

Civil Aviation Authority United Kingdom



TYPE-CERTIFICATE DATA SHEET

UK.TC.A.00022

for
Piper PA-46

Type Certificate Holder
Piper Aircraft, Inc.
2926 Piper Drive
Vero Beach, Florida 32960
U.S.A.

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

Issue: 4

Date of issue: 15 July 2024

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Section 1. PA-46-310P (Malibu)

I. General

1. Type / Variant or Model

1.1 Type

PA-46

1.2 Model

PA-46-310P

1.3 Variant

–

2. Type Certificate Holder

Piper Aircraft, Inc.

2926 Piper Drive

Vero Beach, Florida 32960

United States of America (U.S.A.)

3. Manufacturer

Piper Aircraft, Inc.

2926 Piper Drive

Vero Beach, Florida 32960

U.S.A.

4. Airworthiness Category

Normal Category

5. State of Design Authority

Federal Aviation Administration (FAA)

6. Type Certificate Date by FAA

27 September 1983

7. Type Certificate Number by FAA

A25SO

8. EASA Validation Application Date

Not Applicable (N/A)

9. EASA Type Certification Date

28 September 2003 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a)).

10. Type Certificate Data Sheet Number by EASA

EASA.IM.A.077

II. Certification Basis

TCDS No.: UK.TC.A.00022

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1. Reference Date for FAA Certification

22 August 1979

2. Certification Basis

- FAR Part 23, effective February 1, 1965, as amended by Amendment 23-25, effective March 6, 1980;
- FAR 25.783(e) as amended by Amendment 25-54, effective October 14, 1980;
- FAR 25.831(c) and (d) as amended by Amendment 25-41, effective September 1, 1977.

3. Airworthiness Requirements

FAR Part 23 (for applicable amendments Section 1.II.2.

4. Special Conditions

No. 23-ACE-53, Docket No. 082CE.

5. Exemptions

None.

6. Deviations

None.

7. Equivalent Safety Findings

None.

8. Requirements elected to comply

None

9. Environmental Standards

9.1 Noise

ICAO Annex 16, Volume 1, Chapter 6.

III. Technical Characteristic and Operating 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 Aircraft Flight Manual (AFM)/Pilot's Operating Handbook (POH), section 2.

For approved additional equipment, see applicable AFM/POH, section 6.

(For applicable AFM/POH see Section 1.IV.1)

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 ² (175 ft ²)

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5. Engines

1 Teledyne Continental TSIO-520-BE

The CAA Engine Type Certification basis is defined in FAA Type Certificate Data Sheet (TCDS) E8CE (in accordance with UK Commission Regulation (EU) No. 748/2012, Article 3, para. 1.(a)).

5.1 Engine Limits

For all operation:

2600 rpm and 38 inHg Manifold Air Pressure (MAP) (310 hp), sea level to 24,000 ft.

2600 rpm and 35 inHg MAP above 24,000 ft.

2400 rpm and 31 inHg 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 $38.0^{\circ} \pm 1^{\circ}$, Low $16.0^{\circ} \pm 0.2^{\circ}$ 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 CAA Propeller Type Certification basis is defined in FAA TCDS P-920 (in accordance with UK 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 litres (122 US gal) in 2 wing tanks.

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

8.2 Oil

Maximum: 7.6 litres (8 qts).

Minimum: 3.3 litres (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

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Maximum Landing Gear Extended Speed, V_{LE} 200 KIAS

10. Maximum Operating Altitude

7620 m (25,000 ft)

11. Operational Capability

Day and Night VFR.

Day and Night IFR.

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 Section 1.V Note 3.

14. Datum

2.54 m (100 in) forward of forward pressure bulkhead.

15. Levelling Means

Top or bottom fuselage at B.L. 0 (constant section).

16. Minimum Flight Crew

1 (Pilot)

17. Maximum Passenger Seating Capacity

5, for passenger seating locations see applicable AFM/POH.

18. 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)

19. Wheels and Tyres

19.1 Nose Wheel Tyre Size

5.00x5, 6 ply.

19.2 Main Wheel Tyre Size

6.00x6, 8 ply.

20. Maximum Cabin Operating

Pressure Differential: 38.67 kPa (5.5 PSID)

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21. Control Surface Movements

For approved control surface deflections see applicable Airplane Maintenance Manual (Section 1.IV.2).

IV. Operating and Service Instructions**1. 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.

2. Airplane Maintenance Manual (AMM)

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

3. Service Bulletins and Service Letters

Refer to Piper technical publications portal.

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 CAA Type Certificate Data Sheet for Noise (TCDSN) UK.TC.A.00022.
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 centre 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 manoeuvres, including spins, approved."
5. The life limits on components are contained in Chapter 4 of the Airplane Maintenance Manual P/N 761-783.

Section 2. PA-46-350P (Malibu Mirage)

I. General

1. Type / Variant or Model

1.1 Type

PA-46

1.2 Model

PA-46-350P

1.3 Variant

–

2. Type Certificate Holder

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

3. Manufacturer

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

4. Airworthiness Category

Normal Category

5. State of Design Authority

FAA

6. Type Certificate Date by FAA

30 August 1988

7. Type Certificate Number by FAA

A25SO

8. EASA Validation Application Date

N/A

9. EASA Type Certification Date

28 September 2003 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a)).

10. Type Certificate Data Sheet Number by EASA

EASA.IM.A.077

II. Certification Basis**1. Reference Date for FAA Certification**

17 September 1987

2. Certification Basis

- 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.
- 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 Section 2.V Note 7).
- 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 Section 2.V Note 9).
- d) For PA-46-350P aeroplanes equipped with the factory installed HC-I3Y1R-1N/N7605C+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 Section 2.V Note 10).
- 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 Section 2.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 Section 2.V Note 12).

