European Union Aviation Safety Agency

EASA

TYPE-CERTIFICATE DATA SHEET

EASA. A.385

Vulcanair P.68

VULCANAIR S.p.A.
Via Giovanni Pascoli, 7
80026 - Casoria (Napoli)
ITALY

For models:

P.68

Variants:
P.68 “Victor”
P.68B “Victor”
P.68R “Victor”
P.68C
P.68C-TC
P.68 “Observer”
P.68 “Observer 2”
P.68TC “Observer

AP68TP

Variants:
AP68TP-300 “Spartacus”
AP68TP-600 “Viator”

Issue 07: 28th January 2020

CONTENT

SECTION E: P.68C-TC

SECTION F: P.68 "Observer"

SECTION G: AP68TP-300 "Spartacus"

SECTION H: P.68TC "Observer"

SECTION I: AP68TP-600 "Viator"

SECTION L: P.68 "Observer 2"

ADMINISTRATIVE SECTION

SECTION A: P.68 "Victor"

A.I. General

1. Data Sheet No.: EASA.A.385	Date: 31 July 2013
2. a) Type:	**P.68**
b) Model:	P.68
c) Variant:	P.68 "Victor"
3. Airworthiness Category:	Normal Category Aeroplanes
4. Type Certificate Holder:	**VULCANAIR S.P.A.** via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
5. Manufacturer:	**VULCANAIR S.P.A**. via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
6. Certification Application Date:	22 January 1969
7. National Certifying Authority	Italian Authority RAI (nowadays ENAC)
8. National Authority Type Certificate Date:	17 November 1971 (RAI TC No. A 151; reissued as ENAC TC No. A 365 dated 25 November 1998)

A.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements:	22 January 1969
2. Airworthiness Requirements:	FAR 23 effective 1 February 1965 including Amdt 1 through 6
3. Special Conditions:	None
4. Exemptions:	None
5. Deviations:	None
6. Equivalent Safety Findings:	None
7. Requirements elected to comply:	None
8. Environmental Standards:	Noise: see TCDSN EASA.A.385 "Fuel venting & engine emission: N/A

9. (Reserved) Additional National Requirements: N/A

10. (Reserved) N/A

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: doc. SPEC VA/147/PRD “Type Design Configuration Data P.68 Victor”

2. Description: Twin engine (piston), high wing monoplane with fixed tricycle landing gear

3. Equipment: Refer to Equipment List of “Aircraft Flight Manual” doc. p/n NOR10.707-12 *(see Note A/1)*

4. Dimensions:

Length:	9,20 m (30,18 ft)
Height:	3,40 m (11,15 ft)
Width (Wing Span):	12,00 m (39,37 ft)

5. Engine:

5.1.1 Model: 2 Lycoming IO-360-A1B, or alternatively
2 Lycoming IO-360-A1B6

5.1.2 Type Certificate: FAA Type Certificate No. 1E10

5.1.3 Limitations: 200 HP at 2700 rpm *(see Note A/2)*
Other engine’s limitations are listed in the “Aircraft Flight Manual”, Operating Limitations Section

6. Load factors: see Aircraft Flight Manual

7. Propeller:

7.1 Model: 2 Hartzell HC-C2YK-2C/C7666A-4, or alternatively
2 Hartzell HC-C2YK-2C( )F/FC7666A-4
Governors: 2 Hartzell model F6-3A, or alternatively
2 Woodward model ( )210655, or alternatively
2 Woodward model ( )210844
Spinners: 2 Hartzell model 836-29

7.2 Type Certificate: FAA Type Certificate No. P-920

7.3 Number of blades: 2

7.4 Diameter: 1,829 m (72 in) - No reduction permitted

7.5 Sense of Rotation: Clockwise

7.6 Propeller limits: Pitch setting at station 0,762 m (30 in):
Max + 81,2° ± 0,3°
Min + 14,2° ± 0,2°

8. Fluids:

8.1 Fuel:	Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070
8.2 Oil:	Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014
8.3 Coolant:	Air

9. Fluid capacities:
(see Note A/3)

9.1 Fuel: *(see Note A/4 or A/5)*	Total:	410 Lt (108 U.S.Gal) [205 Lt (54 U.S.Gal) per wing tank] at +0,770 m (+30,3 in)
	Unusable:	9 Lt (2,5 U.S.Gal) per wing tank
9.2 Oil:	Total:	15 Lt (16 U.S.qt) [7,5 Lt (8 U.S.qt) per engine] at +0,100 m (+4 in)
	Unusable:	1,8 Lt (1,9 U.S.qt)
9.3 Coolant system capacity:	N/A	

10. Air Speeds:
(see Notes A/6a, A/6b)

Never exceed speed V_{NE}:	187,5 KCAS
Max structural cruising speed V_{NO}:	149 KCAS
Design Manoeuvring Speed V_A:	121 KCAS
Flap Extended Speed V_{FE}:	
Flaps 0° - 17°:	152 KCAS
Flaps 17° - 30°:	138 KCAS
Flaps 30° - 35°:	99 KCAS
Minimum Control Speed (Single Engine) V_{MC}:	60 KCAS

11. Maximum Operating Altitude: N/A

12. Allweather Operations Capability: Day/Night-VFR, IFR, depending on installed equipment. Flight in icing conditions is prohibited

13. Maximum Weights:
(see Notes A/6a, A/6b)

Take-Off :	1860 kg (4100 lb)
Landing:	1860 kg (4100 lb)

14. Centre of Gravity Range:
(see Notes A/6a, A/6b)
Rearward Limits: +0,526 m (+20,7 in) aft of datum (34% MAC) for any weight

Forward Limits:	+0,325 m (+12,8 in) aft of datum (21% MAC) at 1860 kg (4100 lb) +0,259 m (+10,2 in) aft of datum (16,8% MAC) at 1503 kg (3313 lb) or less with linear variation for intermediate weights
15. Datum:	Tangent to the wing leading edge
16. Control surface deflections:	

Wing Flaps	Down: 35° ± 2°	
Ailerons	Up: 30° ± 2°	Down: 17° ± 2°
Stabilator (leading edge)	Up: 6° ± 2°	Down: 16° ± 2°
Stabilator tab (trailing edge) (with respect to stabilator chord)	Down: 1° ± 1° (min) 15° ± 1° (max)	
Rudder:	Right: 25° ± 2°	Left: 25° ± 2°
Rudder tab:	Right: 30° ± 2°	Left: 30° ± 2°

17. Levelling Means:	
Lateral:	Across seat tracks
Longitudinal:	Two screws on the fuselage left side, between frames No.8 and 9
18. Minimum Flight Crew:	1 (Pilot)
19. Maximum Seating Capacity: *(see Note A/7)*	Total 6, distributed as follows: 2 at -0,8 m (-31,5 in), 2 at -0,071 m (-2,8 in), 2 at +0,867 m (+34,2 in)
20. Baggage/Cargo Compartments:	
Max Allowable Load:	181 kg (400 lb)
Location:	+1,412 m (+55,6 in)
21. Wheels and Tyres:	see Aircraft Flight Manual
22. (Reserved):	N/A

A.IV. Operating and Service Instructions

1. Flight Manual: *(see Note A/8)*	Document p/n NOR10.707-12 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
2. Technical Manual:	− Airplane Maintenance Manual document p/n NOR10.709-9 and all applicable Supplements Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision − Service Bulletins, Instructions and Letters Refer to doc. p/n NOR10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"
3. Spare Parts Catalogue (IPC):	Document p/n NOR10.711-17 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
4. Instruments and aggregates:	Refer to applicable AFM and AMM

A.V. Notes

NOTE A/1: Basic equipment required by the applicable airworthiness design standard (see certification basis) shall be installed in the aircraft for the first certification.
In addition, the following equipment are required:
- Safe Flight Instrument Corp. pre-stall detector Type 164, or equivalent
- Aircraft Flight Manual (see § A.IV)
- Document p/n NOR10.708-2 Aircraft Flight Manual "Supplement G" for MTOW increase up to 1960 kg (4321 lb)
- Document p/n NOR10.708-1 "Appendix to Aircraft Flight Manual" for MTOW increase up to 1990 kg (4387 lb) and MLW up to 1890 kg (4167 lb)

NOTE A/2: Continuous operation between 2100 and 2350 rpm is not permitted for IO-360-A1B engine.

NOTE A/3: For the determination of the empty weight and associated centre of gravity position, unusable fuel and engine undrainable lubricant must be included as noted below:

- Unusable Fuel:	12,9 kg (28,44 lb) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 kg (12,57 lb) at +0,770 m (+30,3 in) for the auxiliary wing tank *(see Note A/4)*
- Undrainable Lubricant:	0,454 kg (1 lb) at +0,100 m (+4 in)

NOTE A/4: For P.68 aircraft equipped with two auxiliary integral fuel tanks with transfer pumps, the total fuel capacity is 580 Lt (153 U.S.Gal) distributed as follows:

- 2 Main Wing Tanks — 205 Lt (54 U.S.Gal) per tank at +0,770 m (+30,3 in)
  Unusable: 9 Lt (2,5 U.S.Gal) per tank
- 2 Auxiliary Wing Tanks — 85 Lt (22,5 U.S.Gal) per tank at +0,770 m (+30,3 in)
  Unusable: 4 Lt (1 U.S.Gal) per tank

The Aircraft Flight Manual must include the "Supplement L" (ref. RAI approval No.134.591/T dated 27 September 1976)

NOTE A/5: For P.68 aircraft equipped with Partenavia Kit P/N 68-015, the total fuel capacity is 538 Lt (142 U.S.Gal) distributed as follows:

- 2 Main Wing Tanks — 269 Lt (71 U.S.Gal) per tank at +0,770 m (+30,3 in)
  Unusable: 9 Lt (2,5 U.S.Gal) per tank

NOTE A/6: Maximum Masses

NOTE A/6a: P.68 aircraft model, embodying Partenavia Service Bulletin No.21, is approved for:

MTOW - Maximum Take Off Weight of 1960 kg (4321 lb)

with the following applicable limitations (ref. AFM Supplement p/n NOR10.708-2 "Supplement G" - RAI Approval No.124.415/T dated 25 June 1975):

- Air Speeds:

Never exceed speed V_{NE}:	193	KCAS
Maximum structural cruising speed V_{NO}:	153	KCAS
Design Manoeuvring Speed V_A:	125	KCAS
Flap Extended Speed V_{FE}:		
Flaps 0° - 17°	152	KCAS
Flaps 17° - 30°	138	KCAS
Flaps 30° - 35°	99	KCAS
Minimum Control Speed (Single Engine) V_{MC}:	60	KCAS

- Centre of Gravity Range:
  Rearward Limits: +0,526 m (+20,7 in) aft of datum (34% MAC) for any weight

  Forward Limits: +0,325 m (+12,8 in) aft of datum (21% MAC) at 1960 kg (4321 lb);
  +0,259 m (+10,2 in) aft of datum (16,8% MAC) at 1600 kg (3527 lb) or less
  with linear variation for intermediate weights

NOTE A/6b: P.68 aircraft model, embodying Service Bulletins No.21 and No.160, is approved for:

MTOW - Maximum Take Off Weight of 1990 kg (4387 lb), and
MLW - Maximum Landing Weight of 1890 kg (4167 lb)

with the following limitations (ref. AFM Appendix p/n NOR10.708-1 "Appendix to the Aircraft Flight Manual" - RAI Approval No.156.014/T dated 23 April 1979):

- Air Speeds:

Never exceed speed V_{NE}:	193	KCAS
Maximum structural cruising speed V_{NO}:	153	KCAS
Design Manoeuvring Speed V_A:	126	KCAS
Flap Extended Speed V_{FE}:		
Flaps 0° - 17°	152	KCAS
Flaps 17° - 30°	138	KCAS
Flaps 30° - 35°	99	KCAS
Minimum Control Speed (Single Engine) V_{MC}:	60	KCAS

- Centre of Gravity Range:

Rearward Limits:	+0,526 m (+20,7 in) aft of datum (34% MAC) for any weight
Forward Limits:	+0,331 m (+13,03 in) aft of datum (21,4% MAC) at 1990 kg (4387 lb); +0,259 m (+10,2 in) aft of datum (16,8% MAC) at 1600 kg (3527 lb) or less with linear variation for intermediate weights

NOTE A/7: For P.68 aircraft model, embodying Partenavia Service Bulletin No.29, the number of seats is 7, distributed as follows:

2 at -0,8 m (-31,5 in),
2 at -0,071 m (-2,8 in),
3 passengers on the bench seat, at +0,867 m (+34,2 in)

NOTE A/8: The following placard shall be installed in full view of pilot:
"THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS"
Moreover all placards required in the Aircraft Flight Manual shall be installed in the proper location.

SECTION B: P.68B "Victor"

B.I. General

1. Data Sheet No.: EASA.A.385	Date: 31 July 2013
2. a) Type:	**P.68**
b) Model:	P.68
c) Variant:	P.68B "Victor"
3. Airworthiness Category:	Normal Category Aeroplanes
4. Type Certificate Holder:	**VULCANAIR S.P.A.** via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
5. Manufacturer:	**VULCANAIR S.P.A**. via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
6. Certification Application Date:	18 October 1973
7. National Certifying Authority	Italian Authority RAI (nowadays ENAC)
8. National Authority Type Certificate Date:	24 May 1974 (RAI TC No. A 151; reissued as ENAC TC No. A 365 dated 25 November 1998)

B.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements:	18 October 1973
2. Airworthiness Requirements:	FAR 23 effective 1 February 1965 including Amdt 1 through 6
3. Special Conditions:	None
4. Exemptions:	None
5. Deviations:	None
6. Equivalent Safety Findings:	None
7. Requirements elected to comply:	None
8. Environmental Standards:	Noise: see TCDSN EASA.A.385 Fuel venting & engine emission: N/A

9. (Reserved) Additional National Requirements: N/A

10. (Reserved) N/A

B.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: doc. SPEC VA/148/PRD “Type Design Configuration Data P.68B Victor“

2. Description: Twin engine (piston), high wing monoplane with fixed tricycle landing gear

3. Equipment: Refer to Equipment List of “Aircraft Flight Manual” doc. p/n NOR10.707-21 (up to s/n 152), or doc. p/n NOR10.707-9 (from s/n 153 onwards) *(see Note B/1)*

4. Dimensions:
   Length: 9,35 m (30,68 ft)
   Height: 3,40 m (11,15 ft)
   Width (Wing Span): 12,00 m (39,37 ft)

5. Engine:
   5.1.1 Model: 2 Lycoming IO-360-A1B, or alternatively 2 Lycoming IO-360-A1B6
   5.1.2 Type Certificate: FAA Type Certificate No. 1E10
   5.1.3 Limitations: 200 HP at 2700 rpm *(see Note B/2)*
   Other engine’s limitations are listed in the “Aircraft Flight Manual”, Operating Limitations Section

6. Load factors: see Aircraft Flight Manual

7. Propeller:
   7.1 Model: 2 Hartzell HC-C2YK-2C( )F/FC7666A-4
   Governors: 2 Hartzell model F6-3A, or alternatively
   2 Woodward model ( )210655, or alternatively
   2 Woodward model ( )210844
   Spinners: 2 Hartzell model 836-29
   7.2 Type Certificate: FAA Type Certificate No. P-920
   7.3 Number of blades: 2
   7.4 Diameter: 1,829 m (72 in) - No reduction permitted
   7.5 Sense of Rotation: Clockwise
   7.6 Propeller limits: Pitch setting at station 0,762 m (30 in):
   Max + 81,2° ± 0,3°
   Min + 14,2° ± 0,2°

8. Fluids:

8.1 Fuel:	Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070
8.2 Oil:	Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014
8.3 Coolant:	Air

9. Fluid capacities:
(see Note B/3)

9.1 Fuel: *(see Note B/4 or B/5)*	Total:	410 Lt (108 U.S.Gal) [205 Lt (54 U.S.Gal) per wing tank] at +0,770 m (+30,3 in)
	Unusable:	9 Lt (2,5 U.S.Gal) per wing tank
9.2 Oil:	Total:	15 Lt (16 U.S.qt) [7,5 Lt (8 U.S.qt) per engine] at +0,100 m (+4 in)
	Unusable:	1,8 Lt (1,9 U.S.qt)
9.3 Coolant system capacity:	N/A	

10. Air Speeds:
(see Note B/6)

Never exceed speed V_{NE}:	193 KCAS
Max structural cruising speed V_{NO}:	153 KCAS
Design Manoeuvring Speed V_A:	125 KCAS
Flap Extended Speed V_{FE}:	
Flaps 0° - 17°:	152 KCAS
Flaps 17° - 30°:	138 KCAS
Flaps 30° - 35°:	99 KCAS
Minimum Control Speed (Single Engine) V_{MC}:	60 KCAS

11. Maximum Operating Altitude: N/A

12. Allweather Operations Capability: Day/Night-VFR, IFR, depending on installed equipment. Flight in icing conditions is prohibited

13. Maximum Weights:
(see Note B/6)

Take-Off :	1960 kg (4321 lb)
Landing:	1860 kg (4100 lb)

14. Centre of Gravity Range:
(see Note B/6)
Rearward Limits: +0,526 m (+20,7 in) aft of datum (34% MAC) for any weight

Forward Limits:	+0,325 m (+12,8 in) aft of datum (21% MAC) at 1960 kg (4321 lb) +0,259 m (+10,2 in) aft of datum (16,8% MAC) at 1600 kg (3527 lb) or less with linear variation for intermediate weights
15. Datum:	Tangent to the wing leading edge
16. Control surface deflections:	
Wing Flaps	Down: 35° ± 2°
Ailerons	Up: 30° ± 2° Down: 17° ± 2°
Stabilator (leading edge)	Up: 6° ± 2° Down: 16° ± 2°
Stabilator tab (trailing edge) (with respect to stabilator chord)	Down: 1° ± 1° (min) 15° ± 1° (max)
Rudder:	Right: 25° ± 2° Left: 25° ± 2°
Rudder tab:	Right: 30° ± 2° Left: 30° ± 2°
17. Levelling Means:	
Lateral:	Across seat tracks
Longitudinal:	Two screws on the fuselage left side, between frames No.8 and 9
18. Minimum Flight Crew:	1 (Pilot)
19. Maximum Seating Capacity: *(see Note B/7)*	Total 6, distributed as follows: 2 at -0,950 m (-37,4 in), 2 at -0,146 m (-5,7 in), 2 at +0,867 m (+34,2 in)
20. Baggage/Cargo Compartments:	
Max Allowable Load:	181 kg (400 lb)
Location:	+1,542 m (+60,7 in)
21. Wheels and Tyres:	see Aircraft Flight Manual
22. (Reserved):	N/A

B.IV. Operating and Service Instructions

1. Flight Manual: *(see Note B/8)*	**Aircraft up to s/n 152:** doc. p/n NOR10.707-21 **Aircraft from s/n 153:** doc. p/n NOR10.707-9 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
2. Technical Manual:	− Airplane Maintenance Manual document p/n NOR10.709-9 and all applicable Supplements Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision − Service Bulletins, Instructions and Letters Refer to doc. p/n NOR10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"
3. Spare Parts Catalogue (IPC):	Document p/n NOR10.711-9 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
4. Instruments and aggregates:	Refer to applicable AFM and AMM

B.V. Notes

NOTE B/1: Basic equipment required by the applicable airworthiness design standard (see certification basis) shall be installed in the aircraft for the first certification.
In addition, the following equipment are required:

- Safe Flight Instrument Corp. pre-stall detector Type 164, or equivalent
- Aircraft Flight Manual (see § B.IV)
- Document p/n NOR10.708-1 "Appendix to Aircraft Flight Manual" for design weight increase [MTOW increase up to 1990 kg (4387 lb) and MLW up to 1890 kg (4167 lb) - RAI Approval No.156.014/T dated 23 April 1979]

NOTE B/2: Continuous operation between 2100 and 2350 rpm is not permitted for IO-360-A1B engine.

NOTE B/3: For the determination of the empty weight and associated centre of gravity position, unusable fuel and engine undrainable lubricant must be included as noted below:

- Unusable Fuel: 12,9 kg (28,44 lb) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 kg (12,57 lb) at +0,770 m (+30,3 in) for the auxiliary wing tank *(see Note B/4)*
- Undrainable Lubricant: 0,454 kg (1 lb) at +0,100 m (+4 in)

NOTE B/4: For P.68B aircraft equipped with two auxiliary integral fuel tanks with transfer pumps, the total fuel capacity is 580 Lt (153 U.S.Gal) distributed as follows:

- 2 Main Wing Tanks: 205 Lt (54 U.S.Gal) per tank at +0,770 m (+30,3 in)
  Unusable: 9 Lt (2,5 U.S.Gal) per tank
- 2 Auxiliary Wing Tanks: 85 Lt (22,5 U.S.Gal) per tank at +0,770 m (+30,3 in)
  Unusable: 4 Lt (1 U.S.Gal) per tank.

The Aircraft Flight Manual must include the “Supplement L” (ref. RAI approval No.134.591/T dated 27 September 1976)

NOTE B/5: For P.68B aircraft equipped with Partenavia Kit P/N 68-015, the total fuel capacity is 538 Lt (142 U.S.Gal) distributed as follows:

- 2 Main Wing Tanks: 269 Lt (71 U.S.Gal) per tank at +0,770 m (+30,3 in)
  Unusable: 9 Lt (2,5 U.S.Gal) per tank

NOTE B/6: P.68B aircraft embodying Service Bulletin No.160 are approved for:
MTOW - Maximum Take Off Weight of 1990 kg (4387 lb), and
MLW - Maximum Landing Weight of 1890 kg (4167 lb)
with the following limitations (ref. AFM Appendix p/n NOR10.708-1 “Appendix to the Aircraft Flight Manual” - RAI Approval No.156.014/T dated 23 April 1979):

- Air Speeds:

Never exceed speed V_{NE}:	193	KCAS
Maximum structural cruising speed V_{NO}:	153	KCAS
Design Manoeuvring Speed V_A:	126	KCAS
Flap Extended Speed V_{FE}:		
Flaps 0° - 17°	152	KCAS
Flaps 17° - 30°	138	KCAS
Flaps 30° - 35°	99	KCAS
Minimum Control Speed (Single Engine) V_{MC}:	60	KCAS

- Centre of Gravity Range:
  Rearward Limits: +0,526 m (+20,7 in) aft of datum (34% MAC) for any weight
  Forward Limits: +0,331 m (+13,03 in) aft of datum (21,4% MAC) at 1990 kg (4387 lb);
  +0,259 m (+10,2 in) aft of datum (16,8% MAC) at 1600 kg (3527 lb) or less
  with linear variation for intermediate weights

NOTE B/7: For P.68B aircraft embodying Partenavia Service Bulletin No.29, the number of seats is 7, distributed as follows:

2 at -0,950 m (-37,4 in),
2 at -0,146 m (-5,7 in),
3 passengers on the bench seat, at +0,867 m (+34,2 in)

NOTE B/8: The following placard shall be installed in full view of pilot:
“THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS”
Moreover all placards required in the Aircraft Flight Manual shall be installed in the proper location.

SECTION C: P.68R "Victor"

Derived from P.68B "Victor" variant, featuring a retractable landing gear.

