temperature and other limits.
8. For S/Ns 4698001 to 4698025, 4698027, 4698029, 4698030 and 4698032 to 4698035 Piper SB1305 and for S/Ns 4698001 through 4698035, SL1217 must be installed to be eligible for FIKI operation.





## **ADMINISTRATIVE SECTION**

### **I. ACRONYMS**

N/A

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

(and manufacturer 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 2006	Initial Issue
02	18 December 2006	Addition of the factory installed Avidyne Entegra option for PA-46-350P, change of TC holder and manufacturer name, minor editorial changes and updates
03	10 September 2008	Addition of the new model PA-46R-350T (Malibu Matrix), corrections
04	16 June 2009	Addition of the G1000 integrated avionics option for PA-46-500TP, minor updates
05	14 May 2010	Addition of the Hartzell propeller HC-I3Y1R-1N/N7605(K)+2 option and the G1000/GFC700 integrated avionics option for models PA-46-350P and PA-46R-350T, addition of PA-46-500TP POH VB-2182 (1999 kg MTOW)
06	16 August 2013	Section B.V.1, C.V.1 and D.V.1: import requirements deleted due to existing operational rules for units to be used on instruments. TCDS reorganised.
07	16 August 2016	Addition of the G1000/GFC700 Phase III option for the PA-46-500TP model Deletion of PA-46-500TP, S/N 4697002, as an applicable manufacturer S/N Replacing references to Regulation 1702/2003 by 748/2012 Updating Manual (AFM/POH and AMM) applicability in regard to aircraft S/Ns



Issue No.	Date	Change
08	24 October 2016	Addition of the G1000/GFC700 Phase III option for the PA-46-350P model
09	04 September 2017	Addition of the PA-46-600TP model, correction of Hartzell HC-E4N series propeller TCDS reference
10	27 October 2017	Addition of propeller blade option N7605CK for the PA-46-350P model Addition of propeller blade options N7605C( ) for the PA-46R-350T model Addition of optional propeller 5D3-N338A1/78D01B and flight into known icing (FIKI) capability for the PA-46-600TP model and corresponding editorial corrections
11	30 April 2018	Addition of the G1000 NXI option for the PA-46-350P model; Addition of EASA MMEL VB-2803 for PA-46-350P mod
12	06 June 2018	Section C.IV: addition of MMEL report VB-2744 for PA-46-500TP. Note 13 removed from C.V

- END -