3. Airworthiness Requirements

- a) FAR 23 for the basic PA-46-350P aeroplane (for applicable amendments see Section 2.II.2.a))
- b) FAR 23 and CS-23 for PA-46-350P aeroplanes equipped with the factory installed Avidyne Entegra System (for applicable amendments see Section 2.II.2.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 Section 2.II.2.c))
- d) FAR 23 and CS-23 for PA-46-350P aeroplanes equipped with the factory installed HC-I3Y1R-1N/N7605C+2 or N7605CK+2 propeller (for applicable amendments see Section 2.II.2.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 Section 2.II.2.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 Section 2.II.2.f))

4. 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

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- 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

5. Exemptions

None.

6. Deviations

None

7. 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

8. Requirements elected to comply

None.

9. Environmental Standards

9.1 Noise

- 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/N7605C+2 or N7605CK+2 propeller (3-bladed).

10. Operational Suitability Data (OSD)

10.1 Master Minimum Equipment List (MMEL)

CS-GEN-MMEL, initial issue.

III. Technical Characteristic and Operating Limitations

1. Type Design Definition

New Piper Report number VB-1343

For Type Design Definition (TDD) of TCDS relevant changes see Section 2.V Note 8.

2. Description

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

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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 Section 2.IV.1)

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 ² (175 ft ²)

5. Engines

1 Textron Lycoming TIO-540-AE2A

The CAA Engine Type Certification basis is defined in FAA TCDS E14EA (in accordance with UK Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))

5.1 Engine Limits

For all operation:

2500 rpm and 42 inHg MAP (350 hp), sea level to 20,600 ft,

42-1.6 inHg 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 $40.5^{\circ} \pm 0.5^{\circ}$, Low $17.6^{\circ} \pm 0.2^{\circ}$, at 0.762 m (30 in) station.

Diameter: Not over 2.032 m (80 in), not under 2.007 m (79 in).

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 inHg MAP below 2400 rpm.

Do not exceed 32 inHg MAP below 2300 rpm.

The CAA Propeller Type Certification basis is defined in the FAA TCDS P42GL (in accordance with UK Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a)).

6.2 Propeller 2

Hartzell, Hub HC-I3YR-1E, Blade 7890K (3-blade) (S/N 4636132 and up)

Pitch: High $38.7^{\circ} \pm 0.5^{\circ}$, Low $13.65^{\circ} \pm 0.15^{\circ}$, at 0.762 m (30 in) station.

Diameter: 2.032 m (80 in)

Spinner: Hartzell D-6750P.

Governor: Hartzell Model V-5-2 or V-11-1

The CAA Propeller Type Certification basis is defined in the FAA TCDS P33EA (in accordance with UK Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))

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6.3 Propeller 3

Hartzell, Hub HC-I3Y1R-1N/N7605C+2 or N7605CK+2 propeller (3-bladed) (S/N 4636460, S/N 4636462 and up).

Pitch: High $38.0^{\circ} \pm 1.0^{\circ}$, Low $14.0^{\circ} \pm 0.2^{\circ}$, at 0.762 m (30 in) station.

Diameter: 2.032 m (80 in)

Spinner: Hartzell D-6750-1P.

Governor: Hartzell Model V-5-2, V-11-1 or S-1-30

The CAA TCDS is EASA.IM.P.132 which was the current EASA version at 31 December 2020 and therefore the version of the TCDS for the Hartzell propellers accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

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 litres (122 US gal) in 2 wing tanks.

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

8.2 Oil

Maximum: 11.4 litres (12 qts).

Minimum: 2.6 litres (2.75 qts).

9. Air Speeds

Design Manoeuvring Speed, V_A (1950 kg (4300 lb)) 133 KIAS

for S/N 4636196 and up:

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

Day and Night VFR

Day and Night IFR

Known Icing

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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 Section 2.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 Section 2.V Note 3.

14. Datum

2.54 m (100 in) forward of forward pressure bulkhead.

15. Levelling Means

Top or bottom fuselage at B.L. 0 (constant section).

16. Minimum Flight Crew

1 (Pilot)

17. Maximum Passenger Seating Capacity

5, for passenger seating locations see applicable AFM/POH.

18. 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).

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19. Wheels and Tyres

19.1 Nose Wheel Tyre Size

5.00x5, 6 ply.

19.2 Main Wheel Tyre Size

6.00x6, 8 ply.

20. Maximum Cabin Operating Pressure Differential

38.67 kPa (5.5 PSID).

21. Control Surface Movements

For approved control surface deflections see applicable Airplane Maintenance Manual Section 2.IV.2.

IV. Operating and Service Instructions

1. 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/N4636196 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.

2. 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)

3. Service Bulletins and Service Letters

Refer to Piper technical publications portal.

4. Operational Suitability Data (OSD)

4.1 Master Minimum Equipment List (MMEL)

Report No. VB-2803, or later approved revision.