C.I. General

1. Data Sheet No.: EASA.A.385	Date: 31 July 2013
2. a) Type:	**P.68**
b) Model:	P.68
c) Variant:	P.68R "Victor"
3. Airworthiness Category:	Normal Category Aeroplanes
4. Type Certificate Holder:	**VULCANAIR S.P.A.** via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
5. Manufacturer:	**VULCANAIR S.P.A**. via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
6. Certification Application Date:	15 February 1973
7. National Certifying Authority	Italian Authority RAI (nowadays ENAC)
8. National Authority Type Certificate Date:	31 July 1978 (RAI TC No. A 151; reissued as ENAC TC No. A 365 dated 25 November 1998)

C.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements:	15 February 1973
2. Airworthiness Requirements: *(see Note C/1)*	FAR 23 effective 1 February 1965 including Amdt 1 through 6, plus: Amdt 7: §§ 23.561 Amdt 14: § 23.507
3. Special Conditions:	None
4. Exemptions:	None
5. Deviations:	None
6. Equivalent Safety Findings:	None

7. Requirements elected to comply:	FAR 23 effective 1 February 1965: Amdt 7: §§ 23.725, 23.727, 23.729, 23.735, 23.867, 23.1435
8. Environmental Standards:	Noise: Noise: see TCDSN EASA.A.385 Fuel venting & engine emission: N/A
9. (Reserved) Additional National Requirements:	N/A
10. Operational Suitability Requirements:	OSD MMEL: CS-GEN-MMEL, Initial Issue dated 31 January 2014

C.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	doc. SPEC VA/149/PRD "Type Design Configuration Data P.68R Victor"	
2. Description:	Twin engine (piston), high wing monoplane with retractable landing gear	
3. Equipment:	Refer to Equipment List: **Aircraft s/n 40:** AFM NOR10.707-30, section 6, RAI approval No.149.624/T dated 27 July 1978 **Aircraft from s/n 430 to s/n 498:** doc. p/n NOR10.719-4 **Aircraft from s/n 508:** AFM10.701-3 *(see Note C/2)*	
4. Dimensions:	Length:	9,55 m (31,33 ft) [only s/n 40: 9,35 m (30,68 ft)]
	Height:	3,40 m (11,15 ft)
	Width (Wing Span):	12,00 m (39,37 ft)
5. Engine:		
5.1.1 Model:	2 Lycoming IO-360-A1B, or alternatively 2 Lycoming IO-360-A1B6	
5.1.2 Type Certificate:	FAA Type Certificate No. 1E10	
5.1.3 Limitations:	200 HP at 2700 rpm *(see Note C/3)* Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitations Section	
6. Load factors:	see Aircraft Flight Manual	
7. Propeller:		
7.1 Model:	2 Hartzell HC-C2YK-2C( )F/FC7666A-4 Governors: 2 Hartzell model F6-3A, or alternatively 2 Woodward model ( )210655, or alternatively 2 Woodward model ( )210844 *(see Notes C/10a and C/10b)* Spinners: 2 Hartzell model 836-29	

7.2 Type Certificate:	FAA Type Certificate No. P-920
7.3 Number of blades:	2
7.4 Diameter:	1,829 m (72 in) - No reduction permitted
7.5 Sense of Rotation:	Clockwise
7.6 Propeller limits:	Pitch setting at station 0,762 m (30 in): Max + 81,2° ± 0,3° Min + 14,2° ± 0,2°

8. Fluids:

8.1 Fuel:	Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070
8.2 Oil:	Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014
8.3 Coolant:	Air

9. Fluid capacities:
(see Note C/4)

9.1 Fuel: *(see Notes C/5, C/6a or C/6b)*	Total: 410 Lt (108 U.S.Gal) [205 Lt (54 U.S.Gal) per wing tank] at +0,770 m (+30,3 in) Unusable: 9 Lt (2,5 U.S.Gal) per wing tank
9.2 Oil:	Total: 15 Lt (16 U.S.qt) [7,5 Lt (8 U.S.qt) per engine] at +0,100 m (+4 in) Unusable: 1,8 Lt (1,9 U.S.qt)
9.3 Coolant system capacity:	N/A

10. Air Speeds:
(see Note C/14)

Never exceed speed V_{NE}:	193 KCAS	
Max structural cruising speed V_{NO}:	153 KCAS	
Design Manoeuvring Speed V_A:	125 KCAS	
Flap Extended Speed V_{FE}:		
Flaps 0° - 17°:	152 KCAS	
Flaps 17° - 30°:	138 KCAS	
Flaps 30° - 35°:	99 KCAS	
Minimum Control Speed (Single Engine) V_{MC}:	60 KCAS	
Max L/G Extended Speed V_{LE}:	112 KCAS	*(see Note C/13)*
Max L/G Operating Speed V_{LO}:	112 KCAS	*(see Note C/13)*

11. Maximum Operating Altitude: N/A

12. Allweather Operations Capability:
(see Note C/21)
Day/Night-VFR, IFR, depending on installed equipment.
Flight in icing conditions is prohibited.

13. Maximum Weights:
(see Note C/14)

Take-Off:	1960 kg (4321 lb)
Landing:	1960 kg (4321 lb)

14. Centre of Gravity Range:
(see Note C/7 and C/14)

Rearward Limits:	+0,526 m (+20,7 in) aft of datum (34% MAC) for any weight
Forward Limits:	+0,325 m (+12,8 in) aft of datum (21% MAC) at 1960 kg (4321 lb) +0,259 m (+10,2 in) aft of datum (16,8% MAC) at 1600 kg (3527 lb) or less with linear variation for intermediate weights

15. Datum: Tangent to the wing leading edge

16. Control surface deflections:

Wing Flaps	Down: 35° ± 2°	
Ailerons	Up: 30° ± 2°	Down: 17° ± 2°
Stabilator (leading edge)	Up: 6° ± 2°	Down: 16° ± 2°
Stabilator tab (trailing edge) (with respect to stabilator chord)	Down: 1° ± 1° (min) 15° ± 1° (max)	
Rudder:	Right: 25° ± 2°	Left: 25° ± 2°
Rudder tab:	Right: 30° ± 2°	Left: 30° ± 2°

17. Levelling Means:

Lateral:	Across seat tracks
Longitudinal:	Two screws on the fuselage left side, between frames No.8 and 9

18. Minimum Flight Crew: 1 (Pilot)

19. Maximum Seating Capacity:
(see Note C/8)
Total 6, distributed as follows:
2 at -0,950 m (-37,4 in),
2 at -0,146 m (-5,7 in),
2 at +0,867 m (+34,2 in)

20. Baggage/Cargo Compartments:

Max Allowable Load:	181 kg (400 lb)
Location:	+1,542 m (+60,7 in)

21. Wheels and Tyres: see Aircraft Flight Manual

22. (Reserved): N/A

C.IV. Operating and Service Instructions

1. Flight Manual: *(see Note C/9)*	**Aircraft s/n 40:** doc. p/n NOR10.707-30 **Aircraft s/n 430:** doc. p/n NOR10.707-30B **Aircraft from s/n 453 to s/n 498:** doc. p/n NOR10.707-30C **Aircraft from s/n 508:** doc. p/n AFM10.701-3 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
2. Technical Manual:	− Airplane Maintenance Manual: **Aircraft s/n 40 and 430:** doc. p/n NOR10.709-9 and all applicable Supplements **Aircraft from s/n 453:** doc. p/n AMM10.702-3 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision − Service Bulletins, Instructions and Letters Refer to doc. p/n NOR10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"
3. Spare Parts Catalogue (IPC):	**Aircraft s/n 40 and 430:** doc. p/n NOR10.711-9 and all applicable Supplements **Aircraft from s/n 453:** doc. p/n IPC10.703-3 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
4. Instruments and aggregates:	Refer to applicable AFM and AMM

C.V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.A.385 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No. 69/2014.

1. Master Minimum Equipment List (MMEL)
   The MMEL is defined in the Vulcanair P.68 Series MMEL, Doc. No. OSD10.704-1, Original or later approved revisions.

C.VI. Notes

NOTE C/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Changes No. **MOD P68/83** "Crew door installation on P.68R variant" and **MOD P68/84** "Emergency window removal and new evacuation instructions on P.68R variant" (which cannot be implemented separately), in addition to P.68R Certification Basis, the following amendments of airworthiness requirements and Equivalent Level Of Safety are applicable:

FAR 23 Amdt 14: § 23.1309
FAR 23 Amdt 49: § 23.807

Equivalent Level Of Safety:
FAR23.807(a)(4) Amdt.49, equivalent to EASA CS23 dated 14/11/2003 §23.807(a)(4) [ref. EASA CRI D-02 issue 3 dated 21/08/2007 "Crew door upgrading to emergency door resulting from emergency window removal"]

Equivalent Level Of Safety:
FAR 23.783(b) Amdt.6 [ref. EASA CRI D-01 issue 2 dated 18/01/2007 "P.68R crew door installation"]

For Type Design Change No. **MOD P68/123** "SAGEM Avionics Integrated cockpit installation (IFR)", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements and Equivalent Level Of Safety are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.771, 23.773, 23.777, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1327, 23.1331, 23.1337, 23.1351, 23.1357, 23.1359, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 1549, 23.1559, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
FAR 23 Amdt 17: § 23.1303

Special Condition:
JAR 23 Amdt 1 par. 23.1309(e) according to JAA INT/POL/23/1 [ref. EASA CRI F-01 issue 3 dated 21/03/2008 "HIRF protection"]

Equivalent Level Of Safety:
JAR 23 effective 11 March 1994 para. 23.1545(b)(1), 23.1545(b)(5), 23.1545(b)(6) [ref. EASA CRI G-01 issue 8 dated 25/03/2008 "Sagem Avionics Display Airspeed Markings"]

For Type Design Change No. **MOD P68/126** "Garmin GNS 430W/530W (WAAS) system installation", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.1, 23.601, 23.603, 23.605, 23.611, 23.1301, 23.1309, 23.1311, 23.1321, 23.1327, 23.1351, 23.1357, 23.1365, 23.1431, 23.1581, 23.1583, 23.1585, 23.1589

For Type Design Change No. **MOD P68/127** "Extension of S-Tec 55X - Autopilot on P68R a/c", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.29, 23.143, 23.253, 23.601, 23.603, 23.605, 23.607, 23.609, 23.685, 23.689, 23.1529, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 18:
§§ 23.1301, 23.1309, 23.1321, 23.1329, 23.1357, 23.1365, 23.1367, 23.1381, 23.1431
FAR 23 Amdt 49: § 23.1359

For Type Design Change No. **MOD P68/150** "Extension from Standard Range configuration to Long Range Configuration for P.68R Model", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.601, 23.603, 23.605, 23.609, 23.611, 23.951, 23.959, 23.963, 23.964, 23.967, 23.969, 23.971, 23.975, 23.993, 23.1501, 23.1581, 23.1585
FAR 23 Amdt 7:
§§ 23.471, 23.473, 23.477, 23.479, 23.483, 23.485, 23.493

For Type Design Change No. **MOD P68/151** "P.68R MTOW increase up to 2063 kg (4548 lb)", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.29, 23.143, 23.253, 23.1301, 23.1311, 23.1321, 23.1501, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1549, 23.1559, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 7: §§ 23.572, 23.1323

For Type Design Change No. **MOD P68/195** "Replacing Cross Bow 500GA with Axitude AX1-200 in Sagem glass cockpit (IFR) for P.68R", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.23, 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.1301, 23.1309, 23.1351, 23.1357, 23.1359
FAR 23 Amdt 57 (on elect to comply basis): § 23.1308

For Type Design Change No. **MOD P68/208** "P.68R, V_{LE}/V_{LO} increase", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.25, 23.29, 23.141, 23.143, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.1301, 23.1322, 23.1501, 23.1529, 23.1541, 23.1563, 23.1583, 23.1585
FAR 23 Amdt 17: § 23.1309

For Type Design Change No. **MOD P68/223** "Fixed oxygen system kit installation", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.601, 23.603, 23.605, 23.625, 23.1357, 23.1367, 23.1501, 23.1529, 23.1541, 23.1581, 23.1583, 23.1585
FAR 23 Amdt 9: § 23.1449
FAR 23 Amdt 17: § 23.1309
FAR 23 Amdt 36: § 23.561
FAR 23 Amdt 43: §§ 23.1441, 23.1443, 23.1445
FAR 23 Amdt 49: §§ 23.1447, 23.1451, 23.1453

For Type Design Change No. **MOD P68/229** "Landing gear emergency extension system, nitrogen reservoir replacement", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994: §§ 23.1501, 23.1529
JAR 23 Amdt 1 effective 01 February 2001: §§ 23.601, 23.603, 23.605
FAR 23 Amdt 14: § 23.1435
FAR 23 Amdt 17: § 23.1309

For Type Design Change No. **MOD P68/240** "Garmin G950 avionics installation", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.623, 23.625, 23.627, 23.771, 23.773, 23.777, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1327, 23.1331, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
FAR 23 Amdt 18: §§ 23.1303, 23.1325

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 "HIRF Protection - Integrated Avionics Systems" [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/247** "Software change to Sagem Avionics integrated cockpit installation", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1301, 23.1309, 23.1311, 23.1545, 23.1581, 23.1583

Equivalent Level Of Safety:
JAR 23 effective 11 March 1994 par. 23.1545(b)(1), 23.1545(b)(5), 23.1545(b)(6) [ref. EASA CRI G-01 issue 5 dated 29/09/2010 "Sagem Avionics Display Airspeed Markings"]

For Type Design Change No. **MOD P68/302** "Installation of MidContinent MD302 Standby Module and activation of TAWS-B and SVS on P.68 series", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.771, 23.773, 23.1301, 23.1309, 23.1311, 23.1321, 23.1322, 23.1331, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1381, 23.1431, 23.1501, 23.1529, 23.1541, 23.1543, 23.1545, 23.1581, 23.1585, 23.1589

FAR 23 Amdt 7: § 23.1323
CS-ACNS Initial Issue: Subpart E Section 1

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 "HIRF Protection - Integrated Avionics Systems" [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/311** "PFD and MFD SW update. Installation of GSR56, GRA5500 and GTX33 with ADS-B Out", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.773, 23.867, 23.963, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1367, 23.1431, 23.1501, 23.1529, 23.1541, 23.1543, 23.1545, 23.1549, 23.1553, 23.1581, 23.1583, 23.1585, 23.1589
CS-ACNS Initial Issue: Subpart B Section 1; Subpart D Section 4

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 "HIRF Protection - Integrated Avionics Systems" [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/320** "GWX 70R Weather Radar installation", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.625, 23.627, 23.867, 23.1301, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1367, 23.1431, 23.1501, 23.1529, 23.1581, 23.1585, 23.1589
FAR 23 Amdt 20: § 23.1401
FAR 23 Amdt 31: § 23.629

For Type Design Change No. **MOD P68/328** "Garmin G1000 Nxi and GFC700 autopilot installation", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.771, 23.773, 23.777, 23.963, 23.1301, 23.1305, 23.1311, 23.1321, 23.1322, 23.1327, 23.1331, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1581, 23.1583, 23.1585, 23.1589

JAR 23 Amdt 0 effective 11 March 1994:
§§ 23.685, 23.689
FAR 23 Amdt 17: § 23.1303
CS-ACNS Initial Issue: Subpart B Section 1; Subpart D Section 2; Subpart D Section 3; Subpart E Section 1
JAA TGL-10: §§ 6.1, 6.2, 6.3, 7.1, 7.2, 8.1, 8.1.1, 8.1.2, 8.2, 8.3, 8.4, 8.5, 9
AMC 20-27A: §§ 6.1, 6.2.1, 6.2.2, 6.3.1, 6.4, 6.5, 7.1, 7.2, 7.3, 7.4, 8.2, 8.4, 8.4.1, 8.4.2, 8.4.3, 9
AMC 20-28: §§ 6.1, 6.2.1, 6.2.2, 6.2.3, 6.3, 6.3.1, 6.3.2, 6.3.3, 6.4, 6.5, 7.1, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 9
AMC 20-15: §§ 4, 5, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 7, 8, 9

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

NOTE C/2: Basic equipment required by the applicable airworthiness design standard (see certification basis) shall be installed in the aircraft for the first certification.
In addition, the following equipment are required:
- Safe Flight Instrument Corp. pre-stall detector Type 164, or equivalent
- Aircraft Flight Manual (see § C.IV)

NOTE C/3: Continuous operation between 2100 and 2350 rpm is not permitted for IO-360-A1B engine.

NOTE C/4: For the determination of the empty weight and associated centre of gravity position, unusable fuel and engine undrainable lubricant must be included as noted below:
- Unusable Fuel: 12,9 kg (28,44 lb) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 kg (12,57 lb) at +0,770 m (+30,3 in) for the auxiliary wing tank *(see Note C/5)*
- Undrainable Lubricant: 0,454 kg (1 lb) at +0,100 m (+4 in)

NOTE C/5: For P.68R aircraft equipped with two auxiliary integral fuel tanks with transfer pumps, the total fuel capacity is 580 Lt (153 U.S.Gal) distributed as follows:
- 2 Main Wing Tanks: 205 Lt (54 U.S.Gal) per tank at +0,770 m (+30,3 in)
  Unusable: 9 Lt (2,5 U.S.Gal) per tank
- 2 Auxiliary Wing Tanks: 85 Lt (22,5 U.S.Gal) per tank at +0,770 m (+30,3 in)
  Unusable: 4 Lt (1 U.S.Gal) per tank.

NOTE C/6a: For P.68R aircraft equipped with Partenavia Kit P/N 68-015, the total fuel capacity is 538 Lt (142 U.S.Gal) distributed as follows:
- 2 Main Wing Tanks: 269 Lt (71 U.S.Gal) per tank at +0,770 m (+30,3 in)
  Unusable: 9 Lt (2,5 U.S.Gal) per tank

NOTE C/6b: For P.68R aircraft embodying MOD P68/150, the following wing fuel tank configurations are approved:

- **STANDARD RANGE**
  Total fuel capacity: 538 Lt (142 U.S.Gal) at +0,770 m (+30.3 in)
  Total unusable fuel: 18 Lt (4,7 U.S.Gal)
- **LONG RANGE**
  Total fuel capacity: 696 Lt (184 U.S.Gal) at +0,770 m (+30.3 in)
  Total unusable fuel: 26 Lt (6,9 U.S.Gal)

NOTE C/7: Displacements of Centre of Gravity due to the landing gear retraction and extension are negligible.

NOTE C/8: For P.68R aircraft embodying Partenavia Service Bulletin No.29, the number of seats is 7, distributed as follows:

2 at -0,950 m (-37,4 in),
2 at -0,146 m (-5,7 in),
3 passengers on the bench seat, at +0,867 m (+34,2 in)

NOTE C/9: The following placard shall be installed in full view of pilot:
"THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS"
Moreover all placards required in the Aircraft Flight Manual shall be installed in the proper location.

NOTE C/10a: P.68R aircraft from s/n 430 onwards may be equipped since new with governors "MT-Propeller" (as per Type Design Change No. MOD P68/111): P-881-30 (left), P-881-31 (right).

NOTE C/10b: P.68R aircraft from s/n 499 onwards may be equipped since new with governors Hartzell model S-2-2K (left) and S-2-3K (right) (as per Type Design Change No. MOD P68/245).

NOTE C/11: P.68R aircraft from s/n 430 onwards may be equipped since new with a SAGEM Avionics Integrated Display System approved for IFR operations, in lieu of the standard instrument panel layout (as per Type Design Changes No. MOD P68/123 and MOD P68/195).

NOTE C/12: P.68R aircraft from s/n 430 onwards may be equipped since new with a S-Tec 55X Autopilot (as per Type Design Change No. MOD P68/127).

NOTE C/13: The following airspeed limitation applies to P.68R aircraft from s/n 430 onwards (as per Type Design Change No. MOD P68/208):

Maximum Landing Gear Extended Speed V_{LE}:	131	KCAS
Maximum Landing Gear Extension Speed V_{LO} (Extension):	131	KCAS
Maximum Landing Gear Retraction Speed V_{LO} (Retraction):	112	KCAS

NOTE C/14: P.68R aircraft embodying Type Design Change No. MOD P68/151 or applying Vulcanair Service Bulletin No. 198 are approved for a Maximum Take Off Weight of 2063 kg (4548 lb), with the following Operating Limitations:

- Air Speeds:
  Never exceed speed V_{NE}: 197 KCAS
  Maximum structural cruising speed V_{NO}: 157 KCAS
  Design Manoeuvring Speed V_A: 127 KCAS
  Flaps Extended Speed V_{FE}:
  15° Flaps 152 KCAS
  30° Flaps 138 KCAS
  35° Flaps 101 KCAS
  Minimum Control Speed (Single Engine) V_{MC}: 60 KCAS
- Maximum Masses:
  Take Off: 2063 kg (4548 lb)
  Landing: 1960 kg (4321 lb)
  Zero Fuel: 1960 kg (4321 lb)
- Centre of Gravity Range:
  Rearward Limits: +0,526 m (+20,7 in) aft of datum (34% MAC) for any weight
  Forward Limits: +0,344 m (+13,54 in) aft of datum (22,2% MAC) at 2063 Kg (4548 lb)
  +0,259 m (+10,20 in) aft of datum (16,8% MAC) at 1600 Kg (3527 lb) or less
  with linear variation between given points.

NOTE C/15: P.68R aircraft from s/n 430 onwards may be equipped with a fixed oxygen system kit (as per Type Design Change No. MOD P68/223).

NOTE C/16: P.68R aircraft from s/n 458 to s/n 498 are equipped with Garmin G950 Integrated Flight Deck System (as per Type Design Change No. MOD P68/240).

NOTE C/17: P.68R aircraft from s/n 458 onwards may be equipped with MidContinent MD302 digital triple stand-by instrument (as per Type Design Change No. MOD P68/302).

NOTE C/18: P.68R aircraft from s/n 487 onwards may be equipped with Garmin GSR56 Satellite Transceiver and/or Garmin GRA5500 Radar Altimeter (as per Type Design Change No. MOD P68/311).

NOTE C/19: P.68R aircraft from s/n 487 onwards may be equipped with Garmin GWX70R Weather Radar installed in the wing tip (as per Type Design Change No. MOD P68/320).

NOTE C/20: P.68R aircraft from s/n 508 onwards are equipped since new with Garmin G1000 NXi Integrated Flight Deck System and GFC700 Autopilot (as per Type Design Change No. MOD P68/328).

NOTE C/21: P.68R aircraft installing Garmin G1000 NXi avionics system are approved for the following PBN Operations:

- P-RNAV (RNAV 1, RNP 1): Precision RNAV Operations in designated European Airspace including departures, arrivals, and approaches up to the point of the Final Approach Fix
- RNP APCH LNAV: GPS Non-Precision Approach without vertical guidance
- RNP APCH LNAV/VNAV: APV BARO with vertical guidance (based on SBAS)
- RNP APCH LPV: APV SBAS Localizer Performance with vertical guidance

NOTE C/22: P.68R aircraft from s/n 508 onwards may be equipped with Garmin GTS8000 ACAS II system (as per Type Design Change No. MOD P68/328).

SECTION D: P.68C

P.68C is the same as P.68B variant except for:

1) Fuselage nose change for weather radar installation
2) Hydraulic shock absorber on nose landing gear
3) Modified fuel tanks and increased capacity
4) Weight & C.G. range increase

D.I. General

1. Data Sheet No.: EASA.A.385	Date: 31 July 2013
2. a) Type:	**P.68**
b) Model:	P.68
c) Variant:	P.68C
3. Airworthiness Category:	Normal Category Aeroplanes
4. Type Certificate Holder:	**VULCANAIR S.P.A.** via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
5. Manufacturer:	**VULCANAIR S.P.A**. via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
6. Certification Application Date:	2 January 1979
7. National Certifying Authority	Italian Authority RAI (nowadays ENAC)
8. National Authority Type Certificate Date:	23 July 1979 (RAI TC No. A 151; reissued as ENAC TC No. A 365 dated 25 November 1998)

D.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements:	2 January 1979
2. Airworthiness Requirements:	FAR 23 effective 1 February 1965 including Amdt 1 through 6 *(see Note D/1)*
3. Special Conditions:	None
4. Exemptions:	None
5. Deviations:	None
6. Equivalent Safety Findings:	None

7. Requirements elected to comply:	None
8. Environmental Standards:	Noise: see TCDSN EASA.A.385 Fuel venting & engine emission: N/A
9. (Reserved) Additional National Requirements:	N/A
10. Operational Suitability Requirements:	OSD MMEL: CS-GEN-MMEL, Initial Issue dated 31 January 2014

D.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	doc. SPEC VA/137/PRD "Type Design Configuration Data P.68C"	
2. Description:	Twin engine (piston), high wing monoplane with fixed tricycle landing gear	
3. Equipment:	Refer to Equipment List: **Aircraft up to s/n 510:** doc. p/n NOR10.719-1 **Aircraft from s/n 511:** AFM10.701-1 *(see Note D/2)*	
4. Dimensions:	Length: Height: Width (Wing Span):	9,55 m (31,33 ft) 3,40 m (11,15 ft) 12,00 m (39,37 ft)
5. Engine:		
5.1.1 Model:	2 Lycoming IO-360-A1B6	
5.1.2 Type Certificate:	FAA Type Certificate No. 1E10	
5.1.3 Limitations:	200 HP at 2700 rpm Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitations Section	
6. Load factors:	see Aircraft Flight Manual	
7. Propeller:		
7.1 Model:	2 Hartzell HC-C2YK-2C( )F/FC7666A-4 Governors: 2 Woodward model ( )210655, or alternatively 2 Woodward model ( )210844 *(see Notes D/10a and D10/b)* Spinners: 2 Hartzell model 836-29	
7.2 Type Certificate:	FAA Type Certificate No. P-920	
7.3 Number of blades:	2	
7.4 Diameter:	1,829 m (72 in) - No reduction permitted	

7.5 Sense of Rotation:	Clockwise
7.6 Propeller limits:	Pitch setting at station 0,762 m (30 in): Max + 81,2° ± 0,3° Min + 14,2° ± 0,2°

8. Fluids:

8.1 Fuel:	Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070
8.2 Oil:	Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014
8.3 Coolant:	Air

9. Fluid capacities:

9.1 Fuel: *(see Notes D/3, D/4 and D/5)*	**Aircraft up to s/n 209:** Total: 410 Lt (108 U.S.Gal) [205 Lt (54 U.S.Gal) per wing tank] at +0,770 m (+30,3 in) Unusable: 9 Lt (2,5 U.S.Gal) per wing tank **Aircraft from s/n 210:** *(see Note D/6)* Total: 538 Lt (142 U.S.Gal) [269 Lt (71 U.S.Gal) per wing tank] at +0,770 m (+30,3 in) Unusable: 9 Lt (2,5 U.S.Gal) per wing tank
9.2 Oil:	Total: 15 Lt (16 U.S.qt) [7,5 Lt (8 U.S.qt) per engine] at +0,100 m (+4 in) Unusable: 1,8 Lt (1,9 U.S.qt)
9.3 Coolant system capacity:	N/A

10. Air Speeds:
(see Note D/7)

Never exceed speed V_{NE}:	193 KCAS
Max structural cruising speed V_{NO}:	153 KCAS
Design Manoeuvring Speed V_A:	126 KCAS
Flap Extended Speed V_{FE}:	
Flaps 0° - 17°:	152 KCAS
Flaps 17° - 30°:	138 KCAS
Flaps 30° - 35°:	99 KCAS
Minimum Control Speed (Single Engine) V_{MC}:	60 KCAS

11. Maximum Operating Altitude:	N/A
12. Allweather Operations Capability: *(see Note D/21)*	Day/Night-VFR, IFR, depending on installed equipment. Flight in icing conditions is prohibited.

13. Maximum Weights:
(see Notes D/7 and D/14)

Take-Off:	1990 kg (4387 lb)
Landing:	1890 kg (4167 lb) up to s/n 380 1980 kg (4365 lb) from s/n 381 onwards

14. Centre of Gravity Range:
(see Note D/7)

Rearward Limits:	+0,526 m (+20,7 in) aft of datum (34% MAC) for any weight
Forward Limits:	+0,300 m (+11,81 in) aft of datum (19,36% MAC) at 1990 kg (4387 lb) +0,230 m (+9,06 in) aft of datum (14,84% MAC) at 1680 kg (3704 lb) or less with linear variation for intermediate weights

15. Datum: Tangent to the wing leading edge

16. Control surface deflections:

Wing Flaps	Down: 35° ± 2°	
Ailerons	Up: 30° ± 2°	Down: 17° ± 2°
Stabilator (leading edge)	Up: 6° ± 2°	Down: 16° ± 2°
Stabilator tab (trailing edge) (with respect to stabilator chord)	Down: 1° ± 1° (min) 15° ± 1° (max)	
Rudder:	Right: 25° ± 2°	Left: 25° ± 2°
Rudder tab:	Right: 30° ± 2°	Left: 30° ± 2°

17. Levelling Means:

Lateral:	Across seat tracks
Longitudinal:	Two screws on the fuselage left side, between frames No.8 and 9

18. Minimum Flight Crew: 1 (Pilot)

19. Maximum Seating Capacity: Total 7, distributed as follows:
2 at -0,950 m (-37,4 in),
2 at -0,146 m (-5,7 in),
3 at +0,867 m (+34,2 in)

20. Baggage/Cargo Compartments:

Max Allowable Load:	181 kg (400 lb)
Location:	+1,542 m (+60,7 in)

21. Wheels and Tyres: see Equipment List doc. p/n NOR10.719-1

22. (Reserved): N/A

D.IV. Operating and Service Instructions

1. Flight Manual: *(see Note D/8)*	**Aircraft up to s/n 402:** doc. p/n NOR10.707-1 **Aircraft from s/n 412 to s/n 510:** doc. p/n NOR10.707-1B **Aircraft from s/n 511:** doc. p/n AFM10.701-1 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
2. Technical Manual:	− Airplane Maintenance Manual: **Aircraft up to s/n 460:** doc. p/n NOR10.709-1B and all applicable Supplements **Aircraft from s/n 462:** doc. p/n AMM10.702-1 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision − Service Bulletins, Instructions and Letters Refer to doc. p/n NOR10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"
3. Spare Parts Catalogue (IPC):	**Aircraft up to s/n 468:** doc. p/n NOR10.711-1 and all applicable Supplements **Aircraft from s/n 469:** doc. p/n IPC10.703-1 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
4. Instruments and aggregates:	Refer to applicable AFM and AMM

D.V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.A.385 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No. 69/2014.

1. Master Minimum Equipment List (MMEL)
   The MMEL is defined in the Vulcanair P.68 Series MMEL, Doc. No. OSD10.704-1, Original or later approved revisions.

D.VI. Notes

NOTE D/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Change No. **MOD P68/14** "Installation of the equipment COM/NAV/GS/GPS GARMIN GNS 430, P/N 010-00139-01", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.1, 23.601, 23.603, 23.605, 23.611, 23.1301, 23.1309, 23.1311, 23.1321, 23.1327, 23.1351, 23.1357, 23.1365, 23.1431, 23.1581, 23.1583, 23.1585

For Type Design Change No. **MOD P68/17** "Interconnected Wing Fuel Tanks", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.1, 23.601, 23.603, 23.605, 23.609, 23.611, 23.951, 23.953, 23.954, 23.957, 23.959, 23.963, 23.965, 23.967, 23.969, 23.971, 23.975, 23.993, 23.1501, 23.1581, 23.1585

For Type Design Change No. **MOD P68/18** "Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System Installation", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.1, 23.251, 23.301, 23.303, 23.305, 23.307, 23.561, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.625, 23.955, 23.963, 23.965, 23.993, 23.1163, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1327, 23.1337, 23.1351, 23.1357, 23.1365, 23.1431, 23.1541, 23.1543, 23.1549, 23.1553, 23.1581, 23.1583, 23.1585
FAR 23 Amdt 43 (on elect to comply basis): § 23.1357
FAR 23 Amdt 45 (on elect to comply basis): § 23.1549
FAR 23 Amdt 48 (on elect to comply basis): § 23.611
FAR 23 Amdt 51 (on elect to comply basis): § 23.1305

Special Condition: SC P68/F01 "Installation VM 1000 (MOD P68/018)", ref. doc. WG-318 "Harmonised FAA NPRM and JAA NPA" dated 18/11/1998; AC/AMJ 20.1317

For Type Design Change No. **MOD P68/31** "Change to the Trim Stabilizer Actuating System", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.405, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.671, 23.677, 23.683, 23.685, 23.689
FAR 23 Amdt 48 (on elect to comply basis): §§ 23.607, 23.611

For Type Design Change No. **MOD P68/52** "Cloud Seeding System Installation (Aero Systems E-16 Silver Iodide Seeding Generators)", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001
§§ 23.21, 23.23, 23.25, 23.29, 23.31, 23.33, 23.45, 23.49, 23.51, 23.53, 23.55, 23.57, 23.59, 23.61, 23.63, 23.65, 23.66, 23.67, 23.69, 23.71, 23.73, 23.75, 23.77, 23.141, 23.143, 23.145, 23.147, 23.149, 23.151, 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, 23.253, 23.629, 23.777, 23.863, 23.867, 23.1301, 23.1309, 23.1322,

23.1351, 23.1357, 23.1359, 23.1365, 23.1367, 23.1501, 23.1505, 23.1507, 23.1511, 23.1513, 23.1519, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1559, 23.1563, 23.1581, 23.1583, 23.1585, 23.1587, 23.1589
FAR 23 Amdt 7: §§ 23.611, 23.615, 23.619, 23.625
FAR 23 Amdt 45: § 23.613, 23.621
FAR 23 Amdt 48: § 23.607

For Type Design Change No. **MOD P68/86** "S-TEC 55X Autopilot Installation", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.29, 23.143, 23.253, 23.601, 23.603, 23.605, 23.607, 23.609, 23.685, 23.689, 23.1529, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 18:
§§ 23.1301, 23.1309, 23.1321, 23.1329, 23.1357, 23.1365, 23.1367, 23.1381, 23.1431
FAR 23 Amdt 49: § 23.1359

For Type Design Change No. **MOD P68/97** "P.68C & P.68C-TC Maximum Zero Fuel Weight Increase" and for Type Design Change No. **MOD P68/124** "Estensione MOD. P68/97", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994: §§ 23.1501, 23.1529, 23.1581, 23.1583, 23.1589
FAR 23 Amdt 7: § 23.572

For Type Design Change No. **MOD P68/123** "SAGEM Avionics Integrated cockpit installation (IFR)", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements and Equivalent Level Of Safety are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.771, 23.773, 23.777, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1327, 23.1331, 23.1337, 23.1351, 23.1357, 23.1359, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 1549, 23.1559, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
FAR 23 Amdt 17: § 23.1303

Special Condition:
JAR 23 Amdt 1 par. 23.1309(e) according to JAA INT/POL/23/1 [ref. EASA CRI F-01 issue 3 dated 21/03/2008 "HIRF protection"]

Equivalent Level Of Safety:
JAR 23 effective 11 March 1994 para. 23.1545(b)(1), 23.1545(b)(5), 23.1545(b)(6) [ref. EASA CRI G-01 issue 8 dated 25/03/2008 "Sagem Avionics Display Airspeed Markings"]

For Type Design Change No. **MOD P68/126** "Garmin GNS 430W/530W (WAAS) system installation", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001
§§ 23.1, 23.601, 23.603, 23.605, 23.611, 23.1301, 23.1309, 23.1311, 23.1321, 23.1327, 23.1351, 23.1357, 23.1365, 23.1431, 23.1581, 23.1583, 23.1585, 23.1589

For Type Design Change No. **MOD P68/157** "Replacing Cross Bow 500GA with AXITUDE AX1-200 in SAGEM glass cockpit (IFR)", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.23, 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.1301, 23.1309, 23.1351, 23.1357, 23.1359, 23.1365, 23.1431, 23.1501, 23.1525, 23.1529, 23.1541, 23.1581, 23.1583, 23.1585, 23.1589.
FAR 23 Amdt 57 (on elect to comply basis): § 23.1308

For Type Design Change No. **MOD P68/223** "Fixed oxygen system kit installation", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.601, 23.603, 23.605, 23.625, 23.1357, 23.1367, 23.1501, 23.1529, 23.1541, 23.1581, 23.1583, 23.1585
FAR 23 Amdt 9: § 23.1449
FAR 23 Amdt 17: § 23.1309
FAR 23 Amdt 36: § 23.561
FAR 23 Amdt 43: §§ 23.1441, 23.1443, 23.1445
FAR 23 Amdt 49: §§ 23.1447, 23.1451, 23.1453

For Type Design Change No. **MOD P68/240** "Garmin G950 avionics installation", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.623, 23.625, 23.627, 23.771, 23.773, 23.777, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1327, 23.1331, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
FAR 23 Amdt 18: §§ 23.1303, 23.1325

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 "HIRF Protection - Integrated Avionics Systems" [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/247** "Software change to Sagem Avionics integrated cockpit installation", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1301, 23.1309, 23.1311, 23.1545, 23.1581, 23.1583

Equivalent Level Of Safety:
JAR 23 effective 11 March 1994 par. 23.1545(b)(1), 23.1545(b)(5), 23.1545(b)(6) [ref. EASA CRI G-01 issue 5 dated 29/09/2010 "Sagem Avionics Display Airspeed Markings"]

For Type Design Change No. **MOD P68/302** "Installation of MidContinent MD302 Standby Module and activation of TAWS-B and SVS on P.68 series", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.771, 23.773, 23.1301, 23.1309, 23.1311, 23.1321, 23.1322, 23.1331, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1381, 23.1431, 23.1501, 23.1529, 23.1541, 23.1543, 23.1545, 23.1581, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
CS-ACNS Initial Issue: Subpart E Section 1

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 "HIRF Protection - Integrated Avionics Systems" [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/311** "PFD and MFD SW update. Installation of GSR56, GRA5500 and GTX33 with ADS-B Out", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.773, 23.867, 23.963, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1367, 23.1431, 23.1501, 23.1529, 23.1541, 23.1543, 23.1545, 23.1549, 23.1553, 23.1581, 23.1583, 23.1585, 23.1589
CS-ACNS Initial Issue: Subpart B Section 1; Subpart D Section 4

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 "HIRF Protection - Integrated Avionics Systems" [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/320** "GWX 70R Weather Radar installation", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.625, 23.627, 23.867, 23.1301, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1367, 23.1431, 23.1501, 23.1529, 23.1581, 23.1585, 23.1589
FAR 23 Amdt 20: § 23.1401
FAR 23 Amdt 31: § 23.629

For Type Design Change No. **MOD P68/328** "Garmin G1000 Nxi and GFC700 autopilot installation", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.771, 23.773, 23.777, 23.963, 23.1301, 23.1305, 23.1311, 23.1321, 23.1322, 23.1327, 23.1331, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1581, 23.1583, 23.1585, 23.1589
JAR 23 Amdt 0 effective 11 March 1994:
§§ 23.685, 23.689
FAR 23 Amdt 17: § 23.1303
CS-ACNS Initial Issue: Subpart B Section 1; Subpart D Section 2; Subpart D Section 3; Subpart E Section 1
JAA TGL-10: §§ 6.1, 6.2, 6.3, 7.1, 7.2, 8.1, 8.1.1, 8.1.2, 8.2, 8.3, 8.4, 8.5, 9
AMC 20-27A: §§ 6.1, 6.2.1, 6.2.2, 6.3.1, 6.4, 6.5, 7.1, 7.2, 7.3, 7.4, 8.2, 8.4, 8.4.1, 8.4.2, 8.4.3, 9
AMC 20-28: §§ 6.1, 6.2.1, 6.2.2, 6.2.3, 6.3, 6.3.1, 6.3.2, 6.3.3, 6.4, 6.5, 7.1, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 9
AMC 20-15: §§ 4, 5, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 7, 8, 9

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

NOTE D/2: Basic equipment required by the applicable airworthiness design standard (see certification basis) shall be installed in the aircraft for the first certification.
In addition, the following equipment are required:
- Safe Flight Instrument Corp. pre-stall detector Type 164, or equivalent
- Aircraft Flight Manual (see § D.IV)

NOTE D/3: For the determination of the empty weight and associated centre of gravity position, unusable fuel and engine undrainable lubricant must be included as noted below:

Aircraft up to s/n 402

Unusable Fuel:	12,9 kg (28,44 lb) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 Kg (12,57 lb) at +0,770 m (+30,3 in) for the auxiliary wing

tank *(see Notes D/4 and D/5a)*
Undrainable Lubricant: 0,454 kg (1 lb) at +0,100 m (+4 in)

Aircraft from s/n 412

Unusable Fuel *(see Note D/5b)*: 12,9 kg (28,44 lb) at +0,770m (+30,3in) for Standard Range Configuration
18,7 kg (41,23 lb) at +0,770m (+30,3in) for Long Range Configuration
Undrainable Lubricant: 0,454 kg (1 lb) at +0,100 m (+4 in)

NOTE D/4: For P.68C s/n 209 aircraft equipped with auxiliary integral fuel tanks, the total fuel capacity is 580 Lt (153 U.S.Gal) distributed as follows:

- 2 Main Wing Tanks: 205 Lt (54 U.S.Gal) per tank
  at +0,770 m (+30,3 in)
  Unusable: 9 Lt (2,5 U.S.Gal) per tank
- 2 Auxiliary Wing Tanks: 85 Lt (22,5 U.S.Gal) per tank
  at +0,770 m (+30,3 in)
  Unusable: 4 Lt (1 U.S.Gal) per tank

NOTE D/5a: P.68C Aircraft embodying the Partenavia Service Bulletin No.78 can be equipped with two auxiliary fuel tanks with transfer pumps (Kit P/N 68-050). For these aircraft the total wing fuel capacity is 696 Lt (184 U.S.Gal) distributed as follows:

- 2 Main Wing Tanks: 269 Lt (71 U.S.Gal) per tank
  at +0,770 m (+30,3 in)
  Unusable: 4 Lt (1 U.S.Gal) per tank
- 2 Auxiliary Wing Tanks: 79 Lt (21 U.S.Gal) per tank
  at +0,770 m (+30,3 in)
  Unusable: 4 Lt (1 U.S.Gal) per tank

For Aircraft embodying the SB No.78, the Aircraft Flight Manual must include the Supplement L/1.

NOTE D/5b: For P.68C aircraft from s/n 412 onwards (embodying MOD P68/17) the following wing fuel tank configurations are approved:

- **STANDARD RANGE**
  Total fuel capacity: 538 Lt (142 U.S.Gal) at +0,770 m (+30.3 in)
  Total unusable fuel: 18 Lt (4,7 U.S.Gal)
- **LONG RANGE**
  Total fuel capacity: 696 Lt (184 U.S.Gal) at +0,770 m (+30.3 in)
  Total unusable fuel: 26 Lt (6,9 U.S.Gal)

NOTE D/6: P.68C aircraft can be equipped with under-wing auxiliary fuel tanks with transfer pumps (Kit P/N 68-034) with the following additional limitations:

- Air Speeds:
  Never exceed speed V_{NE}: 175 KCAS
  Other air speeds are unchanged
- Fuel Capacity:
  Total fuel capacity is 738 Lt (195 U.S.Gal) distributed as follows:
  2 Main Wing Tanks: 269 Lt (71 U.S.Gal) per tank

	at +0,770 m (+30,3 in) Unusable: 9 Lt (2,5 U.S. gal) per tank
2 Under-Wing Tanks:	100 Lt (26 U.S.Gal) per tank at +0,440 m (+17,3 in) Unusable: 0 Lt per tank

NOTE D/7: P.68C aircraft equipped with the Kit P/N 68/051 (as per Partenavia Service Bulletin No.79), is approved for a Maximum Take-Off Weight and a Maximum Landing Weight respectively of 2084 kg (4594 lb) and 1980 kg (4365 lb), with the following Operating Limitations:

- Air Speeds:
  Never exceed speed V_{NE}: 194 KCAS
  Maximum structural cruising speed V_{NO}: 154 KCAS
  Design Manoeuvring Speed V_A: 132 KCAS

  Flaps Extended Speed V_{FE}:
  15° Flaps 152 KCAS
  35° Flaps 103 KCAS
  Minimum Control Speed (Single Engine) V_{MC}: 60 KCAS
- Maximum Masses:
  Taxi and Ramp: 2100 kg (4630 lb)
  Take Off: 2084 kg (4594 lb)
  Landing: 1980 kg (4365 lb)
  Zero Fuel (*see Note D/14*): 1890 kg (4167 lb)
- Centre of Gravity Range:
  Rearward Limits: +0,481 m (+18,92 in) aft of datum (31% MAC) for any weight
  Forward Limits: +0,325 m (+12,80 in) aft of datum (21% MAC) at 2100 kg (4630 lb);
  +0,320 m (+12,60 in) aft of datum (20,6% MAC) at 2084 kg (4594 lb) or less
  +0,230 m (+9,06 in) aft of datum (14,84% MAC) at 1680 kg (3704 lb) or less
  with linear variation for intermediate weights

For aircraft embodying the Service Bulletin No.79, the Aircraft Flight Manual must include the approved Supplement N.

NOTE D/8: The following placard shall be installed in full view of pilot:
"THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS"
Moreover all placards required in the Aircraft Flight Manual shall be installed in the proper location.

NOTE D/9: P.68C aircraft from s/n 330 onwards can be equipped since new with a crew door on the fuselage right side as per Partenavia DWG 2.2503. In this case, the Aircraft Flight Manual must include the Supplement I (ENAC approval No.199.649/T dated 17 April 1984).

NOTE D/10a: P.68C aircraft from s/n 443 onwards may be equipped since new with governors “MT-Propeller” (as per Type Design Change No. MOD P68/111): P-881-30 (left), P-881-31 (right).

NOTE D/10b: P.68C aircraft from s/n 499 onwards may be equipped since new with governors Hartzell model S-2-2K (left) and S-2-3K (right) (as per Type Design Change No. MOD P68/245).

NOTE D/11: P.68C aircraft from s/n 412 onwards may be equipped since new with a “Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System” electronic powerplant instrumentation system, in lieu of the standard powerplant instrumentation (as per Type Design Change No. MOD P68/18).

NOTE D/12: P.68C aircraft from s/n 443 onwards may be equipped since new with a SAGEM Avionics Integrated Display System approved for IFR operations, in lieu of the standard instrument panel layout (as per Type Design Changes No. MOD P68/123 and MOD P68/157).

NOTE D/13: P.68C aircraft from s/n 443 onwards may be equipped since new with a S-Tec 55X Autopilot (as per Type Design Change No. MOD P68/86).