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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/N7605C+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 CAA TDCSN UK.TC.A.00022.
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 centre 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 manoeuvres, including spins, approved."
5. The life limits on components are contained in Chapter 4 of the Airplane Maintenance Manual P/N 761-783 for Serial Numbers 4622001 through 4622200, Airplane Maintenance Manual P/N 761-876 for Serial Numbers 4636001 and Up.
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

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d) Factory installed G1000/GFC700 Phase III option:

Top Dwg No.106800-003

e) Factory installed G1000 NXi option:
modified by drawing 85440

Top Dwg No. 106800-004as

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/N7605C+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 Section 2.V Note 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,

Section 2 PA-46-350P (Malibu Mirage)

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 3. PA-46-500TP (Malibu Meridian)

I. General

1. Type / Variant or Model

1.1 Type

PA-46

1.2 Model

PA-46-500TP

1.3 Variant

–

2. Type Certificate Holder

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

3. Manufacturer

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

4. Airworthiness Category

Normal Category

5. State of Design Authority

FAA

6. Type Certificate Date by FAA

27 September 2000

7. Type Certificate Number by FAA

A25SO

8. EASA Validation Application Date

N/A

9. EASA Type Certification Date

28 September 2003 (in accordance with Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a))

10. Type Certificate Data Sheet Number by EASA

EASA.IM.A.077

II. Certification Basis

1. Reference Date for FAA Certification

12 February 1997.

2. Certification Basis

- a) For the basic PA-46-500TP aeroplane the applicable certification basis is FAR 23. For details on the applicable FAR 23 amendments see Section 3.V Note 6.
- 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 Section 3.V Note 7).
- 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 Section 3.V Note 11).
- 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 Section 3.V Note 12).
- e) For PA-46-500TP aeroplanes equipped with the factory installed G1000 NXi the additional certification basis for installation specific items only is CS-23 amdt.3 (for details on applicable paragraphs see Section 3.V Note 13).

3. Airworthiness Requirements

- a) FAR 23 for the basic PA-46-500TP aeroplane (for applicable amendments see Section 3.III.2.a))a)a)
- 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 Section 3.III.2.b))
- 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 Section 3.III.2.c))
- d) FAR 23 and CS-23 for PA-46-500TP aeroplanes equipped with the factory installed G1000 Phase III option (for applicable amendments see Section 3.III.2.d))
- e) FAR 23 and CS-23 for PA-46-500TP aeroplanes equipped with the factory installed G1000 NXi (for details on applicable paragraphs see Section 3.III.2.e))

4. 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.
- e) 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), CRI F-05, Human Factors in Integrated Avionic Systems, CRI F-90, Security Protection of Aircraft Systems and Networks for PA-46-500TP aeroplanes equipped with the factory installed G1000 NXi.

5. Exemptions

None.

6. Deviations

None.

7. 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.
- c) CRI F-201, Flight Instruments, Stabilized Magnetic Compass, for PA-46-500TP aeroplanes equipped with the factory installed G1000 NXi

8. Requirements elected to comply

None.

9. Environmental Standards**9.1 Noise**

ICAO Annex 16, Volume 1, Chapter 10.

9.2 Fuel Venting

ICAO Annex 16, Volume 2.

10. Operational Suitability Data (OSD)**10.1 Master Minimum Equipment List (MMEL)**

CS-GEN-MMEL, initial issue

III. Technical Characteristic and Operating Limitations**1. Type Design Definition**

New Piper Report number VB-1741

For TDD of TCDS relevant changes see Section 3.V Note 10.

2. Description

Single engine turbo propeller, 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 Section 3.IV.1).

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 ² (183 ft ²)

5. Engines

1 Pratt & Whitney Canada PT6A-42A

The CAA TCDS is EASA.IM.E.078 which was the current EASA version at 31 December 2020 and therefore the version of the TCDS for the Pratt & Whitney engines accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

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 Section 3.V Note 8.

6. Propellers

6.1 Propeller 1

Hartzell, Hub HC-E4N-3Q, Blade E8501B-3.5

Pitch: Low $19.0^{\circ} \pm 0.1^{\circ}$, at 0.762 m (30 in) station.

Diameter: Not over 2.096 m (82.5 in), not under 2.070 m (81.5 in").

Spinner: Hartzell D-630-5P.

Governor: Woodward Model 210 638

The CAA TCDS is EASA.IM.P.133 which was the current EASA version at 31 December 2020 and therefore the version of the TCDS for the Hartzell propellers accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

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 litres (173 US gal) in 2 wing tanks

Usable: 643 litres (170 US gal) in 2 wing tanks

8.2 Oil

Maximum: 11.4 litres (12 qts)

Minimum: not specified

9. Air Speeds

Maximum Operating Manoeuvring 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

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Maximum Landing Gear Extended Speed, V_{LE} 168 KIAS

10. Maximum Operating Altitude

9144 m (30,000 ft)

11. Operational Capability

Day and Night VFR
 Day and Night IFR
 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 Section 3.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 Section 3.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 Section 3.V Note 3.

14. Datum

2.54 m (100 in) forward of forward pressure bulkhead.

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15. Levelling Means

Top or bottom fuselage at B.L. 0 (constant section).

16. Minimum Flight Crew

1 (Pilot)

17. Maximum Passenger Seating Capacity

5, for passenger seating locations see applicable AFM/POH

18. Baggage / Cargo Compartments

45 kg (100 lb) at +6.305 m (+248.23 in)

19. Wheels and Tyres

19.1 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).

19.2 Main Wheel Tyre Size

6.00x6, 8 ply.

20. Maximum Cabin Operating Pressure Differential

38.67 kPa (5.5 PSID).

21. Control Surface Movements

For approved control surface deflections see applicable Airplane Maintenance Manual (Section 3.IV.2).

22. 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

23. 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.

IV. Operating and Service Instructions**1. 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.
- j) ODA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-2748, revision 3 or later approved revision for Model PA-46-500TP equipped with the factory installed G1000 NXi, SN 4697626, 4697631 and up.
- k) ODA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB 2872, revision 1 or later approved revision for Model PA 46-500TP equipped with the factory installed G1000 NXi, SN 4697626, 4697631 and up.