NOTE D/14: P.68C aircraft from s/n 402 onwards are approved for a Maximum Zero Fuel Weight (MZFW) of 1967 kg (as per Type Design Changes No. MOD P68/97 and No. MOD P68/124).

NOTE D/15: P.68C aircraft from s/n 402 onwards may be equipped with a fixed oxygen system kit (as per Type Design Change No. MOD P68/223).

NOTE D/16: P.68C aircraft from s/n 469 to s/n 510 are equipped with Garmin G950 Integrated Flight Deck System (as per Type Design Change No. MOD P68/240).

NOTE D/17: P.68C aircraft from s/n 469 onwards may be equipped with MidContinent MD302 digital triple stand-by instrument (as per Type Design Change No. MOD P68/302).

NOTE D/18: P.68C aircraft from s/n 495 onwards may be equipped with Garmin GSR56 Satellite Transceiver and/or Garmin GRA5500 Radar Altimeter (as per Type Design Change No. MOD P68/311).

NOTE D/19: P.68C aircraft from s/n 495 onwards may be equipped with Garmin GWX70R Weather Radar installed in the wing tip (as per Type Design Change No. MOD P68/320).

NOTE D/20: P.68C aircraft from s/n 511 onwards are equipped since new with Garmin G1000 NXi Integrated Flight Deck System and GFC700 Autopilot (as per Type Design Change No. MOD P68/328).

NOTE D/21: P.68C aircraft installing Garmin G1000 NXi avionics system are approved for the following PBN Operations:

- P-RNAV (RNAV 1, RNP 1): Precision RNAV Operations in designated European Airspace including departures, arrivals, and approaches up to the point of the Final Approach Fix
- RNP APCH LNAV: GPS Non-Precision Approach without vertical guidance
- RNP APCH LNAV/VNAV: APV BARO with vertical guidance (based on SBAS)
- RNP APCH LPV: APV SBAS Localizer Performance with vertical guidance

NOTE D/22: P.68C aircraft from s/n 511 onwards may be equipped with Garmin GTS8000 ACAS II system (as per Type Design Change No. MOD P68/328).

SECTION E: P.68C-TC

P.68C-TC is the same as P.68C variant except for turbocharged engines

E.I. General

1. Data Sheet No.: EASA.A.385	Date: 31 July 2013
2. a) Type:	**P.68**
b) Model:	P.68
c) Variant:	P.68C-TC
3. Airworthiness Category:	Normal Category Aeroplanes
4. Type Certificate Holder:	**VULCANAIR S.P.A.** via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
5. Manufacturer:	**VULCANAIR S.P.A**. via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
6. Certification Application Date:	2 January 1979
7. National Certifying Authority	Italian Authority RAI (nowadays ENAC)
8. National Authority Type Certificate Date:	29 April 1980 (RAI TC No. A 151; reissued as ENAC TC No. A 365 dated 25 November 1998)

E.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements:	2 January 1979
2. Airworthiness Requirements: *(see Note E/1)*	FAR 23 effective 1 February 1965 including Amdt 1 through 6 for Sections A, B, C and D, plus Amdt 1 through 18 for Sections E, F and G, plus Amdt 7 for §§ 23.909, 23.1043, 23.1047, 23.1143, 23.1305, 23,1527, 23.1583
3. Special Conditions:	None
4. Exemptions:	None
5. Deviations:	None
6. Equivalent Safety Findings:	None
7. Requirements elected to comply:	None

8. Environmental Standards:	Noise: see TCDSN EASA.A.385 Fuel venting & engine emission: N/A
9. (Reserved) Additional National Requirements:	N/A
10. Operational Suitability Requirements:	OSD MMEL: CS-GEN-MMEL, Initial Issue dated 31 January 2014

E.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	doc. SPEC VA/139/PRD "Type Design Configuration Data P.68C-TC"	
2. Description:	Twin engine (turbocharged, piston), high wing monoplane with fixed tricycle landing gear	
3. Equipment:	Refer to Equipment List of "Aircraft Flight Manual": **Aircraft up to s/n 392:** AFM NOR10.707-20 (for aircraft powered by TO-360-C1A6D engines), and AFM NOR10.707-2 (for aircraft powered by TIO-360-C1A6D engines) **Aircraft from s/n 467 to s/n 509:** AFM NOR10.707-2B **Aircraft from s/n 514:** AFM10.701-5 *(see Note E/2)*	
4. Dimensions:	Length: Height: Width (Wing Span):	9,55 m (31,33 ft) 3,40 m (11,15 ft) 12,00 m (39,37 ft)
5. Engine:		
5.1.1 Model:	2 Lycoming TO-360-C1A6D	
5.1.2 Type Certificate:	FAA Type Certificate No. E26EA	
5.1.3 Limitations: *(see Note E/3)*	2575 rpm, 42" Hg (210 HP) Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitations Section	
	Or alternatively	
5.2.1 Model:	2 Lycoming TIO-360-C1A6D	
5.2.2 Type Certificate:	FAA Type Certificate No. E16EA	
5.2.3 Limitations: *(see Note E/3)*	2575 rpm, 44" Hg (210 HP) Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitations Section	
6. Load factors:	see Aircraft Flight Manual	
7. Propeller:		
7.1 Model:	2 Hartzell HC-C2YK-2C( )F/FC7666A-0 Governors: 2 Woodward model ( )210655, or alternatively 2 Woodward model ( )210844 *(see Note E/11)*	

Spinners: 2 Hartzell model 836-29

7.2 Type Certificate: FAA Type Certificate No. P-920

7.3 Number of blades: 2

7.4 Diameter: Max 1,930 m (76 in) - Min 1,905 m (75 in)

7.5 Sense of Rotation: Clockwise

7.6 Propeller limits: Pitch setting at station 0,762 m (30 in):
Max + 81° ± 1°
Min + 15,9° ± 0,1°

8. Fluids:

8.1 Fuel: Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070

8.2 Oil: Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014

8.3 Coolant: Air

9. Fluid capacities:

9.1 Fuel: *(see Notes E/4, E/5a or E/5b)*
Total: 538 Lt (142 U.S.Gal)
[269 Lt (71 U.S.Gal) per wing tank]
at +0,770 m (+30,3 in)
Unusable: 9 Lt (2,5 U.S.Gal) per wing tank
(see Notes E/6 and E/7)

9.2 Oil: Total: 15 Lt (16 U.S.qt)
[7,5 Lt (8 U.S.qt) per engine]
at +0,100 m (+4 in)
Unusable: 1,8 Lt (1,9 U.S.qt)

9.3 Coolant system capacity: N/A

10. Air Speeds: *(see Note E/10)*

Never exceed speed V_{NE}:	193 KCAS
Max structural cruising speed V_{NO}:	153 KCAS
Design Manoeuvring Speed V_A:	126 KCAS
Flap Extended Speed V_{FE}:	
Flaps 0° - 17°:	152 KCAS
Flaps 17° - 30°:	138 KCAS
Flaps 30° - 35°:	99 KCAS
Minimum Control Speed (Single Engine) V_{MC}:	63 KCAS

11. Maximum Operating Altitude: 20000 ft (6096 m)

12. Allweather Operations Capability: *(see Note E/22)*
Day/Night-VFR, IFR, depending on installed equipment.
Flight in icing conditions is prohibited.

13. Maximum Weights:
(see Notes E/10 and E/15)

Take-Off :	1990 kg (4387 lb)
Landing:	1890 kg (4167 lb) up to s/n 380 1980 kg (4365 lb) from s/n 381 onwards

14. Centre of Gravity Range:
(see Note E/10)

Rearward Limits:	+0,526 m (+20,7 in) aft of datum (34% MAC) for any weight
Forward Limits:	+0,300 m (+11,81 in) aft of datum (19,36% MAC) at 1990 kg (4387 lb) +0,230 m (+9,06 in) aft of datum (14,84% MAC) at 1680 kg (3704 lb) or less with linear variation for intermediate weights

15. Datum: Tangent to the wing leading edge

16. Control surface deflections:

Wing Flaps	Down: 35° ± 2°	
Ailerons	Up: 30° ± 2°	Down: 17° ± 2°
Stabilator (leading edge)	Up: 6° ± 2°	Down: 16° ± 2°
Stabilator tab (trailing edge) (with respect to stabilator chord)	Down: 1° ± 1° (min) 15° ± 1° (max)	
Rudder:	Right: 25° ± 2°	Left: 25° ± 2°
Rudder tab:	Right: 30° ± 2°	Left: 30° ± 2°

17. Levelling Means:

Lateral:	Across seat tracks
Longitudinal:	Two screws on the fuselage left side, between frames No.8 and 9

18. Minimum Flight Crew: 1 (Pilot)

19. Maximum Seating Capacity: Total 7, distributed as follows:
2 at -0,950 m (-37,4 in),
2 at -0,146 m (-5,7 in),
3 at +0,867 m (+34,2 in)

20. Baggage/Cargo Compartments:

Max Allowable Load:	181 kg (400 lb)
Location:	+1,542 m (+60,7 in)

21. Wheels and Tyres: see Aircraft Flight Manual

22. (Reserved): N/A

E.IV. Operating and Service Instructions

1. Flight Manual: *(see Note E/8)*	**For aircraft powered by TO-360-C1A6D engine:** doc. p/n NOR10.707-20 **For aircraft powered by TIO-360-C1A6D engine up to s/n 392:** doc. p/n NOR10.707-2 **For aircraft powered by TIO-360-C1A6D engine from s/n 467 to s/n 509:** doc. p/n NOR10.707-2B **For aircraft powered by TIO-360-C1A6D engine from s/n 514:** doc. p/n AFM10.701-5 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
2. Technical Manual:	− Airplane Maintenance Manual: **Aircraft up to s/n 392:** doc. p/n NOR10.709-1B plus doc. NOR10.709-2 and all applicable Supplements **Aircraft from s/n 467:** doc. p/n AMM10.702-1 Refer to doc. p/n NOR10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision − Service Bulletins, Instructions and Letters Refer to doc. p/n NOR10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"
3. Spare Parts Catalogue (IPC):	**Aircraft up to s/n 467:** doc. p/n NOR10.711-1 plus doc. p/n NOR10.711-2 **Aircraft from s/n 472:** doc. p/n IPC10.703-5 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
4. Instruments and aggregates:	Refer to applicable AFM and AMM

E.V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.A.385 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No. 69/2014.

1. Master Minimum Equipment List (MMEL)

The MMEL is defined in the Vulcanair P.68 Series MMEL, Doc. No. OSD10.704-1, Original or later approved revisions.

E.VI. Notes

NOTE E/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Change No. **MOD P68/14** "Installation of the equipment COM/NAV/GS/GPS GARMIN GNS 430, P/N 010-00139-01", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.1, 23.601, 23.603, 23.605, 23.611, 23.1301, 23.1309, 23.1311, 23.1321, 23.1327, 23.1351, 23.1357, 23.1365, 23.1431, 23.1581, 23.1583, 23.1585

For Type Design Change No. **MOD P68/17** "Interconnected Wing Fuel Tanks", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.1, 23.601, 23.603, 23.605, 23.609, 23.611, 23.951, 23.953, 23.954, 23.957, 23.959, 23.963, 23.965, 23.967, 23.969, 23.971, 23.975, 23.993, 23.1501, 23.1581, 23.1585

For Type Design Change No. **MOD P68/18** "Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System Installation", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.1, 23.251, 23.301, 23.303, 23.305, 23.307, 23.561, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.625, 23.955, 23.963, 23.965, 23.993, 23.1163, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1327, 23.1337, 23.1351, 23.1357, 23.1365, 23.1431, 23.1541, 23.1543, 23.1549, 23.1553, 23.1581, 23.1583, 23.1585
FAR 23 Amdt 43 (on elect to comply basis): § 23.1357
FAR 23 Amdt 45 (on elect to comply basis): § 23.1549
FAR 23 Amdt 48 (on elect to comply basis): § 23.611
FAR 23 Amdt 51 (on elect to comply basis): § 23.1305

Special Condition: SC P68/F01 "Installation VM 1000 (MOD P68/018)", ref. doc. WG-318 "Harmonised FAA NPRM and JAA NPA" dated 18/11/1998; AC/AMJ 20.1317

For Type Design Change No. **MOD P68/31** "Change to the Trim Stabilizer Actuating System", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.405, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.671, 23.677, 23.683, 23.685, 23.689
FAR 23 Amdt 48 (on elect to comply basis): §§ 23.607, 23.611

For Type Design Change No. **MOD P68/73** "P68C-TC MTOW increase up to 2084 kg", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

FAR 23 Amdt 7: §§ 23.909, 23.1043, 23.1047, 23.1143, 23.1147, 23.1305, 23.1527, 23.1583
FAR 23 Amdt 14: §§ 23.507, 23.509
FAR 23 Amdt 17: § 23.1322
FAR 23 Amdt 20: § 23.1401
FAR 23 Amdt 31: § 23.629
FAR 23 Amdt 36: §§ 23.2, 23.561

FAR 36 Amdt 16: Appendix G §§ G36.1, G36.101, G36.103, G36.105, G36.107, G36.109, G36.111, G36.201, G36.203, G36.301
ICAO Annex 16, Volume I, Chapter 10

For Type Design Change No. **MOD P68/86** "S-TEC 55X Autopilot Installation", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.29, 23.143, 23.253, 23.601, 23.603, 23.605, 23.607, 23.609, 23.685, 23.689, 23.1529, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 18:
§§ 23.1301, 23.1309, 23.1321, 23.1329, 23.1357, 23.1365, 23.1367, 23.1381, 23.1431
FAR 23 Amdt 49: § 23.1359

For Type Design Change No. **MOD P68/97** "P.68C & P.68C-TC Maximum Zero Fuel Weight increase", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994: §§ 23.1501, 23.1529, 23.1581, 23.1583, 23.1589
FAR 23 Amdt 7: § 23.572

For Type Design Change No. **MOD P68/123** "SAGEM Avionics Integrated cockpit installation (IFR)", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements and Equivalent Level Of Safety are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.771, 23.773, 23.777, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1327, 23.1331, 23.1337, 23.1351, 23.1357, 23.1359, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 1549, 23.1559, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
FAR 23 Amdt 17: § 23.1303

Special Condition:
JAR 23 Amdt 1 par. 23.1309(e) according to JAA INT/POL/23/1 [ref. EASA CRI F-01 issue 3 dated 21/03/2008 "HIRF protection"]

Equivalent Level Of Safety:
JAR 23 effective 11 March 1994 para. 23.1545(b)(1), 23.1545(b)(5), 23.1545(b)(6) [ref. EASA CRI G-01 issue 8 dated 25/03/2008 "Sagem Avionics Display Airspeed Markings"]

For Type Design Change No. **MOD P68/126** "Garmin GNS 430W/530W (WAAS) system installation", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001
§§ 23.1, 23.601, 23.603, 23.605, 23.611, 23.1301, 23.1309, 23.1311, 23.1321, 23.1327, 23.1351, 23.1357, 23.1365, 23.1431, 23.1581, 23.1583, 23.1585, 23.1589

For Type Design Change No. **MOD P68/157** "Replacing Cross Bow 500GA with AXITUDE AX1-200 in SAGEM glass cockpit (IFR)", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.23, 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.1301, 23.1309, 23.1351, 23.1357, 23.1359, 23.1365, 23.1431, 23.1501, 23.1525, 23.1529, 23.1541, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 57 (on elect to comply basis): § 23.1308

For Type Design Change No. **MOD P68/223** "Fixed oxygen system kit installation", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.601, 23.603, 23.605, 23.625, 23.1357, 23.1367, 23.1501, 23.1529, 23.1541, 23.1581, 23.1583, 23.1585
FAR 23 Amdt 9: § 23.1449
FAR 23 Amdt 17: § 23.1309
FAR 23 Amdt 36: § 23.561
FAR 23 Amdt 43: §§ 23.1441, 23.1443, 23.1445
FAR 23 Amdt 49: §§ 23.1447, 23.1451, 23.1453

For Type Design Change No. **MOD P68/240** "Garmin G950 avionics installation", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.623, 23.625, 23.627, 23.771, 23.773, 23.777, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1327, 23.1331, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
FAR 23 Amdt 18: §§ 23.1303, 23.1325

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 “HIRF Protection - Integrated Avionics Systems” [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 “Human Factors in Integrated Avionics Systems” [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/247** “Software change to Sagem Avionics integrated cockpit installation”, in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1301, 23.1309, 23.1311, 23.1545, 23.1581, 23.1583

Equivalent Level Of Safety:
JAR 23 effective 11 March 1994 par. 23.1545(b)(1), 23.1545(b)(5), 23.1545(b)(6) [ref. EASA CRI G-01 issue 5 dated 29/09/2010 “Sagem Avionics Display Airspeed Markings”]

For Type Design Change No. **MOD P68/302** “Installation of MidContinent MD302 Standby Module and activation of TAWS-B and SVS on P.68 series”, in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.771, 23.773, 23.1301, 23.1309, 23.1311, 23.1321, 23.1322, 23.1331, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1381, 23.1431, 23.1501, 23.1529, 23.1541, 23.1543, 23.1545, 23.1581, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
CS-ACNS Initial Issue: Subpart E Section 1

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 “HIRF Protection - Integrated Avionics Systems” [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 “Human Factors in Integrated Avionics Systems” [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/311** “PFD and MFD SW update. Installation of GSR56, GRA5500 and GTX33 with ADS-B Out”, in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.773, 23.867, 23.963, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1367, 23.1431, 23.1501, 23.1529, 23.1541, 23.1543, 23.1545, 23.1549, 23.1553, 23.1581, 23.1583, 23.1585, 23.1589
CS-ACNS Initial Issue: Subpart B Section 1; Subpart D Section 4

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 "HIRF Protection - Integrated Avionics Systems" [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/320** "GWX 70R Weather Radar installation", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.625, 23.627, 23.867, 23.1301, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1367, 23.1431, 23.1501, 23.1529, 23.1581, 23.1585, 23.1589
FAR 23 Amdt 20: § 23.1401
FAR 23 Amdt 31: § 23.629

For Type Design Change No. **MOD P68/328** "Garmin G1000 Nxi and GFC700 autopilot installation", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.771, 23.773, 23.777, 23.963, 23.1301, 23.1305, 23.1311, 23.1321, 23.1322, 23.1327, 23.1331, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1581, 23.1583, 23.1585, 23.1589
JAR 23 Amdt 0 effective 11 March 1994:
§§ 23.685, 23.689
FAR 23 Amdt 17: § 23.1303
CS-ACNS Initial Issue: Subpart B Section 1; Subpart D Section 2; Subpart D Section 3; Subpart E Section 1
JAA TGL-10: §§ 6.1, 6.2, 6.3, 7.1, 7.2, 8.1, 8.1.1, 8.1.2, 8.2, 8.3, 8.4, 8.5, 9
AMC 20-27A: §§ 6.1, 6.2.1, 6.2.2, 6.3.1, 6.4, 6.5, 7.1, 7.2, 7.3, 7.4, 8.2, 8.4, 8.4.1, 8.4.2, 8.4.3, 9
AMC 20-28: §§ 6.1, 6.2.1, 6.2.2, 6.2.3, 6.3, 6.3.1, 6.3.2, 6.3.3, 6.4, 6.5, 7.1, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 9
AMC 20-15: §§ 4, 5, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 7, 8, 9

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

NOTE E/2: Basic equipment required by the applicable airworthiness design standard (see certification basis) shall be installed in the aircraft for the first certification.

In addition, the following equipment are required:
- Safe Flight Instrument Corp. pre-stall detector Type 164, or equivalent
- Aircraft Flight Manual (see § E.IV)

NOTE E/3: Operations below 2400 rpm at a manifold pressure above 36" Hg are prohibited.

NOTE E/4: For the determination of the empty weight and associated centre of gravity position, unusable fuel and engine undrainable lubricant must be included as noted below:

Unusable Fuel:	12,9 kg (28,44 lb) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 Kg (12,57 lb) at +0,770 m (+30,3 in) for the auxiliary wing tank *(see Notes E/5)*
Undrainable Lubricant:	0,454 kg (1 lbs) at +0,100 m (+4 in)

NOTE E/5: **Fuel Capacities**

E/5a) The P.68C-TC s/n 208 is equipped with two auxiliary integral fuel tanks with transfer pumps, the total fuel capacity is 580Lt (153 U.S.Gal) distributed as follows *(see Note E/6)*:

- 2 Main Wing Tanks:	205 Lt (54 U.S.Gal) per tank at +0,770 m (+30,3 in) Unusable: 9 Lt (2,5 U.S.Gal) per tank
- 2 Auxiliary Wing Tanks:	85 Lt (22,5 U.S.Gal) per tank at +0,770 m (+30,3 in) Unusable: 4 Lt (1 U.S.Gal) per tank

E/5b) For P.68C-TC aicraft embodying MOD P68/17, two wing tank configurations are approved:

- **STANDARD RANGE**

Total fuel capacity:	538 Lt (142 U.S.Gal) at +0,770 m (+30,3 in)
Total unusable fuel:	18 Lt (4,7 U.S.Gal)

- **LONG RANGE**

Total fuel capacity:	696 Lt (184 U.S.Gal) at +0,770 m (+30,3 in)
Total unusable:	26 Lt (6,9 U.S.Gal)

NOTE E/6: The prototype P.68C-TC s/n 208 is approved with main and auxiliary wing tanks of P.68B variant. For fuel capacity and unusable quantity refer to Note E/5.

NOTE E/7: P.68C-TC aircraft can be equipped with under-wing auxiliary fuel tanks with transfer pumps (Kit P/N 68-034) with the following additional limitations:
- Air Speeds:
  Never exceed speed V_{NE}: 175 KCAS
  Other air speeds are unchanged.
- Fuel Capacity:
  Total fuel capacity is 738 Lt (195 U.S.Gal) distributed as follows:

2 Main Wing Tanks:	269 Lt (71 U.S.Gal) per tank at +0,770 m (+30,3 in) Unusable: 9 Lt (2,5 U.S. gal) per tank

2 Under-Wing Tanks:	100 Lt (26 U.S.Gal) per tank at +0,440 m (+17,3 in) Unusable: 0 Lt per tank

NOTE E/8: Following placard shall be installed in full view of pilot:
"THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS"
Moreover all placards required in the Aircraft Flight Manual shall be installed in the proper location.

NOTE E/9: P68C-TC aircraft from s/n 330 onwards can be equipped since new with a crew door on the fuselage right side as per Partenavia DWG 2.2503. In this case the Aircraft Flight Manual must include the Supplement I (ENAC approval No.199.649/T dated 17 April 1984).

NOTE E/10: P.68C-TC aircraft embodying Partenavia Service Bulletin No.136 is approved for a Maximum Take-Off Weight and a Maximum Landing Weight respectively of 2084 kg (4594 lb) and 1980 kg (4167 lb), with the following Operating Limitations:

- Air Speeds:

Never exceed speed V_{NE}:		194	KCAS
Maximum structural cruising speed V_{NO}:		154	KCAS
Design Manoeuvring Speed V_A:		132	KCAS
Flaps Extended Speed V_{FE}:			
	15° Flaps	152	KCAS
	35° Flaps	103	KCAS
Minimum Control Speed (Single Engine) V_{MC}:		64	KCAS

- Maximum Masses:

Taxi and Ramp:	2100 kg (4630 lb)
Take Off:	2084 kg (4594 lb)
Landing:	1980 kg (4365 lb)
Zero Fuel (*see Note E/15*):	1890 kg (4167 lb)

- Centre of Gravity Range:

Rearward Limits:	+0,481 m (+18,92 in) aft of datum (31% MAC) for any weight
Forward Limits:	+0,325 m (+12,80 in) aft of datum (21% MAC) at 2100 kg (4630 lb); +0,320 m (+12,60 in) aft of datum (20,6% MAC) at 2084 kg (4594 lb) or less +0,230 m (+9,06 in) aft of datum (14,84% MAC) at 1680 kg (3704 lb) or less with linear variation for intermediate weights

For aircraft embodying the Service Bulletin No.136, the Aircraft Flight Manual must include the approved Supplement N.

NOTE E/11: P68C-TC aircraft (from and excluding s/n 392) may be equipped since new with governors "MT-Propeller" (as per Type Design Change No. MOD P68/125): P-881-29 (left & right).

NOTE E/12: P.68C-TC aircraft (from and excluding s/n 392) may be equipped since new with a "Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System" electronic powerplant instrumentation system, in lieu of the standard powerplant instrumentation (as per Type Design Change No. MOD P68/18).

NOTE E/13: P.68C-TC aircraft (from and excluding s/n 392) may be equipped since new with SAGEM Avionics Integrated Display System approved for IFR operations, in lieu of the standard instrument panel layout (as per Type Design Changes No. MOD P68/123 and MOD P68/157).

NOTE E/14: P.68C-TC aircraft (from and excluding s/n 392) may be equipped since new with a S-Tec 55X Autopilot (as per Type Design Change No. MOD P68/86).

NOTE E/15 : P.68C-TC aircraft (from and excluding s/n 392) is approved for a Maximum Zero Fuel Weight (MZFW) of 1967 kg (as per Type Design Change No. MOD P68/97).

NOTE E/16: P.68C-TC aircraft from s/n 467 onwards may be equipped with a fixed oxygen system kit (as per Type Design Change No. MOD P68/223).

NOTE E/17: P.68C-TC aircraft from s/n 472 to s/n 509 are equipped with Garmin G950 Integrated Flight Deck System (as per Type Design Change No. MOD P68/240).

NOTE E/18: P.68C-TC aircraft from s/n 472 onwards may be equipped with MidContinent MD302 digital triple stand-by instrument (as per Type Design Change No. MOD P68/302).

NOTE E/19: P.68C-TC aircraft from s/n 495 onwards may be equipped with Garmin GSR56 Satellite Transceiver and/or Garmin GRA5500 Radar Altimeter (as per Type Design Change No. MOD P68/311).

NOTE E/20: P.68C-TC aircraft from s/n 495 onwards may be equipped with Garmin GWX70R Weather Radar installed in the wing tip (as per Type Design Change No. MOD P68/320).

NOTE E/21: P.68C-TC aircraft from s/n 514 onwards are equipped since new with Garmin G1000 NXi Integrated Flight Deck System and GFC700 Autopilot (as per Type Design Change No. MOD P68/328).

NOTE E/22: P.68C-TC aircraft installing Garmin G1000 NXi avionics system are approved for the following PBN Operations:
- P-RNAV (RNAV 1, RNP 1): Precision RNAV Operations in designated European Airspace including departures, arrivals, and approaches up to the point of the Final Approach Fix
- RNP APCH LNAV: GPS Non-Precision Approach without vertical guidance
- RNP APCH LNAV/VNAV: APV BARO with vertical guidance (based on SBAS)
- RNP APCH LPV: APV SBAS Localizer Performance with vertical guidance

NOTE E/23: P.68C-TC aircraft from s/n 514 onwards may be equipped with Garmin GTS8000 ACAS II system (as per Type Design Change No. MOD P68/328).

SECTION F: P.68 "Observer"

P. 68 "Observer" is derived by P.68B variant introducing:

1) Transparent fuselage nose
2) Steel truss for nose landing gear attachment
3) New instrument panel
4) Control system
5) Increased fuel capacity

F.I. General

1. Data Sheet No.: EASA.A.385	Date: 31 July 2013
2. a) Type:	**P.68**
b) Model:	P.68
c) Variant:	P.68 "Observer"
3. Airworthiness Category:	Normal Category Aeroplanes
4. Type Certificate Holder:	**VULCANAIR S.P.A.** via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
5. Manufacturer:	**VULCANAIR S.P.A**. via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
6. Certification Application Date:	4 December 1978
7. National Certifying Authority	Italian Authority RAI (nowadays ENAC)
8. National Authority Type Certificate Date:	12 June 1980 (RAI TC No. A 151; reissued as ENAC TC No. A 365 dated 25 November 1998)

F.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements:	4 December 1978
2. Airworthiness Requirements:	FAR 23 effective 1 February 1965 including Amdt 1 through 6
3. Special Conditions:	None
4. Exemptions:	None
5. Deviations:	None
6. Equivalent Safety Findings:	None

7. Requirements elected to comply:	None
8. Environmental Standards:	Noise: see TCDSN EASA.A.385 Fuel venting & engine emission: N/A
9. (Reserved) Additional National Requirements:	N/A
10. (Reserved) :	N/A

F.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	doc. SPEC VA/150/PRD “Type Design Configuration Data P.68 Observer“	
2. Description:	Twin engine (piston), high wing monoplane with fixed tricycle landing gear	
3. Equipment: *(see Note F/1)*	Refer to Equipment List of “Aircraft Flight Manual” doc. p/n NOR10.707-3	
4. Dimensions:	Length:	9,43 m (30,94 ft)
	Height:	3,40 m (11,15 ft)
	Width (Wing Span):	12,00 m (39,37 ft)
5. Engine:		
5.1.1 Model:	2 Lycoming IO-360-A1B6	
5.1.2 Type Certificate:	FAA Type Certificate No. 1E10	
5.1.3 Limitations:	200 HP at 2700 rpm Other engine’s limitations are listed in the “Aircraft Flight Manual”, Operating Limitations Section	
6. Load factors:	see Aircraft Flight Manual	
7. Propeller:		
7.1 Model:	2 Hartzell HC-C2YK-2C( )F/FC7666A-4 Governors: 2 Woodward model ( )210655, or alternatively 2 Woodward model ( )210844 Spinners: 2 Hartzell model 836-29	
7.2 Type Certificate:	FAA Type Certificate No. P-920	
7.3 Number of blades:	2	
7.4 Diameter:	1,829 m (72 in) - No reduction permitted	
7.5 Sense of Rotation:	Clockwise	
7.6 Propeller limits:	Pitch setting at station 0,762 m (30 in): Max + 81,2° ± 0,3° Min + 14,2° ± 0,2°	

8. Fluids:

8.1 Fuel:	Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070
8.2 Oil:	Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014
8.3 Coolant:	Air

9. Fluid capacities:
(see Note F/2)

9.1 Fuel: *(see Notes F/3 and F/4)*	Total: 538 Lt (142 U.S.Gal) [269 Lt (71 U.S.Gal) per wing tank] at +0,770 m (+30,3 in) Unusable: 9 Lt (2,5 U.S.Gal) per wing tank
9.2 Oil:	Total: 15 Lt (16 U.S.qt) [7,5 Lt (8 U.S.qt) per engine] at +0,100 m (+4 in) Unusable: 1,8 Lt (1,9 U.S.qt)
9.3 Coolant system capacity:	N/A

10. Air Speeds:
(see Note F/5)

Never exceed speed V_{NE}:	193 KCAS
Max structural cruising speed V_{NO}:	153 KCAS
Design Manoeuvring Speed V_A:	125 KCAS
Flap Extended Speed V_{FE}:	
Flaps 0° - 17°:	152 KCAS
Flaps 17° - 30°:	138 KCAS
Flaps 30° - 35°:	99 KCAS
Minimum Control Speed (Single Engine) V_{MC}:	60 KCAS

11. Maximum Operating Altitude: Not applicable

12. Allweather Operations Capability: Day/Night-VFR, IFR, depending on installed equipment. Flight in icing conditions is prohibited

13. Maximum Weights:
(see Notes F/5 and F/7)

Take-Off:	1960 kg (4321 lb)
Landing:	1860 kg (4100 lb)

14. Centre of Gravity Range:
(see Note F/5)

Rearward Limits:	+0,526 m (+20,7 in) aft of datum (34% MAC) for any weight

Forward Limits:	+0,325 m (+12,8 in) aft of datum (21% MAC) at 1960 kg (4321 lb) +0,259 m (+10,2 in) aft of datum (16,8% MAC) at 1600 kg (3527 lb) or less with linear variation for intermediate weights
15. Datum:	Tangent to the wing leading edge
16. Control surface deflections:	
Wing Flaps	Down: 35° ± 2°
Ailerons	Up: 30° ± 2° Down: 17° ± 2°
Stabilator (leading edge)	Up: 6° ± 2° Down: 16° ± 2°
Stabilator tab (trailing edge) (with respect to stabilator chord)	Down: 1° ± 1° (min) 15° ± 1° (max)
Rudder:	Right: 25° ± 2° Left: 25° ± 2°
Rudder tab:	Right: 30° ± 2° Left: 30° ± 2°
17. Levelling Means:	
Lateral:	Across seat tracks
Longitudinal:	Two screws on the fuselage left side, between frames No.8 and 9
18. Minimum Flight Crew:	1 (Pilot)
19. Maximum Seating Capacity:	Total 7, distributed as follows: 2 at -0,950 m (-37,4 in), 2 at -0,146 m (-5,7 in), 3 at +0,867 m (+34,2 in)
20. Baggage/Cargo Compartments:	
Max Allowable Load:	181 kg (400 lb)
Location:	+1,542 m (+60,7 in)
21. Wheels and Tyres:	see Aircraft Flight Manual
22. (Reserved):	N/A

F.IV. Operating and Service Instructions

1. Flight Manual: *(see Note F/6)*	doc. p/n NOR10.707-3 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
2. Technical Manual:	− Airplane Maintenance Manual: doc. p/n NOR10.709-1B plus appendix p/n NOR10.709-3 and all applicable Supplements Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision − Service Bulletins, Instructions and Letters Refer to doc. p/n NOR10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"
3. Spare Parts Catalogue (IPC):	doc. p/n NOR10.711-1 plus doc. p/n NOR10.711-3 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
4. Instruments and aggregates:	Refer to applicable AFM and AMM

F.V. Notes

NOTE F/1: Basic equipment required by the applicable airworthiness design standard (see certication basis) shall be installed in the aircraft for the first certification.
In addition, following equipments are required:

- Safe Flight Instrument Corp. Pre-stall detector Type 164, or equivalent
- Aircraft Flight Manual (see § F.IV)

NOTE F/2: For the determination of the empty weight and associated centre of gravity position, unusable fuel and engine undrainable lubrificant must be included as noted below:

- Unusable Fuel: 12,9 kg (28,44 lb) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 kg (12,57 lb) at +0,770 m (+30,3 in) for the auxiliary wing tank *(see Note F/3)*
- Undrainable Lubricant: 0,454 kg (1 lb) at +0,100 m (+4 in)

NOTE F/3: P.68 Observer aircraft embodying the partenavia Service Bulletin No.78 can be equipped with two auxiliary fuel tanks with transfer pumps (Kit P/N 68-050). For these aircraft the total wing fuel capacity is 696 Lt (184 U.S.Gal) distributed as follows:

- 2 Main Wing Tanks:
  296 Lt (71 U.S.Gal) at +0.770 m (+30.3 in) per tank
  Unusable: 4 Lt (1 U.S.Gal) per tank
- 2 Auxiliary Wing Tanks:
  79 Lt (21 U.S.Gal) at +0.770 m (+30.3 in) per tank
  Unusable: 4 Lt (1 U.S.Gal) per tank

For P.68 Observer aircraft embodying Service Bullettin No.78, the Aircraft Flight Manual must include the Supplement L/1.

NOTE F/4: P.68 Observer aircraft can be equipped with under-wing auxiliary fuel tanks with transfer pumps (Kit P/N 68-034) with the following additional limitations:

- Air Speeds:
  Never exceed speed V_{NE}: 175 KCAS
  Other air speeds are unchanged.
- Fuel Capacity:
  Total fuel capacity is 738 Lt (195 U.S.Gal) distributed as follows:
  2 Main Wing Tanks: 269 Lt (71 U.S.Gal) per tank
  at +0,770 m (+30,3 in)
  Unusable: 9 Lt (2,5 U.S. gal) per tank
  2 Under-Wing Tanks: 100 Lt (26 U.S.Gal) per tank
  at +0,440 m (+17,3 in)
  Unusable: 0 Lt per tank

NOTE F/5: P.68 Observer aircraft embodying Partenavia Service Bulletin No.79 is approved for a Maximum Take-Off Weight and a Maximum Landing Weight respectively of 2084 kg (4594 lb) and 1980 kg (4167 lb), with the following Operating Limitations:

- Air Speeds:
  Never exceed speed V_{NE}: 194 KCAS
  Maximum structural cruising speed V_{NO}: 154 KCAS
  Design Manoeuvring Speed V_A: 132 KCAS
  Flaps Extended Speed V_{FE}:
  15° Flaps 152 KCAS
  35° Flaps 103 KCAS
  Minimum Control Speed (Single Engine) V_{MC}: 58 KCAS
- Maximum Masses:
  Taxi and Ramp: 2100 kg (4630 lb)
  Take Off: 2084 kg (4594 lb)
  Landing: 1980 kg (4365 lb)
  Zero Fuel: 1890 kg (4167 lb)
- Centre of Gravity Range:
  Rearward Limits: +0,481 m (+18,92 in) aft of datum (31% MAC)
  for any weight

Forward Limits:	+0,351 m (+13,81 in) aft of datum (22,65% MAC) at 2100 kg (4630 lb); +0,348 m (+13.71 in) aft of datum (22,45% MAC) at 2084 kg (4594 lb) or less +0,260 m (+10,25 in) aft of datum (16,80% MAC) at 1600 kg (3704 lb) or less with linear variation for intermediate weights

For aircraft embodying the Service Bulletin No.79 the Aircraft Flight Manual must include the approved Supplement N.

NOTE F/6: Following placard shall be installed in full view of pilot:
“THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS”
Moreover all placards required in the Aircraft Flight Manual shall be installed in the proper location.

NOTE F/7: P.68 Observer aircraft (s/n 333, 337, 338, 339, 378, 379, 383, 385, 386 and 388), reconfigured as P.68 Observer 2 (as per MOD P68/42) and applying SB 155, are approved for a Maximum Zero Fuel Weight (MZFW) of 1967 kg (as per Type Design Change No. MOD P68/288).

SECTION G: AP68TP-300 "Spartacus"

G.I. General

1. Data Sheet No.: EASA.A.385	Date: 31 July 2013
2. a) Type:	**P.68**
b) Model:	AP68TP
c) Variant:	AP68TP-300 "Spartacus"
3. Airworthiness Category:	Normal Category Aeroplanes
4. Type Certificate Holder:	**VULCANAIR S.P.A.** via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
5. Manufacturer:	**VULCANAIR S.P.A**. via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
6. Certification Application Date:	23 December 1982
7. National Certifying Authority	Italian Authority RAI (nowadays ENAC)
8. National Authority Type Certificate Date:	10 December 1983 (RAI TC No. A 151; reissued as ENAC TC No. A 365 dated 25 November 1998)

G.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements:	23 December 1982
2. Airworthiness Requirements: *(see Note G/1)*	FAR 23 effective 1 February 1965 including Amdt 1 through 6, except for the paragraphs listed below for which compliance with following Amdt has been shown: FAR 23 Amdt 7: §§ 23.207, 23.335, 23.367, 23.629, 23.777, 23.933, 23.937, 23.955, 23.1041, 23.1045, 23.1091, 23.1093, 23.1103, 23.1155, 23.1505, 23.1527 FAR 23 Amdt 14: §§ 23.153, 23.155, 23.157, 23.173, 23.201, 23.203, 23.205, 23.929, 23.1017, 23.1027, 23.1163, 23.1182, 23.1189 FAR 23 Amdt 15: §§ 23.951, 23.1013, 23.1015, 23.1019, 23.1183 FAR 23 Amdt 17: §§ 23.141, 23.143, 23.145, 23.175, 23.977, 23.1111, 23.1143, 23.1165, 23.1303

FAR 23 Amdt 18: §§ 23.901, 23.939, 23.943, 23.959, 23.1093, 23.1121, 23.1141, 23.1145, 23.1203, 23.1337

FAR 23 Amdt 20: §§ 23.1301, 23.1323, 23.1547

FAR 23 Amdt 21: §§ 23.45, 23.49, 23.51, 23.65, 23.67, 23.75, 23.77, 23.149, 23.161, 23.177, 23.181, 23.1043, 23.1501, 23.1521, 23.1541, 23.1555, 23.1581, 23.1587

FAR 23 Amdt 23: §§ 23.1307, 23.1545, 23.1557, 23.1583, 23.1585

FAR 23 Amdt 25: § 23.853

FAR 23 Amdt 26: §§ 23.253,23.361, 23.371, 23.903, 23.905, 23.991, 23.1305, 23.1529

FAR 23 Amdt 27: § 23.859

FAR 23 Amdt 28: § 23.1549

3. Special Conditions:	None
4. Exemptions:	None
5. Deviations:	None
6. Equivalent Safety Findings:	None
7. Requirements elected to comply:	None
8. Environmental Standards:	Noise: see TCDSN EASA.A.385 Fuel venting & engine emission: N/A
9. (Reserved) Additional National Requirements:	N/A
10. (Reserved)	N/A

G.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	doc. SPEC VA/151/PRD “Type Design Configuration Data AP68TP-300 Spartacus“	
2. Description:	Twin engine (turboprop), high wing monoplane with fixed tricycle landing gear	
3. Equipment:	Refer to Equipment List of “Aircraft Flight Manual” doc. p/n NOR10.719-5 *(see Note G/2)*	
4. Dimensions:	Length: Height: Width (Wing Span):	9,90 m (32,48 ft) 3,65 m (11,97 ft) 12,00 m (39,37 ft)
5. Engine:		
5.1.1 Model:	2 Allison (Rolls-Royce) 250-B17C Turboprop	
5.1.2 Type Certificate:	FAA Type Certificate No. E10CE	

5.1.3 Limitations: Max Take OFF and MCP:
Power 328 SHP
Propeller rpm 2030
TOT 810°C (1490°F)
Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitations Section

6. Load factors: see Aircraft Flight Manual

7. Propeller:

7.1 Model: 2 Hartzell HC-B3TF-7A/T10173F(B)(N)-21R
Governors: 2 Woodward model 8210-018
Spinners: 2 Hartzell model 82A0835-39

7.2 Type Certificate: FAA Type Certificate No. P15EA

7.3 Number of blades: 3

7.4 Diameter: Max 2,032 m (80 in) - Min 1,981 m (78 in)
No further reduction permitted

7.5 Sense of Rotation: Clockwise

7.6 Propeller limits: Pitch setting at station 0,762 m (30 in):
Max + 85° ± 1°
Min + 8° ± 0,5°
Max Neg. -11° ± 0,5°

8. Fluids:

8.1 Fuel: MIL-T-5624, Grade JP4 or JP5
Aviation Turbine Fuel ASTM D-1655, JET A or A1 or B
MIL-T-83133, Grade JP8
Emergency: MIL-G-5572C (see FAA TCDS No. E10CE for prescriptions)
Fuel containing Tri-Cresyl-Phospate additives shall not be used

8.2 Oil: MIL-L-7808G or MIL-L-23699

8.3 Coolant: Air

9. Fluid capacities:
(see Note G/3)

9.1 Fuel: Total: 848 Lt (224 U.S.Gal)
[382 Lt (101 U.S.Gal) per wing tank]
at +0,770 m (+30,3 in), and
42 Lt (11 U.S.Gal) per nacelle tank
at +0,870 m (+34,25 in)]
Unusable: 4 Lt (1 U.S.Gal) per wing

9.2 Oil: Total: 11,4 Lt (12 U.S.qt)
[5,7 Lt (6 U.S.qt) per engine] at -0,400 m (-15,75 in)

9.3 Coolant system capacity: N/A

10. Air Speeds:

Maximum operating speed V_{MO}:	197 KCAS up to 4572 m (15000 ft) 160 KCAS at 7620 m (25000 ft) Straight line variation between these points
Design Manoeuvring Speed V_A:	143 KCAS
Flap Fully Extended Speed V_{FE}:	119 KCAS
Minimum Control Speed (Single Engine) V_{MC}:	80 KCAS

11. Maximum Operating Altitude: 7620 m (25000 ft)

12. Allweather Operations Capability: Day/Night-VFR, IFR, depending on installed equipment. Flight in icing conditions is prohibited

13. Maximum Weights:

Taxi and Ramp:	2625 kg (5787 lb)
Take-Off:	2600 kg (5732 lb)
Landing:	2470 kg (5445 lb)
Zero Fuel:	2404 kg (5300 lb)

14. Centre of Gravity Range:

Rearward Limits:	+0,535 m (+21,05 in) aft of datum (34,5% MAC) for any weight
Forward Limits:	+0,372 m (+14,65 in) aft of datum (24% MAC) at 2600 kg (5732 lb) +0,310 m (+12,20 in) aft of datum (20% MAC) at 2200 kg (4850 lb) or less with linear variation for intermediate weights

15. Datum: Tangent to the wing leading edge

16. Control surface deflections:

Wing Flaps	Down: 35° ± 2°	
Ailerons	Up: 30° ± 2°	Down: 17° ± 2°
Elevator	Up: 26° ± 1°	Down: 12° ± 1°
Elevator Trim Tab (with elevator neutral):	Up: 10° ± 1°	Down: 39° ± 1°
Rudder:	Right: 25° ± 2°	Left: 25° ± 2°
Rudder tab:	Right: 20° ± 2°	Left: 20° ± 2°
Aileron Tab (with aileron neutral):	Up: 19° ± 2°	Down: 19° ± 2°

17. Levelling Means:
    Lateral: Across seat tracks
    Longitudinal: Two screws on the fuselage left side, between frames No.8 and 9

18. Minimum Flight Crew: 1 (Pilot)

19. Maximum Seating Capacity: Total 9
    (for loading information refer to Aircraft Flight Manual)

20. Baggage/Cargo Compartments:
    Max Allowable Load: 100 kg (220 lb)
    Location: at +2,550 m (+100,40 in)

21. Wheels and Tyres: see Aircraft Flight Manual

22. (Reserved): N/A

G.IV. Operating and Service Instructions

1. Flight Manual: doc. p/n NOR10.707-5
   Refer to doc. p/n NOR 10.763-1 “P.68 Variants Index of Technical Publications” for latest applicable revision

2. Technical Manual:
   − Airplane Maintenance Manual:
     doc. p/n NOR10.709-5 and all applicable Supplements
     Refer to doc. p/n NOR 10.763-1 “P.68 Variants Index of Technical Publications” for latest applicable revision
   − Service Bulletins, Instructions and Letters
     Refer to doc. p/n NOR10.777-2 “AP68TP Variants, Index of Service Bulletins, Service Letters and Service Instructions”

3. Spare Parts Catalogue (IPC): doc. p/n NOR10.711-5 and all applicable Supplements
   Refer to doc. p/n NOR 10.763-1 “P.68 Variants Index of Technical Publications” for latest applicable revision