2. Airplane Maintenance Manual (AMM):

P/N 767-005, latest approved revision
(S/N 4697001, 4697003 through 4697398 less 4697340)

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

3. Service Bulletins and Service Letters:

Refer to Piper technical publications portal.

4. Operational Suitability Data (OSD)**4.1 Master Minimum Equipment List (M MEL)**

VB 2744, initial revision or later approved revision for Model PA-46-500TP.

V. Notes**1. Applicable Manufacturer's S/N**

a) Basic aeroplane: S/N 4697001, 4697003 and up

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- 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 CAA TDCSN UK.TC.A.00022.
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 centre of gravity locations must include undrainablesystem 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 manoeuvres, 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. The life limits on components are contained in Chapter 4 of the Airplane Maintenance Manual P/N 767-005 for Serial Numbers 4697001, 4697003 through 4697398 less 4697340. Airplane Maintenance Manual P/N 767-072 for Serial Numbers 4697340, 4697399 and Up.
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.

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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 Section 3.V 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 1200RPM. 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 Section 3.V 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 Section 3.V Note 6.

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)(c)(1)(2)(3)(4)(5)(6)(8)(e)(1)(2), 23.1309(a)(1)(2)(b)(c)(d)(e),

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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

13. The applicable requirements for the factory installation of the Garmin G1000NXi Integrated avionics (Eligible Serial Numbers: 4697626, 4697631 and up) are listed below. These requirements replace the corresponding requirements of Section 3.V Note 12. 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 requirements for the G1000 phase III option shall be considered if not replaced by the requirements listed below.

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)(f), 23.1305(a)(1)(2)(3)(c)(1)(2)(3)(4)(5)(6)(8)(e), 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 4. PA-46R-350T (Malibu Matrix)

I. General

1. Type / Variant or Model

1.1 Type

PA-46

1.2 Model

PA-46R-350T

1.3 Variant

–

2. Type Certificate Holder

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

3. Manufacturer

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

4. Airworthiness Category

Normal Category

5. State of Design Authority

FAA

6. Type Certificate Date by FAA

26 October 2007

7. Type Certificate Number by FAA

A25SO

8. EASA Certification Application Date

11 February 2008

9. EASA Type Certification Date

10 September 2008

10. Type Certificate Data Sheet Number by EASA

EASA.IM.A.077

II. Certification Basis

1. Reference Date for FAA Certification

16 June 2006

2. 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 Section 4.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 Section 4.V Note 9).
- c) For PA-46R-350T aeroplanes equipped with the factory installed HC-I3Y1R-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 Section 4.V Note 10)

3. Airworthiness Requirements

- a) FAR 23 and CS-23 for PA-46R-350T aeroplanes (for applicable amendments see Section 4.II.2.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 Section 4.II.2.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 Section 4.II.2.c) and Section 4.V Note 10).

4. 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.

5. Exemptions

None.

6. Deviations

None.

7. 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.

8. Requirements elected to comply

None.

9. Environmental Standards

9.1 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)

III. Technical Characteristic and Operating 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 Section 4.IV.1)

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 ² (175 ft ²)

5. Engines

1 Textron Lycoming TIO-540-AE2A

The CAA Engine Type Certification basis is defined in FAA TCDS E14EA (in accordance with UK Commission Regulation (EU) No. 748/2012, Article 3, para. 1. (a)).

5.1 Engine Limits

For all operation:

2500 rpm and 42 inHg MAP (350 hp), sea level to 20,600 ft,

42-1.6 inHg MAP decrease per each 1000 ft altitude increase, 20,600 ft to 25,000 ft.

6. Propellers

6.1 Propeller 1

Hartzell, Hub HC-I3YR-1E, Blade 7890K or 7890B

Pitch: High $38.7^{\circ} \pm 0.5^{\circ}$, Low $13.65^{\circ} \pm 0.15^{\circ}$, at 0.762 m (30 in) station

Diameter: 2,032 m (80 in).

Spinner: Hartzell D-6750P.

Governor: Hartzell Model V-11-1

Section 4 PA-46R-350T (Malibu Matrix)

The CAA Propeller Type Certification basis is defined in FAA TCDS P33EA (in accordance with UK 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 $38.0^{\circ} \pm 1.0^{\circ}$, Low $14.0^{\circ} \pm 0.2^{\circ}$, at 0.762 m (30 in) station.

Diameter: 2.032 m (80 in)

Spinner: Hartzell D-6750-1P

Governor: Hartzell Model V-11-1 or S-1-30

The CAA TCDS is EASA.IM.P.132 which was the current EASA version at 31 December 2020 and therefore the version of the TCDS for the Hartzell propellers accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

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 litres (122 US gal) in 2 wing tanks

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

8.2 Oil

Maximum: 11.4 litres (12 qts)

Minimum: 2.6 litres (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

Day and Night VFR

Day and Night IFR

Known Icing

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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 kg (lb)	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 in) forward of forward cockpit bulkhead.

15. Levelling Means

Top or bottom fuselage at B.L. 0 (constant section).

16. Minimum Flight Crew

1 (Pilot).

17. Maximum Passenger Seating Capacity

5, for passenger seating locations see applicable AFM/POH

18. 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)

19. Wheels and Tyres**19.1 Nose Wheel Tyre Size**

5.00x5, 6 ply.

19.2 Main Wheel Tyre Size

6.00x6, 8 ply.

20. Maximum Cabin Operating Pressure Differential

N/A.

21. Control Surface Movements

For approved control surface deflections see applicable Airplane Maintenance Manual (Section 4.IV.2).

IV. Operating and Service Instructions**1. 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.

2. Airplane Maintenance Manual (AMM):

P/N 761-876, latest approved revision

3. Service Bulletins and Service Letters

Refer to Piper technical publications portal.

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-I3Y1R-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 CAA TDCSN UK.TC.A.00022.

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 centre 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 manoeuvres, 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. The life limits on components are contained in Chapter 4 of the Airplane Maintenance Manual P/N 761-876.**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

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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-I3Y1R-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, 23.1589

Section 5. PA-46-600TP (M600)

I. General

1. Type / Variant or Model

1.1 Type

PA-46

1.2 Model

PA-46-600TP

1.3 Variant

–

2. Type Certificate Holder

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

3. Manufacturer

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

4. Airworthiness Category

Normal Category

5. State of Design Authority

FAA

6. Type Certificate Date by FAA

16 June 2016

7. Type Certificate Number by FAA

A25SO

8. EASA Certification Application Date

06 July 2016

9. EASA Type Certification Date

19 May 2017

10. Type Certificate Data Sheet Number by EASA

EASA.IM.A.077

II. Certification Basis

1. Reference Date for FAA Certification

29 May 2012

2. Certification Basis

- a) For the basic PA-46-600TP aeroplane and for the PA- 46-600TP M600 aeroplane equipped with Garmin G3000 (Avionics upgrade) installed per Piper Drawing 46F34A000-002, the applicable certification basis is FAR 23 and CS-23. For details on the applicable FAR 23 and CS-23 certification basis see Section 5.V Note 6).
- b) For the PA-46-600TP M600 aeroplane equipped with factory installed Emergency Autoland (HALO) option installed by Piper Drawing 46G00A000-002 and 46G22A000-001, the applicable certification basis is CS-23 (for details on applicable paragraphs see Section 5.V Note 10).
- c) For the PA-46-600TP aeroplane equipped with factory installed Autothrottle Normal Use option installed by Piper Drawing 46G00A000-003 and 46F76A020-003, the applicable certification basis is CS-23 (for details on applicable paragraphs see Section 5.V Note 11).
- d) For the PA-46-600TP aeroplane equipped with factory installed Garmin G3000 NXi System Software Release 7 and GDL-60 Datalink option installed by Piper Drawing 46F34A000, the applicable certification basis is CS-23 (for details on applicable paragraphs see Section 5.V Note 12).

3. Airworthiness Requirements

- a) FAR 23 and CS-23 for the basic PA-46-600TP aeroplane and for the PA-46-600TP M600 aeroplane equipped with Garmin G3000 (Avionics upgrade) installed per Piper Drawing 46F34A000-002, (for applicable paragraphs see Section 5 V. Note 6)
- b) FAR 23 and CS-23 for the PA-46-600TP M600 aeroplane equipped with factory installed Emergency Autoland (HALO) option installed by Piper Drawing 46G00A000-002 and 46G22A000-001 (CAA Major Change Approval UK.MAJ.00085 refers), (for applicable paragraphs see Section 5V.Note 10)
- c) For the PA-46-600TP aeroplane equipped with factory installed Autothrottle Normal Use option installed by Piper Drawing 46G00A000-003 and 46F76A020-003 (CAA Major Change Approval UK.MAJ.00181 refers), (for applicable paragraphs see Section 5.V Note 11)
- d) For the PA-46-600TP aeroplane equipped with factory installed Garmin G3000 NXi System Software Release 7 and GDL-60 Datalink option installed by Piper Drawing 46F34A000 (CAA Major Change Approval UK.MAJ.0356 refers). (For details on applicable paragraphs see Section 5.V Note 12)

4. Special Conditions

- CRI B-52, Human Factors
- CRI B-01, Handling characteristics for high performance aircraft
- CRI E-58, Turbine engine installation, rain ingestion
- CRI F-601, Security Protection of Aircraft Systems and Networks

5. Exemptions

None.

6. Deviations

None.

7. Equivalent Safety Findings

- 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

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8. Requirements elected to comply

CS-23, Amendment 4, for all applicable CS-23 paragraphs of the basic PA-46-600TP and for the PA-46-600TP M600 aircraft equipped with Garmin G3000 (Avionics upgrade) installed per Piper Drawing 46F34A000-002 (see Section 5.II.2).

9. Environmental Standards**9.1 Noise**

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

9.2 Fuel Venting

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

10. Operational Suitability Data (OSD)**10.1 Master Minimum Equipment List (MMEL)**

CS-GEN-MMEL, initial issue.

III. Technical Characteristic and Operating Limitations**1. Type Design Definition (TDD)**

Piper Aircraft Drawing 46G00A000-001.

For TDD of TCDS relevant changes see Section 5.V Note 9.

2. Description

Single engine turbo propeller, 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 Section 5.IV.1)

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 ² (209 ft ²)

5. Engines

1 Pratt & Whitney Canada PT6A-42A (PWC Build Specification BS1322)

The CAA TCDS is EASA.IM.E.078 which was the current EASA version at 31 December 2020 and therefore the version of the TCDS for the Pratt & Whitney engines accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

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 Section 5.V Note7.