4. Instruments and aggregates: Refer to applicable AFM and AMM

G.V. Notes

NOTE G/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Change No. **MOD P68/14** "Installation of the equipment COM/NAV/GS/GPS GARMIN GNS 430, P/N 010-00139-01", in addition to AP68TP-300 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.1, 23.601, 23.603, 23.605, 23.611, 23.1301, 23.1309, 23.1311, 23.1321, 23.1327, 23.1351, 23.1357, 23.1365, 23.1431, 23.1581, 23.1583, 23.1585

NOTE G/2: Basic equipment required by the applicable airworthiness design standard (see certification basis) shall be installed in the aircraft for the first certification.
In addition, the following equipment are required:
- Safe Flight Instrument Corp. pre-stall detector Type 164, or equivalent
- Aircraft Flight Manual (see § G.IV)

NOTE G/3: For the determination of the empty weight and associated centre of gravity position, unusable fuel and engine undrainable lubricant must be included as noted below:

Unusable Fuel:	6 kg (13,23 lb) at +0,870 m (+34,25 in)
Undrainable Lubricant:	0,650 kg (1,4 lb) at +0,400 m (+15,75 in) per engine

SECTION H: P.68TC "OBSERVER"

P. 68TC "Observer" is the same as P.68 "Observer" variant except for turbocharged engines.

H.I. General

1. Data Sheet No.: EASA.A.385	Date: 31 July 2013
2. a) Type:	**P.68**
b) Model:	P.68
c) Variant:	P.68TC "Observer"
3. Airworthiness Category:	Normal Category Aeroplanes
4. Type Certificate Holder:	**VULCANAIR S.P.A.** via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
5. Manufacturer:	**VULCANAIR S.P.A**. via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
6. Certification Application Date:	24 May 1984
7. National Certifying Authority	Italian Authority RAI (nowadays ENAC)
8. National Authority Type Certificate Date:	18 June 1985 (RAI TC No. A 151; reissued as ENAC TC No. A 365 dated 25 November 1998)

H.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements:	24 May 1984
2. Airworthiness Requirements: *(see Note H/1)*	FAR 23 effective 1 February 1965 including Amdt 1 through 6 for Sections A, B, C and D, plus Amdt 1 through 18 for Sections E, F and G, and § 23.1309, plus Amdt 7 for §§ 23.909, 23.1043, 23.1047, 23.1143, 23.1305, 23,1527, 23.1583
3. Special Conditions:	None
4. Exemptions:	None
5. Deviations:	None
6. Equivalent Safety Findings:	None
7. Requirements elected to comply:	None

8. Environmental Standards:	Noise: see TCDSN EASA.A.385 Fuel venting & engine emission: N/A
9. (Reserved) Additional National Requirements:	N/A
10. Operational Suitability Requirements:	OSD MMEL: CS-GEN-MMEL, Initial Issue dated 31 January 2014

H.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	doc. SPEC VA/138/PRD "Type Design Configuration Data P.68TC Observer"
2. Description:	Twin engine (turbocharged, piston), high wing monoplane with fixed tricycle landing gear
3. Equipment: *(see Note H/2)*	Refer to Equipment List of "Aircraft Flight Manual" doc. p/n NOR10.707-4 (up to s/n 394), or doc. p/n NOR10.707-4A (for s/n 400), or doc. p/n NOR10.707-4B (from s/n 415 to s/n 481), or doc AFM10.701-4 (from s/n 514 onwards)
4. Dimensions:	Length: 9,15 m (30,02 ft) Height: 3,40 m (11,15 ft) Width (Wing Span): 12,00 m (39,37 ft)
5. Engine:	
5.1.1 Model:	2 Lycoming TIO-360-C1A6D
5.1.2 Type Certificate:	FAA Type Certificate No. E16EA
5.1.3 Limitations:	2575 rpm, 44" Hg (210 HP) Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitations Section
6. Load factors:	see Aircraft Flight Manual
7. Propeller:	
7.1 Model:	2 Hartzell HC-C2YK-2C( )F/FC7666A-0 Governors: 2 Woodward model ( )210655, or alternatively 2 Woodward model ( )210844 *(see Note H/11)* Spinners: 2 Hartzell model 836-29
7.2 Type Certificate:	FAA Type Certificate No. P-920
7.3 Number of blades:	2
7.4 Diameter:	Max 1,930 m (76 in) - Min 1,905 m (75 in)
7.5 Sense of Rotation:	Clockwise
7.6 Propeller limits: *(see Note H/3)*	Pitch setting at station 0,762 m (30 in): Max + 81° ± 1° Min + 15,9° ± 0,1°

8. Fluids:

8.1 Fuel:	Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070
8.2 Oil:	Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014
8.3 Coolant:	Air

9. Fluid capacities:

9.1 Fuel: *(see Notes H/4, H/5, H/8, H/15)*	Total: 538 Lt (142 U.S.Gal) [269 Lt (71 U.S.Gal) per wing tank] at +0,770 m (+30,3 in) Unusable: 9 Lt (2,5 U.S.Gal) per wing tank
9.2 Oil:	Total: 15 Lt (16 U.S.qt) [7,5 Lt (8 U.S.qt) per engine] at +0,100 m (+4 in) Unusable: 1,8 Lt (1,9 U.S.qt)
9.3 Coolant system capacity:	N/A

10. Air Speeds:
(see Note H/6)

Never exceed speed V_{NE}:	193 KCAS
Max structural cruising speed V_{NO}:	153 KCAS
Design Manoeuvring Speed V_A:	125 KCAS
Flap Extended Speed V_{FE}:	
Flaps 0° - 17°:	152 KCAS
Flaps 17° - 30°:	138 KCAS
Flaps 30° - 35°:	99 KCAS
Minimum Control Speed (Single Engine) V_{MC}:	63 KCAS

11. Maximum Operating Altitude: 6096 m (20000 ft)

12. Allweather Operations Capability:
(see Note H/23)
Day/Night-VFR, IFR, depending on installed equipment.
Flight in icing conditions is prohibited.

13. Maximum Weights:
(see Notes H/6 and H/18)

Take-Off:	1960 kg (4321 lb)
Landing:	1860 kg (4100 lb)

14. Centre of Gravity Range:
(see Note H/6)
Rearward Limits: +0,526 m (+20,7 in) aft of datum (34% MAC) for any weight

Forward Limits:	+0,325 m (+12,8 in) aft of datum (21% MAC) at 1960 kg (4321 lb) +0,260 m (+10,25 in) aft of datum (16,8% MAC) at 1600 kg (3527 lb) or less with linear variation for intermediate weights
15. Datum:	Tangent to the wing leading edge
16. Control surface deflections:	
Wing Flaps	Down: 35° ± 2°
Ailerons	Up: 30° ± 2° Down: 17° ± 2°
Stabilator (leading edge)	Up: 6° ± 2° Down: 16° ± 2°
Stabilator tab (trailing edge) (with respect to stabilator chord)	Down: 1° ± 1° (min) 15° ± 1° (max)
Rudder:	Right: 25° ± 2° Left: 25° ± 2°
Rudder tab:	Right: 30° ± 2° Left: 30° ± 2°
17. Levelling Means:	
Lateral:	Across seat tracks
Longitudinal:	Two screws on the fuselage left side, between frames No.8 and 9
18. Minimum Flight Crew:	1 (Pilot)
19. Maximum Seating Capacity: *(see Notes H/7a and H/7b)*	Total 7, distributed as follows: 2 at -0,950 m (-37,4 in), 2 at -0,146 m (-5,75 in), 3 at +0,867 m (+34,2 in)
20. Baggage/Cargo Compartments:	
Max Allowable Load:	181 kg (400 lb)
Location:	+1,542 m (+60,7 in)
21. Wheels and Tyres:	see Aircraft Flight Manual
22. (Reserved):	N/A

H.IV. Operating and Service Instructions

1. Flight Manual: *(see Notes H/9 and H/10)*	**Aircraft up to s/n 394:** doc. p/n NOR10.707-4 **Aircraft s/n 400:** doc. p/n NOR10.707-4A **Aircraft from s/n 415 to s/n 481:** doc. p/n NOR10.707-4B **Aircraft from s/n 514:** doc. p/n AFM10.701-4

	Refer to doc. p/n NOR 10.763-1 “P.68 Variants Index of Technical Publications” for latest applicable revision
2. Technical Manual:	− Airplane Maintenance Manual: **Aircraft up to s/n 394:** doc. p/n NOR10.709-4 plus doc. p/n NOR10.709-1B **Aircraft from s/n 400 up to s/n 461:** doc. p/n NOR10.709-4A and all applicable Supplements **Aircraft from s/n 481:** doc. p/n AMM10.702-2 Refer to doc. p/n NOR10.763-1 “P.68 Variants Index of Technical Publications” for latest applicable revision − Service Bulletins, Instructions and Letters Refer to doc. p/n NOR10.777-1 “P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions”
3. Spare Parts Catalogue (IPC):	**Aircraft up to s/n 394:** doc. p/n NOR10.711-1 plus doc. p/n NOR10.711-4 **Aircraft s/n 400:** doc. p/n NOR10.711-4A **Aircraft from s/n 415 up to s/n 461:** doc. p/n NOR10.711-11A plus doc. p/n NOR10.711-4 **Aircraft from s/n 481:** doc. p/n IPC10.703-4 Refer to doc. p/n NOR 10.763-1 “P.68 Variants Index of Technical Publications” for latest applicable revision
4. Instruments and aggregates:	Refer to applicable AFM and AMM

H.V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.A.385 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No. 69/2014.

1. Master Minimum Equipment List (MMEL)
   The MMEL is defined in the Vulcanair P.68 Series MMEL, Doc. No. OSD10.704-1, Original or later approved revisions.

H.VI. Notes

NOTE H/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Change No. **MOD OBTC/01** "P.68TC Observer - Improvement modifications", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements and Equivalent Level of Safety are applicable:

FAR23 Amdt 7: §§ 23.909, 23.1043, 23.1047, 23.1143, 23.1147, 23.1305, 23.1527, 23.1583
FAR23 Amdt 14: §§ 23.507, 23.509
FAR23 Amdt 17: § 23.1322
FAR23 Amdt 20: §§ 23.1321, 23.1401
FAR23 Amdt 31: §§ 23.629
FAR23 Amdt 36: §§ 23.2, 23.561

Equivalent Level of Safety: FAR23 Amdt 20 (effective 1 Sept. 1977):
§ 23.1321(a)

FAR36 Amdt 16: Appendix G §§ G36.1, G36.101, G36.103, G36.105, G36.107, G36.109, G36.111, G36.201, G36.203, G36.301
ICAO Annex 16, Volume I, Chapter 10

For Type Design Change No. **MOD P68/14** "Installation of the equipment COM/NAV/GS/GPS GARMIN GNS 430, P/N 010-00139-01", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.601, 23.603, 23.605, 23.611, 23.1301, 23.1309, 23.1311, 23.1321, 23.1327, 23.1351, 23.1357, 23.1365, 23.1431, 23.1581, 23.1583, 23.1585

For Type Design Change No. **MOD P68/17** "Interconnected Wing Fuel Tanks", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.601, 23.603, 23.605, 23.609, 23.611, 23.951, 23.953, 23.954, 23.957, 23.959, 23.963, 23.965, 23.967, 23.969, 23.971, 23.975, 23.993, 23.1501, 23.1581, 23.1585

For Type Design Change No. **MOD P68/18** "Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System Installation", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.251, 23.301, 23.303, 23.305, 23.307, 23.561, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.625, 23.955, 23.963, 23.965, 23.993, 23.1163, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1327, 23.1337, 23.1351, 23.1357, 23.1365, 23.1431, 23.1541, 23.1543, 23.1549, 23.1553, 23.1581, 23.1583, 23.1585

FAR 23 Amdt 43 (on elect to comply basis): § 23.1357
FAR 23 Amdt 45 (on elect to comply basis): § 23.1549
FAR 23 Amdt 48 (on elect to comply basis): § 23.611
FAR 23 Amdt 51 (on elect to comply basis): § 23.1305

Special Condition: SC P68/F01 "Installation VM 1000 (MOD P68/018)", ref. doc. WG-318 "Harmonised FAA NPRM and JAA NPA" dated 18/11/1998; AC/AMJ 20.1317

For Type Design Change No. **MOD P68/31** "Change to the Trim Stabilizer Actuating System", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.405, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.671, 23.677, 23.683, 23.685, 23.689
FAR 23 Amdt 48 (on elect to comply basis): §§ 23.607, 23.611

For Type Design Change No. **MOD P68/86** "S-TEC 55X Autopilot Installation", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.29, 23.143, 23.253, 23.601, 23.603, 23.605, 23.607, 23.609, 23.685, 23.689, 23.1529, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 18:
§§ 23.1301, 23.1309, 23.1321, 23.1329, 23.1357, 23.1365, 23.1367, 23.1381, 23.1431
FAR 23 Amdt 49: § 23.1359

For Type Design Change No. **MOD P68/123** "SAGEM Avionics Integrated cockpit installation (IFR)", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements and Equivalent Level Of Safety are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.771, 23.773, 23.777, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1327, 23.1331, 23.1337, 23.1351, 23.1357, 23.1359, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 1549, 23.1559, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
FAR 23 Amdt 17: § 23.1303

Special Condition:
JAR 23 Amdt 1 par. 23.1309(e) according to JAA INT/POL/23/1 [ref. EASA CRI F-01 issue 3 dated 21/03/2008 "HIRF protection"]

Equivalent Level Of Safety:
JAR 23 effective 11 March 1994 para. 23.1545(b)(1), 23.1545(b)(5), 23.1545(b)(6) [ref. EASA CRI G-01 issue 8 dated 25/03/2008 "Sagem Avionics Display Airspeed Markings"]

For Type Design Change No. **MOD P68/126** "Garmin GNS 430W/530W (WAAS) system installation", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.1, 23.601, 23.603, 23.605, 23.611, 23.1301, 23.1309, 23.1311, 23.1321, 23.1327, 23.1351, 23.1357, 23.1365, 23.1431, 23.1581, 23.1583, 23.1585, 23.1589

For Type Design Change No. **MOD P68/157** "Replacing Cross Bow 500GA with AXITUDE AX1-200 in SAGEM glass cockpit (IFR)", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.23, 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.1301, 23.1309, 23.1351, 23.1357, 23.1359, 23.1365, 23.1431, 23.1501, 23.1525, 23.1529, 23.1541, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 57 (on elect to comply basis): § 23.1308

For Type Design Change No. **MOD P68/223** "Fixed oxygen system kit installation", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.601, 23.603, 23.605, 23.625, 23.1357, 23.1367, 23.1501, 23.1529, 23.1541, 23.1581, 23.1583, 23.1585
FAR 23 Amdt 9: § 23.1449
FAR 23 Amdt 17: § 23.1309
FAR 23 Amdt 36: § 23.561
FAR 23 Amdt 43: §§ 23.1441, 23.1443, 23.1445
FAR 23 Amdt 49: §§ 23.1447, 23.1451, 23.1453

For Type Design Change No. **MOD P68/240** "Garmin G950 avionics installation", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.623, 23.625, 23.627, 23.771, 23.773, 23.777, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1327, 23.1331, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
FAR 23 Amdt 18: §§ 23.1303, 23.1325

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 "HIRF Protection - Integrated Avionics Systems" [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/247** "Software change to Sagem Avionics integrated cockpit installation", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1301, 23.1309, 23.1311, 23.1545, 23.1581, 23.1583

Equivalent Level Of Safety:
JAR 23 effective 11 March 1994 par. 23.1545(b)(1), 23.1545(b)(5), 23.1545(b)(6) [ref. EASA CRI G-01 issue 5 dated 29/09/2010 "Sagem Avionics Display Airspeed Markings"]

For Type Design Change No. **MOD P68/288** "Extension of MOD.P68/97 applicability to P.68 Observer 2 and P68TC Observer variants", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994: §§ 23.1501, 23.1524, 23.1529, 23.1581, 23.1583, 23.1589
FAR 23 Amdt 7: § 23.572

For Type Design Change No. **MOD P68/311** "PFD and MFD SW update. Installation of GSR56, GRA5500 and GTX33 with ADS-B Out", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.773, 23.867, 23.963, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1367, 23.1431, 23.1501, 23.1529, 23.1541, 23.1543, 23.1545, 23.1549, 23.1553, 23.1581, 23.1583, 23.1585, 23.1589
CS-ACNS Initial Issue: Subpart B Section 1; Subpart D Section 4

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 "HIRF Protection - Integrated Avionics Systems" [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/320** "GWX 70R Weather Radar installation", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.625, 23.627, 23.867, 23.1301, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1367, 23.1431, 23.1501, 23.1529, 23.1581, 23.1585, 23.1589
FAR 23 Amdt 20: § 23.1401

FAR 23 Amdt 31: § 23.629

For Type Design Change No. **MOD P68/321** "Extension of MOD.P68/302 applicability to P.68 Observer variants", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.771, 23.773, 23.1301, 23.1311, 23.1321, 23.1322, 23.1331, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1381, 23.1431, 23.1501, 23.1529, 23.1541, 23.1543, 23.1545, 23.1581, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
CS-ACNS Initial Issue: Subpart E Section 1

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/328** "Garmin G1000 Nxi and GFC700 autopilot installation", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.771, 23.773, 23.777, 23.963, 23.1301, 23.1305, 23.1311, 23.1321, 23.1322, 23.1327, 23.1331, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1581, 23.1583, 23.1585, 23.1589
JAR 23 Amdt 0 effective 11 March 1994:
§§ 23.685, 23.689
FAR 23 Amdt 17: § 23.1303
CS-ACNS Initial Issue: Subpart B Section 1; Subpart D Section 2; Subpart D Section 3; Subpart E Section 1
JAA TGL-10: §§ 6.1, 6.2, 6.3, 7.1, 7.2, 8.1, 8.1.1, 8.1.2, 8.2, 8.3, 8.4, 8.5, 9
AMC 20-27A: §§ 6.1, 6.2.1, 6.2.2, 6.3.1, 6.4, 6.5, 7.1, 7.2, 7.3, 7.4, 8.2, 8.4, 8.4.1, 8.4.2, 8.4.3, 9
AMC 20-28: §§ 6.1, 6.2.1, 6.2.2, 6.2.3, 6.3, 6.3.1, 6.3.2, 6.3.3, 6.4, 6.5, 7.1, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 9
AMC 20-15: §§ 4, 5, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 7, 8, 9

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

NOTE H/2: Basic equipment required by the applicable airworthiness design standard (see certification basis) shall be installed in the aircraft for the first certification.
In addition, the following equipment are required:
- Safe Flight Instrument Corp. pre-stall detector Type 164, or equivalent

- Aircraft Flight Manual (see § H.IV)

NOTE H/3: No reduction permitted for aircraft embodying the Type Design Change MOD OBTC/01.

NOTE H/4: For the determination of the empty weight and associated centre of gravity position, unusable fuel and engine undrainable lubricant must be included as noted below:

Aircraft up to s/n 400

Unusable Fuel:	12,9 kg (28,44 lb) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 Kg (12,57 lb) at +0,770 m (+30,3 in) for the auxiliary wing tank *(see Notes H/5 and H/8)*
Undrainable Lubricant:	0,454 kg (1 lb) at +0,100 m (+4 in)

Aircraft from s/n 415

Unusable Fuel: *(see Note H/14)*	12,9 kg (28,44 lb) at +0,770 m (+30,3 in) for Standard Range Configuration 18,7 Kg (41,23 lbs) at +0,770 m (+30,3 in) for Long Range Configuration
Undrainable Lubricant:	0,454 kg (1 lb) at +0,100 m (+4 in)

NOTE H/5: P.68TC Observer aircraft up to and including s/n 394, can be equipped with under-wing auxiliary fuel tanks with transfer pumps (Kit P/N 68-034) with the following additional limitations:

- Air Speeds:
  Never exceed speed V_{NE}: 175 KCAS
  Other air speeds are unchanged.
- Fuel Capacity:
  Total fuel capacity is 738 Lt (195 U.S.Gal) distributed as follows:

2 Main Wing Tanks:	269 Lt (71 U.S.Gal) per tank at +0,770 m (+30,3 in) Unusable: 9 Lt (2,5 U.S. gal) per tank
2 Under-Wing Tanks:	100 Lt (26 U.S.Gal) per tank at +0,440 m (+17,3 in) Unusable: 0 Lt per tank

NOTE H/6: For P.68TC Observer aircraft embodying the Type Design Change MOD OBTC/01, the following limitations apply:

- Air Speeds:
  - Never exceed speed V_{NE}: 194 KCAS
  - Maximum structural cruising speed V_{NO}: 154 KCAS
  - Design Manoeuvring Speed V_A: 132 KCAS
  - Flap Extended Speed V_{FE}:
    - Flaps 15°: 152 KCAS
    - Flaps 35°: 103 KCAS
  - Minimum Control Speed (Single Engine) V_{MC}: 64 KCAS
- Maximum Weights:
  - Taxi and Ramp: 2100 kg (4630 lb)

Take-Off:	2084 kg (4594 lb)
Landing:	1980 kg (4365 lb)
- Centre of Gravity Range:	
Rearward Limits:	+0,481 m (+18,92 in) aft the datum (31% MAC) for any weight
Forward Limits:	+0,351 m (+13,81 in) aft the datum (22,65% MAC) at 2100 kg (4630 lb) +0,348 m (+13,71 in) aft the datum (22,45% MAC) at 2084 kg (4594 lb) +0,260 m (+10,25 in) aft the datum (16,8% MAC) at 1600 kg (3527 lb) or less with linear variation for intermediate weights

NOTE H/7a: For P.68TC Observer aircraft embodying the Type Design Change MOD OBTC/01, the number of seats is 6, distributed as follows:
2 at -0,950 m (-37,4 in), 2 at -0,146 m (-5,75 in), 2 at +0,867 m (+34,2 in)

NOTE H/7b: For P.68TC Observer aircraft (from s/n 415 onwards) embodying the Type Design Change MOD P68/288 or applying SB 155, the number of seats is 7, distributed as follows:
3 at -0,950 m (-37,4 in), 2 at -0,146 m (-5,75 in), 2 at +0,867 m (+34,2 in)

NOTE H/8: P.68TC Observer aircraft modified as per Type Design Change MOD OBTC/01 can be equipped with two auxiliary fuel tanks with transfer pumps (Kit P/N 68-050); the total fuel capacity is 696 Lt (184 U.S.Gal) distributed as follows:
- 2 Main Wing Tanks:
  296 Lt (71 U.S.Gal) at +0,770 m (+30,3 in) per tank
  Unusable: 9 Lt (2,5 U.S.Gal) per tank
- 2 Auxiliary Wing Tanks:
  79 Lt (21 U.S.Gal) at +0,770 m (30,3 in) per tank
  Unusable: 9 Lt (2,5 U.S.Gal) per tank

When auxiliary wing tanks are installed, the Aircraft Flight Manual must include the Suppplement L.

NOTE H/9:
- For P.68TC Observer embodying Service Bullettin No.77 “Cargo Version”, the Aircraft Flight Manual shall include the Supplement M.
- For P.68TC Observer embodying Type Design Change OBTC/02 rev.1 “Cabin forced air heating system”, the Aircraft Flight Manual must include the approved Supplement N.

NOTE H/10: Following placard shall be installed in full view of pilot:
“THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS”
Moreover all placards required in the Aircraft Flight Manual shall be installed in the proper location.