6. Propellers

6.1 Propeller 1

Hartzell, Hub HC-E4N-3Q, Blade E8501K-3.5

Pitch: Low $19.0^{\circ} \pm 0.1^{\circ}$, at 0.762 (30 in) station.
 Diameter: Not over 2.096 m (82.5 in), not under 2.070 m (81.5 in).
 Spinner: Hartzell D-630-5P.
 Governor: Woodward Model 210 695

The CAA TCDS is EASA.IM.P.133 which was the current EASA version at 31 December 2020 and therefore the version of the TCDS for the Hartzell propellers accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

6.2 Propeller 2

Hartzell, Hub 5D3-N338A1, Blade 78D01B

Pitch: Low $17.7^{\circ} \pm 0.1^{\circ}$, at 0.762 (30 in) station
 Feather $83.2^{\circ} \pm 0.5^{\circ}$, at 0.762 (30 in) station
 Reverse $-11.0^{\circ} \pm 0.5^{\circ}$, at 0.762 (30 in) station
 Diameter: 2.096 m (82.5 in), no reduction permitted
 Spinner: Hartzell Standard: 106917(P)
 or Hartzell Light Weight: 105951(P)

Governor: Woodward Model 210 695

The CAA TCDS is EASA.IM.P.136. which was the current EASA version at 31 December 2020 and therefore the version of the TCDS for the Hartzell propellers accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

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 litres (263.2 US gal) in 2 wing tanks
 Usable: 984 litres (260 US gal) in 2 wing tanks

8.2 Oil

Maximum: 11.4 litres (12 qts) for the complete oil system
 Minimum: not specified

9. Air Speeds

Maximum Operating Limit Speeds

V_{MO}	251 KIAS	(250 KCAS)
M_{MO}	0.55 M	

Maximum Operating Manoeuvring Speed, V_O

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

Maximum Flap Extend Speed, V_{FE}

T/O	147 KIAS	(145 KCAS)
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LDG	112 KIAS	(108 KCAS)
Maximum Landing Gear Operating Speed, V _{Lo}		
Extension	170 KIAS	(168 KCAS)
Retraction	130 KIAS	(128 KCAS)
Maximum Landing Gear Extended Speed		
V _{LE}	170 KIAS	(168 KCAS)

10. Maximum Operating Altitude

9144 m (30,000 ft)

11. Operational Capability

Day and Night VFR

Day and Night IFR

Flight Into Known Icing (FIKI) (see Section 5.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 Section 5.V Note3.

14. Datum

2.54 m (100 in) front side of forward pressure bulkhead.

15. Levelling Means:

Top or bottom fuselage at B.L. 0 (constant section).

16. Minimum Flight Crew:

1 (Pilot).

17. Maximum Passenger Seating Capacity:

5, for passenger seating locations see applicable AFM/POH

18. Baggage / Cargo Compartments:

45 kg (100 lb) at +6.304 m (+248.20 in)

19. Wheels and Tyres:**19.1 Nose Wheel Tyre Size**

5.00 x 5, 10 ply TT

19.2 Main Wheel Tyre Size

18 x 5.5, 8 ply, TL

20. Maximum Cabin Operating Pressure Differential

38.61 kPa (5.6 PSID)

21. Control Surface Movements

For approved control surface deflections see applicable Airplane Maintenance Manual (Section 5.IV.2).

22. OAT Operating Limitation

+46 °C (+115 °F) maximum

-54 °C (-65 °F) minimum

23. 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.

IV. Operating and Service Instructions**1. 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.
- b) ODA No. 510620-CE approved Pilots Operating Handbook and FAA approved Airplane Flight Manual Report VB-2793 revision 2 or later approved revision for PA-46-600TP S/N's 4698061, 4698081 and up.
- c) ODA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report VB-2793 revision 6 or later approved revision for PA-46-600TP when equipped with the optional Emergency Autoland (HALO) system S/N's 4698061, 4698081 and up.
- d) ODA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report VB-2793 revision 10 or later approved revision for PA-46-600TP when equipped with the optional Autothrottle Normal Use S/N's 4698061, 4698081 and up.
- e) ODA No. 510620-CE approved Pilots Operating Handbook and FAA approved Airplane Flight Manual Report VB-2793 Rev 13, or later FAA approved version, for PA-46-600TP equipped with G3000 Software Release 7 and GDL 60 datalink S/N's 4698061, 4698081 and up.

2. Airplane Maintenance Manual (AMM):

P/N 767-617, latest approved revision (S/N 4698001 and up)

3. Service Bulletins and Service Letters

Refer to Piper technical publications portal.

4. Operational Suitability Data (OSD)**4.1 Master Minimum Equipment List (MMEL)**

VB-2742, initial revision or later approved revision for Model PA-46-600TP.

V. Notes

1. Applicable Manufacturer's S/N:
 - a) Basic aeroplane: S/N 4698001 and up.
 - b) Garmin G3000 Avionics Upgrade S/N 4698061, 4698081 and up.
 - c) Emergency Autoland (HALO) option S/N 4698061, 4698135 and up.
2. Approved Noise Levels:
See CAA TCDSN UK.TC.A.00022.
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 centre 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 manoeuvres, 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. The life limits on components are contained in Chapter 4 of the Airplane Maintenance Manual P/N 767-617.
6. Certification Basis for basic PA-46-600TP aeroplanes and for the PA-46-600TP M600 aircraft equipped with Garmin G3000 (Avionics upgrade) installed per Piper Drawing 46F34A000-002:
The PA-46-600TP is a derivative product from the PA-46-500TP. As such, the regulations that were applicable to the basic PA-46-500TP that are not affected by the changed product (PA-46-600TP) remain at the original amendment levels. Those regulations that are affected by the change are CS-23, amendment 4, apart from the following regulations which have been granted approval at the amendment levels specified herein:
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;
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 (Np) corresponding to minimum idle gas generator speed (Ng) 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.
9. Type Design Definition of TCDS relevant changes:
 - a) Factory installed Garmin G3000 avionics upgrade: Piper Drawing 46F34A000-002
 - b) Factory installed Emergency Autoland (HALO) option: Piper Drawing 46G00A000-002 and 46G22A000-001

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Section 5 PA-46-600TP (M600)

10. For the PA-46-600TP M600 aircraft equipped with the Emergency Autoland (HALO) option installed by Piper Drawing 46G00A000-002 and 46G22A000-001 (CAA Major Change Approval UK.MAJ.00085 refers) the Certification Basis is amended by the following additional or alternative airworthiness requirements for installation specific items:

CS 23 amdt 4 for the following requirements:

23.21(b), 23.23(a)(b)(3), 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), 23.405, 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, 23.671(a), 23.681, 23.683, 23.685, 23.697(a), 23.729(e), 23.735(a)(b)(c)(d), 23.771(a), 23.777(a)(b), 23.779(a)(2)(b)(1)(2), 23.867, 23.905(b), 23.951(a)(b)(c), 23.954, 23.955(a)(f)(1), 23.961, 23.991(b), 23.993(a)(b)(c)(d)(e), 23.994, 23.995(b)(1)(c)(d), 23.1141(c)(e)(g)(2), 23.1155, 23.1189(c), 23.1301(a)(b)(c)(d), 23.1303, 23.1305(a)(1)(2)(3)(5)(c)(1)(2)(3)(4)(5)(6)(8)(e)(1)(2), 23.1306, 23.1308, CS 23.1309(a)(1)(2)(i)(b)(1)(2)(i)(ii)(3), 23.1310(a)(1)(2)(4)(b), 23.1311(a)(1)(2)(3)(6)(7)(b), 23.1321(a)(c)(e), 23.1322(a)(b)(c)(d)(e), 23.1326, 23.1327(a)(1), 23.1329(a)(1)(b)(c)(e)(f)(g), 23.1335, 23.1337(b)(1), 23.1351(a)(1)(2)(i), 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, 23.1521(a)(b)(1)(3)(4)(c)(1)(3), 23.1523, 23.1525, 23.1529, 23.1541(a)(b), 23.1555(a)(b)(e)(1)(2), 23.1581(a)(c), 23.1583(g)(h)(m), 23.1585(j), 23.1589(a)

11. For the PA-46-600TP M600 aircraft equipped with the Normal Use Autothrottle option installed by Piper Drawings 46G00A000-003 and 46F76A020-003, the additional certification basis for installation of specific items are (These requirements replace the corresponding requirements of note 6 above):

CS 23 at Amendment 4;

23.21(b), 23.23(a)(b)(3), 23.25(a)(1)(iii), 23.143(a)(1)(2)(3)(4)(5)(b)(c), 23.145(b)(2)(4), 23.771(a), 23.777(a)(b), 23.779(b), 23.781(b), 23.1141(c)(e), 23.1301(a)(b)(d), 23.1306, 23.1308, 23.1309(a)(1)(2)(b)(1)(2)(3), 23.1311(a)(2)(6)(7), 23.1321(a)(c)(e), 23.1322(a)(b)(c)(d)(e), 23.1327(a)(1), 23.1335, 23.1351(a)(1)(2)(i)(b)(1), 23.1353(h), 23.1357(a)(b)(c)(d), 23.1359(c), 23.1365, 23.1367(a)(b)(c)(d), 23.1381(a), 23.1431(a)(b)(e), 23.1501(a)(b), 23.1521(a), 23.1523(a)(b)(c), 23.1525, 23.1529, 23.1541(a)(b), 23.1543(b), 23.1555(a)(b), 23.1581(a)(c), 23.1583(b)(1)(2)(m), 23.1585(j),

CS 23 at Amendment 5;

23.2010(a)(b), 23.2500, 23.2510(a), 23.2600(a)(b), 23.2605(a)(b)(c),

12. For the PA-46-600TP M600 aircraft equipped with System Software Release 7 and GDL 60 Datalink installed by Piper Drawing 46F34A000 the additional certification basis for installation specific items are (These requirements replace the corresponding requirements of note 6 above):

CS 23 at Amendment 4:

CS 23.23(a)(b)(3), 23.25(a)(b), 23.301(a)(b)(c), 23.303, 23.305, 23.307(a), 23.561(a)(b)(3)(e), 23.603, 23.605(a), 23.607, 23.609(a), 23.611, 23.613(a)(b), 23.627, 23.771(a), 23.867, 23.1301(a)(b)(c)(d), 23.1306, 23.1308, 23.1309(a)(1)(2)(b)(1)(2)(3), 23.1311(a)(1)(2)(3)(4)(6)(7), 23.1321(e), 23.1322(e), 23.1351(a)(1)(2)(i), 23.1353(h), 23.1357(a)(b)(c)(d), 23.1359(c), 23.1365, 23.1431(a)(b)(e), 23.1501(a)(b), 23.1523, 23.1525, 23.1529, 23.1581(a)(c), 23.1583(g)(h)(m), 23.1585(j), 23.1589(a);,

CS 23 at Amendment 5.

23.2010(a)(b), 23.2500, 23.2505, 23.2510, 23.2600(b), 23.2605(a)(b)(c), and 23.2610

Section 6. Administration**I. Acronyms and Abbreviations**

Acronym / Abbreviation	Definition
°C	Degree Centigrade
°F	Degree Fahrenheit
AFM	Airplane Flight Manual
AMM	Airplane Maintenance Manual
B.L.	Buttock Line
CRI	Certification Review Item
CS	Certification Specifications
EASA	European Union Aviation Safety Agency
EU	European Union
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
ft	Feet
FIKI	Flight Into Known Icing
fwd	Forward
gal	Gallon(s)
hp	Horsepower
ICAO	International Civil Aviation Organization
IFR	Instrumental Flight Rules
in	Inch(es)
inHg	Inch(es) of mercury
lb	Pound(s)
LDG	Landing
kg	Kilogram(s)
KCAS	Knot Calibrated Air Speed
KIAS	Knot Indicated Air Speed
kPa	Kilo Pascal
m	metre(s)
M	Mach number
MAP	Manifold Air Pressure
Max.	Maximum
MMEL	Master Minimum Equipment List
N/A	Not Applicable
Ng	Compressor turbine speed or gas generator speed