NOTE H/11: P.68TC Observer aircraft from s/n 442 onwards may be equipped since new with governors “MT-Propeller” (as per Change No. MOD P68/125): P-881-29 (left & right).

NOTE H/12: P.68TC Observer aircraft from s/n 415 onwards may be equipped since new with a “Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System” electronic powerplant instrumentation system, in lieu of the standard powerplant instrumentation (as per Type Design Change No. MOD P68/18).

NOTE H/13: P.68TC Observer aircraft from s/n 442 onwards may be equipped since new with a SAGEM Avionics Integrated Display System approved for IFR operations, in lieu of the standard instrument panel layout (as per Type Design Changes No. MOD P68/123 and MOD P68/157).

NOTE H/14: P.68TC Observer aircraft from s/n 442 onwards may be equipped since new with a S-Tec 55X Autopilot (as per Type Design Change No. MOD P68/86).

NOTE H/15: For P.68TC Observer aircraft from s/n 415 onwards (embodying MOD P68/17) two wing tank configurations are approved:

- **STANDARD RANGE**
  Total fuel capacity: 538 Lt (142 U.S.Gal) at +0,770 m (+30,3 in)
  Total unusable fuel: 18 Lt (4,7 U.S.Gal)
- **LONG RANGE**
  Total fuel capacity: 696 Lt (184 U.S.Gal) at +0,770 m (+30,3 in)
  Total unusable: 26 Lt (6,9 U.S.Gal)

NOTE H/16: P.68TC Observer aircraft from s/n 415 onwards may be equipped with a fixed oxygen system kit (as per Type Design Change No. MOD P68/223).

NOTE H/17: P.68TC Observer aircraft s/n 481 is equipped with Garmin G950 Integrated Flight Deck System (as per Type Design Change No. MOD P68/240).

NOTE H/18: P.68TC Observer aircraft from s/n 415 onwards are approved for a Maximum Zero Fuel Weight (MZFW) of 1967 kg (as per Type Design Change No. MOD P68/288).

NOTE H/19: P.68TC Observer aircraft from s/n 481 onwards may be equipped with MidContinent MD302 digital triple stand-by instrument (as per Type Design Change No. MOD P68/321).

NOTE H/20: P.68TC Observer aircraft from s/n 495 onwards may be equipped with Garmin GSR56 Satellite Transceiver and/or Garmin GRA5500 Radar Altimeter (as per Type Design Change No. MOD P68/311).

NOTE H/21: P.68TC Observer aircraft from s/n 495 onwards may be equipped with Garmin GWX70R Weather Radar installed in the wing tip (as per Type Design Change No. MOD P68/320).

NOTE H/22: P.68TC Observer aircraft from s/n 514 onwards are equipped since new with Garmin G1000 NXi Integrated Flight Deck System and GFC700 Autopilot (as per Type Design Change No. MOD P68/328).

NOTE H/23: P.68TC Observer aircraft installing Garmin G1000 NXi avionics system are approved for the following PBN Operations:

- P-RNAV (RNAV 1, RNP 1): Precision RNAV Operations in designated European Airspace including departures, arrivals, and approaches up to the point of the Final Approach Fix
- RNP APCH LNAV: GPS Non-Precision Approach without vertical guidance
- RNP APCH LNAV/VNAV: APV BARO with vertical guidance (based on SBAS)
- RNP APCH LPV: APV SBAS Localizer Performance with vertical guidance

NOTE H/24: P.68TC Observer aircraft from s/n 514 onwards may be equipped with Garmin GTS8000 ACAS II system (as per Type Design Change No. MOD P68/328).

SECTION I: AP68TP-600 "Viator"

I.I. General

1. Data Sheet No.: EASA.A.385	Date: 31 July 2013
2. a) Type:	**P.68**
b) Model:	AP68TP
c) Variant:	AP68TP-600 "Viator"
3. Airworthiness Category:	Normal Category Aeroplanes
4. Type Certificate Holder:	**VULCANAIR S.P.A.** via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
5. Manufacturer:	**VULCANAIR S.P.A**. via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
6. Certification Application Date:	3 January 1984
7. National Certifying Authority	Italian Authority RAI (nowadays ENAC)
8. National Authority Type Certificate Date:	16 October 1986 (RAI TC No. A 151; reissued as ENAC TC No. A 365 dated 25 November 1998)

I.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements:	3 January 1984
2. Airworthiness Requirements: *(see Note I/1)*	FAR 23 effective 1 February 1965 including Amdt 1 through 6, except for the paragraphs listed below for which compliance with following Amdt has been shown: FAR 23 Amdt 7: §§ 23.207, 23.335, 23.367, 23.725, 23.726, 23.727, 23.777, 23.867, 23.871, 23.933, 23.937, 23.955, 23.1041, 23.1045, 23.1091, 23.1103, 23.1155, 23.1505, 23.1527 FAR 23 Amdt 14: §§ 23.153, 23.155, 23.157, 23.173, 23.201, 23.203, 23.205, 23.507, 23.509, 23.572, 23.929, 23.1017, 23.1027, 23.1163, 23.1189, 23.1435 FAR 23 Amdt 15: §§ 23.951, 23.1013, 23.1015, 23.1019, 23.1183 FAR 23 Amdt 16: § 23.1182 FAR 23 Amdt 17: §§ 23.141, 23.143, 23.145, 23.175, 23.479, 23.733, 23.977, 23.1111, 23.1125, 23.1143, 23.1165, 23.1303, 23.1309, 23.1322

	FAR 23 Amdt 18: §§ 23.901, 23.939, 23.943, 23.959, 23.1093, 23.1121, 23.1141, 23.1145, 23.1203, 23.1337 FAR 23 Amdt 20: §§ 23.1301, 23.1323, 23.1438, 23.1547 FAR 23 Amdt 21: §§ 23.45, 23.49, 23.51, 23.65, 23.67, 23.75, 23.77, 23.149, 23.161, 23.177, 23.181, 23.1043, 23.1501, 23.1521, 23.1541, 23.1555, 23.1581, 23.1587 FAR 23 Amdt 23: §§ 23.629, 23.723, 23.1307, 23.1545, 23.1557, 23.1583, 23.1585 FAR 23 Amdt 24: § 23.735 FAR 23 Amdt 25: § 23.853 FAR 23 Amdt 26: §§ 23.253, 23.361, 23.371, 23.729, 23.903, 23.905, 23.991, 23.1305, 23.1529 FAR 23 Amdt 27: § 23.859 FAR 23 Amdt 28: § 23.1549 FAR 23 Amdt 32: §§ 23.2, 23.785
3. Special Conditions:	None
4. Exemptions:	None
5. Deviations:	None
6. Equivalent Safety Findings:	None
7. Requirements elected to comply:	None
8. Environmental Standards:	Noise: see TCDSN EASA.A.385 Fuel venting & engine emission: Not available
9. (Reserved) Additional National Requirements:	N/A
10. Operational Suitability Requirements:	OSD MMEL: CS-MMEL, Initial Issue dated 31 January 2014 OSD FCD: CS-FCD, Initial Issue dated 31 January 2014

I.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	doc. SPEC VA/152/PRD “Type Design Configuration Data AP68TP-600 Viator“
2. Description:	Twin engine (turboprop), high wing monoplane with retractable landing gear
3. Equipment:	Refer to Equipment List of “Aircraft Flight Manual” doc. p/n NOR10.707-6 (up to s/n 9004), or doc. p/n NOR10.707-6A (for s/n 9005 and 9010), or doc. p/n AFM10.701-6 (from s/n 9011 onwards) *(see Note I/2)*

4. Dimensions:

Up to s/n 9004:

Length:	10,89 m (35,73 ft)
Height:	3,63 m (11,91 ft)
Width (Wing Span):	12,00 m (39,37 ft)

From s/n 9005:

Length:	
Height:	11,27 m (36,97 ft)
Width (Wing Span):	3,63 m (11,91 ft)
	12,00 m (39,37 ft)

5. Engine:

5.1.1 Model: 2 Allison (Rolls-Royce) 250-B17C Turboprop

5.1.2 Type Certificate: FAA Type Certificate No. E10CE

5.1.3 Limitations: Max Take OFF and MCP:

Power	328 SHP
Propeller rpm	2030
TOT	810°C (1490°F)

Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitations Section

6. Load factors: see Aircraft Flight Manual

7. Propeller:

7.1 Model: 2 Hartzell HC-B3TF-7A/T10173F(B)(N)-21R
Governors: 2 Woodward model 8210-018
Spinners: 2 Hartzell model 82A0835-39

7.2 Type Certificate: FAA Type Certificate No. P15EA

7.3 Number of blades: 3

7.4 Diameter: Max 2,032 m (80 in) - Min 1,981 m (78 in)
No further reduction permitted

7.5 Sense of Rotation: Clockwise

7.6 Propeller limits: Pitch setting at station 0,762 m (30 in):
Max + 85° ± 1°
Min + 8° ± 0,5°
Max Neg. -11° ± 0,5°

8. Fluids:

8.1 Fuel: MIL-T-5624, Grade JP4 or JP5
Aviation Turbine Fuel ASTM D-1655, JET A or A1 or B ASTM D-1655, JP1 and Diesel n.1
Emergency: MIL-G-5572C (see FAA TCDS No.E10CE for prescriptions)

Fuel containing Tri-Cresyl-Phospate additives shall not be used

8.2 Oil: MIL-L-7808G or MIL-L-23699

8.3 Coolant: Air

9. Fluid capacities:
(see Note I/3)

9.1 Fuel: Total: 848 Lt (224 U.S.Gal)
[382 Lt (101 U.S.Gal) per wing tank]
at +0,770 m (+30,3 in), and
42 Lt (11 U.S.Gal) per nacelle tank
at +0,870 m (+34,25 in)]
Unusable: 4 Lt (1 U.S.Gal) per wing

9.2 Oil: Total: 11,4 Lt (12 U.S.qt)
[5,7 Lt (6 U.S.qt) per engine] at -0,400 m (-15,75 in)

9.3 Coolant system capacity: N/A

10. Air Speeds:

Up to s/n 9004

Maximum operating speed V_{MO}:	
up to 4572 m (15000 ft)	200 KCAS
at 7620 m (25000 ft)	164 KCAS
	Straight line variation between these points
Design Manoeuvring Speed V_A:	157 KCAS
Flap Extended Speed V_{FE} (35°):	131 KCAS
Maximum L/G Extended Speed V_{LE}:	150 KCAS
Maximum L/G Operating Speed V_{LO}:	150 KCAS
Minimum Control Speed (Single Engine) V_{MC}:	78 KCAS

From s/n 9005 onwards

Maximum operating speed V_{MO}:	
up to 4572 m (15000 ft)	200 KCAS
at 7620 m (25000 ft)	164 KCAS
	Straight line variation between these points
Design Manoeuvring Speed V_A:	141 KCAS
Flap Extended Speed V_{FE} (35°):	131 KCAS
Maximum L/G Extended Speed V_{LE}:	150 KCAS
Maximum L/G Operating Speed V_{LO}:	150 KCAS
Minimum Control Speed (Single Engine) V_{MC}:	79 KCAS

11. Maximum Operating Altitude: 7620 m (25000 ft)

12. Allweather Operations Capability:
(see Note I/6)

Day/Night-VFR, IFR, depending on installed equipment.
Flight in icing conditions is prohibited

13. Maximum Weights:

	Up to s/n 9004	**From s/n 9005**
Taxi and Ramp:	2875 kg (6338 lb)	3025 kg (6669 lb)
Take-Off:	2850 kg (6283 lb)	3000 kg (6614 lb)
Landing:	2850 kg (6283 lb)	2850 kg (6283 lb)
Zero Fuel:	2550 kg (5622 lb)	2550 kg (5622 lb)

14. Centre of Gravity Range:

Up to s/n 9004

Rearward Limits: +0,543 m (+21,36 in) aft of datum (35% MAC) for any weight

Forward Limits: +0,372 m (+14,65 in) aft of datum (24% MAC) at 2850 kg (6283 lb)
+0,243 m (+9,58 in) aft of datum (15,7% MAC) at 2150 kg (4740 lb) or less
with linear variation for intermediate weights

From s/n 9005 onwards:

Rearward Limits: +0,512 m (+20,16 in) aft of datum (33% MAC) for any weight

Forward Limits: +0,405 m (+15,94 in) aft of datum (26,12% MAC) at 3025 kg (6669 lb)
+0,400 m (+15,75 in) aft of datum (25,8% MAC) at 3000 kg (6614 lbs)
+0,243 m (+9,58 in) aft of datum (15,7% MAC) at 2150 kg (4740 lb) or less
with linear variation for intermediate weights

15. Datum: Tangent to the wing leading edge

16. Control surface deflections:

Aircraft up to s/n 9004

Wing Flaps	Down: 35° ± 2°	
Ailerons	Up: 30° ± 2°	Down: 17° ± 2°
Elevator	Up: 26° ± 1°	Down: 12° ± 1°
Elevator Trim Tab (with elevator neutral):	Up: 10° ± 1°	Down: 39° ± 1°
Rudder:	Right: 25° ± 2°	Left: 25° ± 2°
Rudder tab:	Right: 20° ± 2°	Left: 20° ± 2°
Aileron Tab (with aileron neutral):	Up: 19° ± 2°	Down: 19° ± 2°

Aircraft from s/n 9005

Wing Flaps	Down: 35° ± 2°	
Ailerons	Up: 30° ± 2°	Down: 17° ± 2°
Elevator	Up: 17° ± 1°	Down: 12° ± 1°
Elevator Trim Tab (with elevator neutral):	Up: 15° ± 1°	Down: 39° ± 1°
Rudder:	Right: 25° ± 2°	Left: 25° ± 2°
Rudder tab:	Right: 20° ± 2°	Left: 20° ± 2°
Aileron Tab (with aileron neutral):	Up: 24° ± 2°	Down: 17° ± 2°

17. Levelling Means:
    Lateral: Across seat tracks
    Longitudinal: Two screws on the fuselage left side, between frames No.8 and 9

18. Minimum Flight Crew: 1 (Pilot)

19. Maximum Seating Capacity: Total 11 (for loading information refer to Aircraft Flight Manual)
    (see Note I/4)

20. Baggage/Cargo Compartments:
    Max Allowable Load: 200 kg (440 lb)
    Location: +2,810 m (+100,63 in)

21. Wheels and Tyres: see Aircraft Flight Manual

22. (Reserved): N/A

I.IV. Operating and Service Instructions

1. Flight Manual: *(see Note I/5)*

Aircraft up to s/n 9004: doc. p/n NOR10.707-6

Aircraft s/n 9005 and 9010: doc. p/n NOR10.707-6A

Aircraft from s/n 9011: doc. p/n AFM10.701-6

	Refer to doc. p/n NOR10.763-1 “P.68 Variants Index of Technical Publications” for latest applicable revision
2. Technical Manual:	− Airplane Maintenance Manual: **Aircraft up to s/n 9004:** doc. p/n NOR10.709-6 and all applicable Supplements **Aircraft s/n 9005 and 9010:** doc. p/n NOR10.709-6A and all applicable Supplements **Aircraft from s/n 9011:** doc. p/n AMM10.702-4 and all applicable Supplements Refer to doc. p/n NOR10.763-1 “P.68 Variants Index of Technical Publications” for latest applicable revision − Service Bulletins, Instructions and Letters Refer to doc. p/n NOR10.777-2 “AP68TP Variants, Index of Service Bulletins, Service Letters and Service Instructions”
3. Spare Parts Catalogue (IPC):	**Aircraft up to s/n 9004:** doc. p/n NOR10.711-6 **Aircraft from s/n 9005:** doc. p/n NOR10.711-6 plus doc. p/n NOR10.775-11 Refer to doc. p/n NOR10.763-1 “P.68 Variants Index of Technical Publications” for latest applicable revision
4. Instruments and aggregates:	Refer to applicable AFM and AMM

I.V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.A.385 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No. 69/2014.

1. Master Minimum Equipment List (MMEL)

The MMEL is defined in the AP68TP-600 VIATOR [Garmin G950 cockpit configuration] MMEL, Doc. No. OSD10.704-2, Original or later approved revisions.

2. Flight Crew Data (FCD)

The minimum syllabus of pilot type rating training, including determination of type rating, is defined in the Vulcanair AP68TP-600 [Garmin G950 cockpit configuration] Flight Crew Data report, Doc. No. OSD10.704-3, Original or later approved revisions.

I.VI. Notes

NOTE I/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Change No. **MOD P68/229** "Landing gear emergency extension system, nitrogen reservoir replacement", in addition to AP68TP-600 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994: §§ 23.1501, 23.1529
JAR 23 Amdt 1 effective 01 February 2001: §§ 23.601, 23.603, 23.605

For Type Design Change No. **MOD P68/266** "Installation of Garmin G950 avionic system and replacement of existing autopilot with S-Tec 2100 model", in addition to AP68TP-600 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.301, 23.303, 23.305, 23.307, 23.395, 23.397, 23.405, 23.561, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.671, 23.677, 23.685, 23.689, 23.729, 23.771, 23.773, 23.777, 23.867, 23.963, 23.1301, 23.1303, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1323, 23.1325, 23.1327, 23.1329, 23.1331, 23.1335, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1553, 23.1555, 23.1581, 23.1583, 23.1585, 23.1589

Special Condition:
EASA CRI F-52 issue 3 dated 12/11/2014 "Protection from the Effects of HIRF" [SC-F23.1309-02 issue 1]

Special Condition:
EASA CRI F-54 issue 3 dated 12/11/2014 "Protection from the Effect of Lightning Strike, Indirect Effect" [SC-F23.1309-03 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 12/11/2014 "Human Factors in Integrated Avionics Systems" [SC-AP68TP-600/04]

For Type Design Change No. **MOD P68/326** "PBN Operations on AP68TP-600 series", in addition to AP68TP-600 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.671, 23.771, 23.773, 23.777, 23.1301, 23.1309, 23.1311, 23.1321, 23.1322, 23.1329, 23.1335, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1581, 23.1583, 23.1585

JAA TGL No.10 "Airworthiness And Operational Approval For Precision RNAV Operations In Designated European Airspace"

AMC 20-27A "Airworthiness Approval and Operational Criteria for RNP APPROACH (RNP APCH) Operations Including APV BARO-VNAV Operations"

AMC 20-28 "Airworthiness Approval and Operational Criteria related to Area Navigation for Global Navigation Satellite System approach operation to Localiser Performance with Vertical guidance minima using Satellite Based Augmentation System"

For Type Design Changes No. **MOD P68/327** and **MOD P68/331** "Fixed oxygen system kit installation", in addition to AP68TP-600 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.601, 23.603, 23.605, 23.625, 23.1357, 23.1365, 23.1501, 23.1529, 23.1541, 23.1581, 23.1583, 23.1585
FAR 23 Amdt 9: § 23.1449
FAR 23 Amdt 36: § 23.561
FAR 23 Amdt 43: §§ 23.1441, 23.1443, 23.1445
FAR 23 Amdt 49: §§ 23.1447, 23.1451, 23.1453

NOTE I/2: Basic equipment required by the applicable airworthiness design standard (see certification basis) shall be installed in the aircraft for the first certification.
In addition, the following equipment are required:
- Safe Flight Instrument Corp. pre-stall detector Type 164, or equivalent
- Aircraft Flight Manual (see § I.IV)

NOTE I/3: For the determination of the empty weight and associated centre of gravity position, unusable fuel and engine undrainable lubricant must be included as noted below:

Unusable Fuel:	6 kg (13,23 lb) at +0,870 m (+34,25 in)
Undrainable Lubricant:	0,650 kg (1,4 lb) at +0,400 m (+15,75 in) per engine

NOTE I/4: AP68TP-600 can be equipped as for "Aerial Survey Configuration". In this case, the aicraft must be operated in compliance with the applicable Flight Manual Supplements.

NOTE I/5: Following placard shall be installed in full view of pilot:
"THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS"
Moreover all placards required in the Aircraft Flight Manual shall be installed in the proper location.

NOTE I/6: AP68TP-600 Viator aircraft from s/n 9011 onwards are approved for the following PBN Operations:
- P-RNAV (RNAV 1, RNP 1): Precision RNAV Operations in designated European Airspace including departures, arrivals, and approaches up to the point of the Final Approach Fix
- RNP APCH LNAV: GPS Non-Precision Approach without vertical guidance
- RNP APCH LPV: APV SBAS Localizer Performance with vertical guidance

NOTE I/7: AP68TP-600 Viator aircraft from s/n 9010 onwards may be equipped with a fixed oxygen system kit (as per Type Design Changes No. MOD P68/327 and MOD P68/331).

SECTION L: P.68 "Observer 2"

Derived by P.68 "Observer", with increased MTOW and MLW, upturned wing tips, new instrument panel, modified electrical system for 100 Amps alternators, larger MLG spring-leaf, oversized main wheels, nose wheel steering disengagement in flight and self-alignment system.

L.I. General

1. Data Sheet No.: EASA.A.385	Date: 31 July 2013
2. a) Type:	**P.68**
b) Model:	P.68
c) Variant:	P.68 "Observer2"
3. Airworthiness Category:	Normal Category Aeroplanes
4. Type Certificate Holder:	**VULCANAIR S.P.A.** via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
5. Manufacturer:	**VULCANAIR S.P.A**. via Giovanni Pascoli, 7 80026 - Casoria (Napoli) Italy
6. Certification Application Date:	3 May 1988
7. National Certifying Authority	Italian Authority RAI (nowadays ENAC)
8. National Authority Type Certificate Date:	30 November 1989 (RAI TC No. A 151; reissued as ENAC TC No. A 365 dated 25 November 1998)

L.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements:	3 May 1988
2. Airworthiness Requirements: *(see Note L/1)*	FAR 23 effective 1 February 1965 including Amdt 1 through 6 plus FAR23 Amdt 14: §23.507, 23.509 FAR23 Amdt 17: §23.1322 FAR23 Amdt 20: §23.1401 FAR23 Amdt 31: §23.629

3. Special Conditions:	None
4. Exemptions:	None
5. Deviations:	None
6. Equivalent Safety Findings:	None
7. Requirements elected to comply:	None
8. Environmental Standards:	Noise: see TCDSN EASA.A.385 Fuel venting & engine emission: N/A
9. (Reserved) Additional National Requirements:	N/A
10. Operational Suitability Requirements:	OSD MMEL: CS-GEN-MMEL, Initial Issue dated 31 January 2014

L.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	doc. SPEC VA/129/PRD "Type Design Configuration Data P.68 Observer 2"
2. Description:	Twin engine (piston), high wing monoplane with fixed tricycle landing gear
3. Equipment:	Refer to Equipment List of "Aircraft Flight Manual" doc. p/n NOR10.707-8 (up to s/n 410), or doc. p/n NOR10.707-8B (from s/n 411 to s/n 512, except s/n 495), or doc. p/n AFM10.701-2 (from s/n 514 onwards, plus s/n 495) *(see Note L/2)*
4. Dimensions:	**Aircraft up to s/n 410:** Length: 9,54 m (31,30 ft) Height: 3,40 m (11,15 ft) Width (Wing Span): 12,00 m (39,37 ft) **Aircraft from s/n 411:** Length: 9,15 m (30,02 ft) Height: 3,40 m (11,15 ft) Width (Wing Span): 12,00 m (39,37 ft)
5. Engine:	
5.1.1 Model:	2 Lycoming IO-360-A1B6
5.1.2 Type Certificate:	FAA Type Certificate No. 1E10
5.1.3 Limitations:	200 HP at 2700 rpm Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitations Section
6. Load factors:	see Aircraft Flight Manual

7. Propeller:

7.1 Model:	2 Hartzell HC-C2YK-2C( )F/FC7666A-4 Governors: 2 Woodward model ( )210655, or alternatively 2 Woodward model ( )210844 *(see Notes L/6a and L/6b)* Spinners: 2 Hartzell model 836-29
7.2 Type Certificate:	FAA Type Certificate No. P-920
7.3 Number of blades:	2
7.4 Diameter:	1,829 m (72 in) - No reduction permitted
7.5 Sense of Rotation:	Clockwise
7.6 Propeller limits:	Pitch setting at station 0,762 m (30 in): Max + 81,2° ± 0,3° Min + 14,2° ± 0,2°

8. Fluids:

8.1 Fuel:	Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070
8.2 Oil:	Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014
8.3 Coolant:	Air

9. Fluid capacities
(see Note L/3)

9.1 Fuel: *(see Note L/4)*	Total: 538 Lt (142 U.S.Gal) [269 Lt (71 U.S.Gal) per wing tank] at +0,770 m (+30,3 in) Unusable: 9 Lt (2,5 U.S.Gal) per wing tank
9.2 Oil:	Total: 15 Lt (16 U.S.qt) [7,5 Lt (8 U.S.qt) per engine] at +0,100 m (+4 in) Unusable: 1,8 Lt (1,9 U.S.qt)
9.3 Coolant system capacity:	N/A

10. Air Speeds:

Never exceed speed V_{NE}:	194 KCAS
Max structural cruising speed V_{NO}:	154 KCAS
Design Manoeuvring Speed V_A:	132 KCAS
Flap Extended Speed V_{FE}:	
Flaps 15°:	152 KCAS
Flaps 35°:	103 KCAS
Minimum Control Speed (Single Engine) V_{MC}:	58 KCAS

11. Maximum Operating Altitude: N/A

12. Allweather Operations Capability: *(see Note L/18)*
Day/Night-VFR, IFR, depending on installed equipment. Flight in icing conditions is prohibited.

13. Maximum Weights:

Taxi and Ramp:	2100 kg (4630 lb)
Take-Off:	2084 kg (4594 lb)
Landing:	1980 kg (4365 lb)
Maximum Zero Fuel Weight:	1890 kg (4167 lb) *(see Note L/13)*

14. Centre of Gravity Range:

Rearward Limits:
+0,481 m (+18,92 in) aft of datum (31% MAC) for any weight

Forward Limits:
+0,351 m (+13,81 in) aft of datum (22,65% MAC) at 2100 kg (4630 lb)
+0,348 m (+13,71 in) aft of datum (22,45% MAC) at 2084 kg (4594 lb)
+0,260 m (+10,25 in) aft of datum (16,8% MAC) at 1600 kg (3527 lb) or less
with linear variation for intermediate weights

15. Datum:
Tangent to the wing leading edge

16. Control surface deflections:

Wing Flaps	Down: 35° ± 2°	
Ailerons	Up: 30° ± 2°	Down: 17° ± 2°
Stabilator (leading edge)	Up: 6° ± 2°	Down: 16° ± 2°
Stabilator tab (trailing edge) (with respect to stabilator chord)	Down: 1° ± 1° (min) 15° ± 1° (max)	
Rudder:	Right: 25° ± 2°	Left: 25° ± 2°
Rudder tab:	Right: 30° ± 2°	Left: 30° ± 2°

17. Levelling Means:

Lateral:
Across seat tracks

Longitudinal:
Two screws on the fuselage left side, between frames No.8 and 9

18. Minimum Flight Crew:
1 (Pilot)

19. Maximum Seating Capacity: *(see Note L/12)*
Total 6, distributed as follows:
2 at -0,950 m (-37,4 in),
2 at -0,146 m (-5,75 in),
2 at +0,867 m (+34,2 in)

20. Baggage/Cargo Compartments:

Max Allowable Load:	181 kg (400 lb)
Location:	+1,542 m (+60,7 in)

21. Wheels and Tyres:	see Aircraft Flight Manual
22. (Reserved):	N/A

L.IV. Operating and Service Instructions

1. Flight Manual: *(see Note L/5)*	**Aircraft up to s/n 410:** doc. p/n NOR10.707-8 **Aircraft from s/n 411 to s/n 512, except s/n 495:** doc. p/n NOR10.707-8B **Aircraft from s/n 514, plus s/n 495:** doc. p/n AFM10.701-2 Refer to doc. p/n NOR10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
2. Technical Manual:	− Airplane Maintenance Manual: **Aircraft up to s/n 451:** doc. p/n NOR10.709-10 and all applicable Supplements **Aircraft from s/n 465:** doc. p/n AMM10.702-2 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision − Service Bulletins, Instructions and Letters Refer to doc. p/n NOR10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"
3. Spare Parts Catalogue (IPC):	**Aircraft up to s/n 451:** doc. p/n NOR10.711-11A **Aircraft from s/n 465:** doc. p/n IPC10.703-2 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision
4. Instruments and aggregates:	Refer to applicable AFM and AMM

L.V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.A.385 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No. 69/2014.

1. Master Minimum Equipment List (MMEL)

The MMEL is defined in the Vulcanair P.68 Series MMEL, Doc. No. OSD10.704-1, Original or later approved revisions.

L.VI. Notes

NOTE L/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Change No. **MOD P68/14** "Installation of the equipment COM/NAV/GS/GPS GARMIN GNS 430, P/N 010-00139-01", in addition to P.68 Observer 2 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.1, 23.601, 23.603, 23.605, 23.611, 23.1301, 23.1309, 23.1311, 23.1321, 23.1327, 23.1351, 23.1357, 23.1365, 23.1431, 23.1581, 23.1583, 23.1585

For Type Design Change No. **MOD P68/17** "Interconnected Wing Fuel Tanks", in addition to P.68 Observer 2 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.1, 23.601, 23.603, 23.605, 23.609, 23.611, 23.951, 23.953, 23.954, 23.957, 23.959, 23.963, 23.965, 23.967, 23.969, 23.971, 23.975, 23.993, 23.1501, 23.1581, 23.1585

For Type Design Change No. **MOD P68/18** "Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System Installation", in addition to P.68 Observer 2 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.1, 23.251, 23.301, 23.303, 23.305, 23.307, 23.561, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.625, 23.955, 23.963, 23.965, 23.993, 23.1163, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1327, 23.1337, 23.1351, 23.1357, 23.1365, 23.1431, 23.1541, 23.1543, 23.1549, 23.1553, 23.1581, 23.1583, 23.1585
FAR 23 Amdt 43 (on elect to comply basis): § 23.1357
FAR 23 Amdt 45 (on elect to comply basis): § 23.1549
FAR 23 Amdt 48 (on elect to comply basis): § 23.611
FAR 23 Amdt 51 (on elect to comply basis): § 23.1305

Special Condition: SC P68/F01 "Installation VM 1000 (MOD P68/018)", ref. doc. WG-318 "Harmonised FAA NPRM and JAA NPA" dated 18/11/1998; AC/AMJ 20.1317

For Type Design Change No. **MOD P68/31** "Change to the Trim Stabilizer Actuating System", in addition to P.68 Observer 2 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994
§§ 23.405, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.671, 23.677, 23.683, 23.685, 23.689
FAR 23 Amdt 48 (on elect to comply basis): §§ 23.607, 23.611

For Type Design Change No. **MOD P68/52** "Cloud Seeding System Installation (Aero System E-16 Silver Iodide Seeding Generators)", in addition to P.68 Observer 2 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001
§§ 23.21, 23.23, 23.25, 23.29, 23.31, 23.33, 23.45, 23.49, 23.51, 23.53, 23.55, 23.57, 23.59, 23.61, 23.63, 23.65, 23.66, 23.67, 23.69, 23.71, 23.73, 23.75, 23.77, 23.141, 23.143, 23.145, 23.147, 23.149, 23.151, 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, 23.253, 23.629, 23.777, 23.863, 23.867, 23.1301, 23.1309, 23.1322, 23.1351, 23.1357, 23.1359, 23.1365, 23.1367, 23.1501, 23.1505, 23.1507, 23.1511, 23.1513, 23.1519, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1559, 23.1563, 23.1581, 23.1583, 23.1585, 23.1587, 23.1589
FAR 23 Amdt 7: §§ 23.611, 23.615, 23.619, 23.625
FAR 23 Amdt 45: § 23.613, 23.621
FAR 23 Amdt 48: § 23.607

For Type Design Change No. **MOD P68/86** "S-TEC 55X Autopilot Installation", in addition to P.68 Observer 2 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.29, 23.143, 23.253, 23.601, 23.603, 23.605, 23.607, 23.609, 23.685, 23.689, 23.1529, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 18:
§§ 23.1301, 23.1309, 23.1321, 23.1329, 23.1357, 23.1365, 23.1367, 23.1381, 23.1431
FAR 23 Amdt 49: § 23.1359

For Type Design Change No. **MOD P68/123** "SAGEM Avionics Integrated cockpit installation (IFR)", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements and Equivalent Level Of Safety are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.771, 23.773, 23.777, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1327, 23.1331, 23.1337, 23.1351, 23.1357, 23.1359, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 1549, 23.1559, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
FAR 23 Amdt 17: § 23.1303

Special Condition:
JAR 23 Amdt 1 par. 23.1309(e) according to JAA INT/POL/23/1 [ref. EASA CRI F-01 issue 3 dated 21/03/2008 "HIRF protection"]

Equivalent Level Of Safety:
JAR 23 effective 11 March 1994 para. 23.1545(b)(1), 23.1545(b)(5), 23.1545(b)(6) [ref. EASA CRI G-01 issue 8 dated 25/03/2008 "Sagem Avionics Display Airspeed Markings"]

For Type Design Change No. **MOD P68/126** "Garmin GNS 430W/530W (WAAS) system installation", in addition to P.68 Observer 2 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001
§§ 23.1, 23.601, 23.603, 23.605, 23.611, 23.1301, 23.1309, 23.1311, 23.1321, 23.1327, 23.1351, 23.1357, 23.1365, 23.1431, 23.1581, 23.1583, 23.1585, 23.1589

For Type Design Change No. **MOD P68/157** "Replacing Cross Bow 500GA with AXITUDE AX1-200 in SAGEM glass cockpit (IFR)", in addition to P.68 Observer 2 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994:
§§ 23.1, 23.23, 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.1301, 23.1309, 23.1351, 23.1357, 23.1359, 23.1365, 23.1431, 23.1501, 23.1525, 23.1529, 23.1541, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 57 (on elect to comply basis): § 23.1308

For Type Design Change No. **MOD P68/223** "Fixed oxygen system kit installation", in addition to P.68 Observer 2 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.601, 23.603, 23.605, 23.625, 23.1357, 23.1367, 23.1501, 23.1529, 23.1541, 23.1581, 23.1583, 23.1585
FAR 23 Amdt 9: § 23.1449
FAR 23 Amdt 17: § 23.1309
FAR 23 Amdt 36: § 23.561
FAR 23 Amdt 43: §§ 23.1441, 23.1443, 23.1445
FAR 23 Amdt 49: §§ 23.1447, 23.1451, 23.1453

For Type Design Change No. **MOD P68/240** "Garmin G950 avionics installation", in addition to P.68 Observer 2 Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.623, 23.625, 23.627, 23.771, 23.773, 23.777, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1327, 23.1331, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1581, 23.1583, 23.1585, 23.1589
FAR 23 Amdt 7: § 23.1323
FAR 23 Amdt 18: §§ 23.1303, 23.1325

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 "HIRF Protection - Integrated Avionics Systems" [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/288** "Extension of MOD.P68/97 applicability to P.68 Observer 2 and P68TC Observer variants", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 effective 11 March 1994: §§ 23.1501, 23.1524, 23.1529, 23.1581, 23.1583, 23.1589
FAR 23 Amdt 7: § 23.572

For Type Design Change No. **MOD P68/311** "PFD and MFD SW update. Installation of GSR56, GRA5500 and GTX33 with ADS-B Out", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.773, 23.867, 23.963, 23.1301, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1367, 23.1431, 23.1501, 23.1529, 23.1541, 23.1543, 23.1545, 23.1549, 23.1553, 23.1581, 23.1583, 23.1585, 23.1589
CS-ACNS Initial Issue: Subpart B Section 1; Subpart D Section 4

Special Condition:
EASA CRI F-01 issue 3 dated 03/08/2011 "HIRF Protection - Integrated Avionics Systems" [JAA INT/POL/23/1 issue 1]

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/320** "GWX 70R Weather Radar installation", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.625, 23.627, 23.867, 23.1301, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1367, 23.1431, 23.1501, 23.1529, 23.1581, 23.1585, 23.1589
FAR 23 Amdt 20: § 23.1401
FAR 23 Amdt 31: § 23.629

For Type Design Change No. **MOD P68/321** "Extension of MOD.P68/302 applicability to P.68 Observer variants", in addition to P.68TC Observer Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.771, 23.773, 23.1301, 23.1311, 23.1321, 23.1322, 23.1331, 23.1351, 23.1353, 23.1357, 23.1359, 23.1365, 23.1381, 23.1431, 23.1501, 23.1529, 23.1541, 23.1543, 23.1545, 23.1581, 23.1585, 23.1589

FAR 23 Amdt 7: § 23.1323
CS-ACNS Initial Issue: Subpart E Section 1

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

For Type Design Change No. **MOD P68/328** "Garmin G1000 Nxi and GFC700 autopilot installation", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

CS 23 Amdt 4: §§ 23.1306, 23.1308, 23.1309
JAR 23 Amdt 1 effective 01 February 2001:
§§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.771, 23.773, 23.777, 23.963, 23.1301, 23.1305, 23.1311, 23.1321, 23.1322, 23.1327, 23.1331, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1581, 23.1583, 23.1585, 23.1589
JAR 23 Amdt 0 effective 11 March 1994:
§§ 23.685, 23.689
FAR 23 Amdt 17: § 23.1303
CS-ACNS Initial Issue: Subpart B Section 1; Subpart D Section 2; Subpart D Section 3; Subpart E Section 1
JAA TGL-10: §§ 6.1, 6.2, 6.3, 7.1, 7.2, 8.1, 8.1.1, 8.1.2, 8.2, 8.3, 8.4, 8.5, 9
AMC 20-27A: §§ 6.1, 6.2.1, 6.2.2, 6.3.1, 6.4, 6.5, 7.1, 7.2, 7.3, 7.4, 8.2, 8.4, 8.4.1, 8.4.2, 8.4.3, 9
AMC 20-28: §§ 6.1, 6.2.1, 6.2.2, 6.2.3, 6.3, 6.3.1, 6.3.2, 6.3.3, 6.4, 6.5, 7.1, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 9
AMC 20-15: §§ 4, 5, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 7, 8, 9

Special Condition:
EASA CRI B-01 issue 3 dated 03/08/2011 "Human Factors in Integrated Avionics Systems" [SC/P68 SERIE/04]

NOTE L/2: Basic equipment required by the applicable airworthiness design standard (see certification basis) shall be installed in the aircraft for the first certification.
In addition, the following equipment are required:
- Safe Flight Instrument Corp. pre-stall detector Type 164, or equivalent
- Aircraft Flight Manual (see § L.IV)

NOTE L/3: For the determination of the empty weight and associated centre of gravity position, unusable fuel and engine undrainable lubricant must be included as noted below:

Aircraft up to s/n 410

Unusable Fuel:	12,9 kg (28,44 lb) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 Kg (12,57 lb) at +0,770 m (+30,3 in) for the auxiliary wing tank *(see Note L/4a)*
Undrainable Lubricant:	0,454 kg (1 lb) at +0,100 m (+4 in)

Aircraft from s/n 411

Unusable Fuel *(see Note L/4b)*	12,9 kg (28,44 lb) at +0,770 m (+30,3 in) for Standard Range Configuration 18,7 Kg (41,23 lb) at +0,770 m (+30,3 in) for Long Range Configuration
Undrainable Lubricant:	0,454 kg (1 lb) at +0,100 m (+4 in)

NOTE L/4: **Fuel Capacities**

L/4a) P.68 Observer 2 aircraft up to s/n 410 can be equipped with two auxiliary fuel tanks with transfer pumps (Kit P/N 68-050). For aircraft in this configuration, the total fuel capacity is 696 Lt (184 U.S.Gal) distributed as follows:

- 2 Main Wing Tanks:
  296 Lt (71 U.S.Gal) at +0.770 m (+30.3 in) per tank
  Unusable: 4 Lt (1 U.S.Gal) per tank
- 2 Auxiliary Wing Tanks:
  79 Lt (21 U.S.Gal) at +0.770 m (+30.3 in) per tank
  Unusable: 4 Lt (1 U.S.Gal) per tank

L/4b) For P.68 Observer 2 aircraft from s/n 411 onwards (embodying MOD P68/17), two wing tank configurations are approved:

- **STANDARD RANGE**
  Total fuel capacity: 538 Lt (142 U.S.Gal) at +0,770 m (+30,3 in)
  Total unusable fuel: 18 Lt (4,7 U.S.Gal)
- **LONG RANGE**
  Total fuel capacity: 696 Lt (184 U.S.Gal) at +0,770 m (+30,3 in)
  Total unusable: 26 Lt (6,9 U.S.Gal)

NOTE L/5: Following placard shall be installed in full view of pilot:
"THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS"
Moreover all placards required in the Aircraft Flight Manual shall be installed in the proper location.

NOTE L/6a: P.68 Observer 2 aircraft from s/n 446 onwards, including s/n 423, may be equipped since new with governors "MT-Propeller" (as per Change No. MOD P68/111): P-881-30 (left), P-881-31 (right).

NOTE L/6b: P.68 Observer 2 aircraft from s/n 499 onwards may be equipped since new with governors Hartzell model S-2-2K (left) and S-2-3K (right) (as per Type Design Change No. MOD P68/245).

NOTE L/7: P.68 Observer 2 aircraft from s/n 411 onwards may be equipped since new with a "Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System" electronic powerplant instrumentation system, in lieu of the standard powerplant instrumentation (as per Type Design Change No. MOD P68/18).

NOTE L/8: P.68 Observer 2 aircraft from s/n 446 onwards, including s/n 423, may be equipped since new with SAGEM Avionics Integrated Display System approved for IFR operations, in lieu of the standard instrument panel layout (as per Type

Design Changes No. MOD P68/123 and MOD P68/157).

NOTE L/9: P.68 Observer 2 aircraft from s/n 446 onwards, including s/n 423, may be equipped since new with a S-Tec 55X Autopilot (as per Type Design Change No. MOD P68/86).

NOTE L/10: P.68 Observer 2 aircraft from s/n 401 onwards may be equipped with a fixed oxygen system kit (as per Type Design Change No. MOD P68/223).

NOTE L/11: P.68 Observer 2 aircraft from s/n 465 to s/n 512, except s/n 495, are equipped with Garmin G950 Integrated Flight Deck System (as per Type Design Change No. MOD P68/240).

NOTE L/12: For P.68 Observer 2 aircraft (from s/n 401 onwards) embodying the Type Design Change MOD P68/288 or applying SB 155, the number of seats is 7, distributed as follows:
3 at -0,950 m (-37,4 in), 2 at -0,146 m (-5,75 in), 2 at +0,867 m (+34,2 in)

NOTE L/13: P.68 Observer 2 aircraft from s/n 401 onwards are approved for a Maximum Zero Fuel Weight (MZFW) of 1967 kg (as per Type Design Change No. MOD P68/288).

NOTE L/14: P.68 Observer 2 aircraft from s/n 465 onwards may be equipped with MidContinent MD302 digital triple stand-by instrument (as per Type Design Change No. MOD P68/321).

NOTE L/15: P.68 Observer 2 aircraft from s/n 488 onwards may be equipped with Garmin GSR56 Satellite Transceiver and/or Garmin GRA5500 Radar Altimeter (as per Type Design Change No. MOD P68/311).

NOTE L/16: P.68 Observer 2 aircraft from s/n 495 onwards may be equipped with Garmin GWX70R Weather Radar installed in the wing tip (as per Type Design Change No. MOD P68/320).

NOTE L/17: P.68 Observer 2 aircraft from s/n 514 onwards, plus s/n 495, are equipped since new with Garmin G1000 NXi Integrated Flight Deck System and GFC700 Autopilot (as per Type Design Change No. MOD P68/328).

NOTE L/18: P.68 Observer 2 aircraft installing Garmin G1000 NXi avionics system are approved for the following PBN Operations:
- P-RNAV (RNAV 1, RNP 1): Precision RNAV Operations in designated European Airspace including departures, arrivals, and approaches up to the point of the Final Approach Fix
- RNP APCH LNAV: GPS Non-Precision Approach without vertical guidance
- RNP APCH LNAV/VNAV: APV BARO with vertical guidance (based on SBAS)
- RNP APCH LPV: APV SBAS Localizer Performance with vertical guidance

NOTE L/19: P.68 Observer 2 aircraft from s/n 514 onwards, plus s/n 495, may be equipped with Garmin GTS8000 ACAS II system (as per Type Design Change No. MOD P68/328).

ADMINISTRATIVE SECTION

I. Acronyms

ENAC – Ente Nazionale per l'Aviazione Civile
EASA – European Union Aviation Safety Agency
FAA – Federal Aviation Administration
FAR – Federal Aviation Regulations
ICAO – International Civil Aviation Organization
IFR – Instrument Flight Rules
IPC – Illustrated Part Catalogue
KCAS – Knots Calibrated Air Speed
MAC – Mean Aerodynamic Chord
MIL – Military Standard
MLW – Maximum Landing Weight
MTOW – Maximum Take-Off Weight
MZFW – Maximum Zero Fuel Weight
RAI – Registro Aeronautico Italiano
TC – Type Certificate
TCDS – Type Certificate Data Sheet
VFR – Visual Flight Rules

II. Type Certificate Holder Record

TC No.	Issued by	Date	TC Holder
A 151	RAI		PARTENAVIA Costruzioni Aeronautiche S.p.A. Napoli - Italy
A 365	ENAC	25 November 1998	VULCANAIR S.p.A.. via Francesco Caracciolo, 15 80122 Napoli Italy
A.385	EASA	16 October 2009	VULCANAIR S.p.A. via Francesco Caracciolo, 15 80122 Napoli Italy

III. Change Record

Issue	Date	Changes	TC Issue No. & Date
1	16 October 2009	First issue	Is.1 16 October 2009
2	31 July 2013	Introduction of Type Design Changes MOD P68/124, MOD P68/151, MOD P68/223, MOD P68/229, MOD P68/240 and MOD P68/247	
3	15 December 2014	Introduction of Type Design Change MOD P68/266	
4	26 November 2015	Introduction of OSD MMEL for P.68 [Garmin G950 cockpit configuration]	
5	09 May 2017	Introduction of OSD MMEL and FCD for AP68TP-600 Viator [Garmin G950 cockpit configuration]	
6	18 October 2017	Introduction of Type Design Changes MOD P68/245, MOD P68/288, MOD P68/302, MOD P68/311, MOD P68/320, MOD P68/321, MOD P68/326, MOD P68/327 and MOD P68/331	
7	28 January 2020	Introduction of Type Design Change MOD P68/328	

8	25 May 2020	Removed certification basis for environmental requriements nd replaced with reference to the TCDSN. For all models. See track bar for changes.	