Acronym / Abbreviation	Definition
No.	Number
Np	Propeller speed
P/N	Part Number
POH	Pilot's Operating Handbook
PSID	Pounds per Square Inch Differential
qt(s)	Quart(s)
rpm	Revolution per minute
S/N	Serial Number
shp	Shaft horsepower
T/O	Take-Off
TC	Type Certificate
TCDS	Type Certificate Data Sheet
TCDSN	Type Certificate Data Sheet for Noise
TCH	Type Certificate Holder
TDD	Type Design Definition
V _A	Design Manoeuvring Speed
V _{FE}	Maximum Flap Extend Speed
V _{NE}	Never Exceed Speed
V _{LE}	Maximum Landing Gear Extended Speed
V _{LO}	Maximum Landing Gear Operating Speed
V _{NO}	Maximum Structural Cruising Speed
VFR	Visual Flight Rules
U.S.A.	United States of America

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II. Type Certificate Holder Record

TCH Record	Period
Piper Aircraft, Inc. 2926 Piper Drive Vero Beach, Florida 32960 U.S.A.	Present. No changes.

III. Amendment Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	03 Mar 2022	<p>The content of the initial issue of UK CAA TCDS was taken from EASA TCDS No. EASA.IM.A.077 Issue 14 dated 28 March 2019 which was the current EASA version at 31 December 2020 and therefore the version of the TCDS for the Piper PA-46 accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.</p> <p>The following changes have been made:</p> <ul style="list-style-type: none"> ▪ Section 1 paragraph IV.3.: added reference to Piper technical publications portal. ▪ Section 2 paragraph IV.3.: added reference to Piper technical publications portal. ▪ Section 3 paragraph III.24.: moved minimum fuel temperature limitations to a dedicated section. ▪ Section 3 paragraph IV.3.: added reference to Piper technical publications portal. ▪ Section 3 paragraph V. point 5): added reference to life limitations. ▪ Section 5 paragraph III.20.1 and III.20.2: corrected wheel tyre sizes errors. ▪ Section 5 paragraph III.24.: moved minimum fuel temperature limitations to a dedicated section. ▪ The following changes have been made to record the validation of the Emergency Autoland (HALO) system (CAA Major Change Approval UK.MAJ.00085 issued in accordance with Revision 1 to the Special Arrangement between the FAA and the CAA): ▪ Section 5 paragraphs II.2.b) and II.3.b): added references to Emergency Autoland system. ▪ Section 5 paragraph IV.1.c): added to record new Pilot's Operating Handbook. ▪ Section 5 paragraph IV.4.1.b): added to record new Master Minimum Equipment List. ▪ Section 5 paragraph V: revised note 1 to capture applicability of major changes. ▪ Section 5 paragraph V: revised note 5 to amend wing assembly life limit. ▪ Section 5 paragraph V: added note 9.b) and 10. 	Issue 1 03 Mar 2022
2	30 Aug 2022	<p>The following changes have been made in Section 5 to record the validation of the Piper PA-46-600TP Wing Splice Assembly 46W57A100-002 installation and Life Limit (CAA Major Change Approval UK.MAJ.00149):</p>	Issue 1 03 Mar 2022

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TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
		<ul style="list-style-type: none"> ▪ Note 5.V.5 revised to remove part numbers and life limits, instead defining life limits by reference to Chapter 4 of the Airplane Maintenance Manual. <p>The following changes and corrections have been made:</p> <ul style="list-style-type: none"> ▪ Notes 1.V.5, 2.V.5, 3.V.5, and 4.V.5 revised to remove part numbers and life limits, instead defining life limits by reference to Chapter 4 of the applicable Airplane Maintenance Manuals. ▪ Sections 2.II.2.d, 2.II.3.d, 2.II.9.1, 2.III.6.3, 3.V.1.c and 2.V.10; wrong identification “N7605K+2” has been corrected to “N7605C+2. ▪ Section 2.III.6.3 and 2.V.1.c serial number applicability ▪ Section 3.IV.3 serial number applicability ▪ Note 5.V.10 minor changes to wording 	
3	04 Jan 2024	<p>The following changes have been made in Section 5.V paragraph 11 to record the validation of Autothrottle for normal use. Autothrottle was previously CAA approved for emergency use only for Garmin Emergency Autoland (EAL) (CAA Major Change Approval UK.MAJ.00181):</p> <ul style="list-style-type: none"> ▪ Section 5.V paragraph 11 added to show changes to Certification Basis. 	Issue 1 03 Mar 2022
4	15 July 2024	<p>The following changes have been made in Section 5.V to record the validation of Garmin G3000 NXi System Software Release 7 and GDL-60 Datalink (CAA Major Change Approval UK.MAJ.00356):</p> <ul style="list-style-type: none"> ▪ Section 5.V paragraph 12. Added references to system software release 7. ▪ Section 5.V paragraph 11. Added reference to Autothrottle normal use. ▪ Section IV paragraph.1.d) Added reference to POH/AFMVB-2793 revision 10 for Autothrottle normal use. ▪ Section IV paragraph.1.e) Added reference to POH/AFM VB-2793 revision 13 for G3000 NXi system software release 7. ▪ Section 5.V paragraph 12 added to show changes in Certification Basis. 	Issue 1 03 Mar 2022

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