



## *European Aviation Safety Agency*

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**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 02: 31 July 2013

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## **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: ICAO Annex 16, Volume I, Chapter 6  
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: Total: 410 Lt (108 U.S.Gal)  
(see Note A/4 or A/5) [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: $35^{\circ} \pm 2^{\circ}$  |                                  |
| Ailerons  | Up: $30^{\circ} \pm 2^{\circ}$  | Down: $17^{\circ} \pm 2^{\circ}$ |
| Stabilator (leading edge)   | Up: $6^{\circ} \pm 2^{\circ}$   | Down: $16^{\circ} \pm 2^{\circ}$ |
| Stabilator tab (trailing edge)<br>(with respect to stabilator<br>chord) | Down: $1^{\circ} \pm 1^{\circ}$ (min)<br>$15^{\circ} \pm 1^{\circ}$ (max) |                                  |
| Rudder:   | Right: $25^{\circ} \pm 2^{\circ}$   | Left: $25^{\circ} \pm 2^{\circ}$ |
| Rudder tab:   | Right: $30^{\circ} \pm 2^{\circ}$   | Left: $30^{\circ} \pm 2^{\circ}$ |
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: ICAO Annex 16, Volume I, Chapter 10  
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: Total: 410 Lt (108 U.S.Gal)  
(see Note B/4 or B/5) [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: $35^\circ \pm 2^\circ$                                      |                              |
| Ailerons  | Up: $30^\circ \pm 2^\circ$  | Down: $17^\circ \pm 2^\circ$ |
| Stabilator (leading edge)   | Up: $6^\circ \pm 2^\circ$   | Down: $16^\circ \pm 2^\circ$ |
| Stabilator tab (trailing edge)<br>(with respect to stabilator<br>chord) | Down: $1^\circ \pm 1^\circ$ (min)<br>$15^\circ \pm 1^\circ$ (max) |                              |
| Rudder:   | Right: $25^\circ \pm 2^\circ$                                     | Left: $25^\circ \pm 2^\circ$ |
| Rudder tab:   | Right: $30^\circ \pm 2^\circ$                                     | Left: $30^\circ \pm 2^\circ$ |
17. Levelling Means:
- |               |  |
|---------------|--|
| Lateral:      | Across seat tracks   |
| Longitudinal: | Two screws on the fuselage left side, between<br>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        15 February 1973  
   Date:
7. National Certifying Authority   Italian Authority RAI (nowadays ENAC)
8. National Authority Type        31 July 1978 (RAI TC No. A 151;  
   Certificate Date:                    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: FAR 23 effective 1 February 1965 including Amdt 1  
   (*see Note C/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: ICAO Annex 16, Volume I, Chapter 10  
Fuel venting & engine emission: N/A
9. (Reserved) Additional National Requirements: N/A
10. (Reserved) N/A

### **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:** doc. p/n NOR10.719-4 (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 Note C/10)  
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: Total: 410 Lt (108 U.S.Gal)  
(see Notes C/5, C/6a or C/6b) [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: 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:  $35^\circ \pm 2^\circ$

Ailerons

Up:  $30^\circ \pm 2^\circ$

Down:  $17^\circ \pm 2^\circ$

Stabilator (leading edge)

Up:  $6^\circ \pm 2^\circ$

Down:  $16^\circ \pm 2^\circ$

Stabilator tab (trailing edge)  
(with respect to stabilator  
chord)

Down:  $1^\circ \pm 1^\circ$  (min)  
 $15^\circ \pm 1^\circ$  (max)

Rudder:

Right:  $25^\circ \pm 2^\circ$

Left:  $25^\circ \pm 2^\circ$

Rudder tab:

Right:  $30^\circ \pm 2^\circ$

Left:  $30^\circ \pm 2^\circ$

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:** doc. p/n NOR10.707-30CRefer 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 AMM10.702-3Refer 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 IPC10.703-3Refer 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. 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 17: § 23.1303,

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"]

**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/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 since new or applying Vulcanair Service Bulletin No. 193 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 onwards may be equipped with Garmin G950 Integrated Flight Deck System (as per Type Design Change No. MOD P68/240).

## **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       2 January 1979  
   Date:
7. National Certifying Authority   Italian Authority RAI (nowadays ENAC)
8. National Authority Type       23 July 1979 (RAI TC No. A 151;  
   Certificate Date:               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: ICAO Annex 16, Volume I, Chapter 10<br>Fuel venting & engine emission: N/A |
| 9. (Reserved) Additional National Requirements: | N/A   |
| 10. (Reserved)                                  | N/A   |

### **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 of "Aircraft Flight Manual" doc. p/n NOR10.719-1 (see Note D/2)   |
| 4. Dimensions:             | Length: 9,55 m (31,33 ft)<br>Height: 3,40 m (11,15 ft)<br>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<br>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( )/FC7666A-4<br>Governors: 2 Woodward model ( )210655, or alternatively<br>2 Woodward model ( )210844<br>(see Note D/10)<br>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):<br>Max + 81,2° ± 0,3°<br>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: **Up to s/n 209:**  
(see Notes D/3, D/4 and D/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
- From s/n 210 onwards:** (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:

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: $35^{\circ} \pm 2^{\circ}$  |                                  |
| Ailerons   | Up: $30^{\circ} \pm 2^{\circ}$  | Down: $17^{\circ} \pm 2^{\circ}$ |
| Stabilator (leading edge)  | Up: $6^{\circ} \pm 2^{\circ}$   | Down: $16^{\circ} \pm 2^{\circ}$ |
| Stabilator tab (trailing edge)<br>(with respect to stabilator chord) | Down: $1^{\circ} \pm 1^{\circ}$ (min)<br>$15^{\circ} \pm 1^{\circ}$ (max) |                                  |
| Rudder:  | Right: $25^{\circ} \pm 2^{\circ}$   | Left: $25^{\circ} \pm 2^{\circ}$ |
| Rudder tab:  | Right: $30^{\circ} \pm 2^{\circ}$   | Left: $30^{\circ} \pm 2^{\circ}$ |
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) **Up to s/n 402:** doc. p/n NOR10.707-1  
**From s/n 412 onwards:** doc. p/n NOR10.707-1B  
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 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 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

#### **D.V. 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 17: § 23.1303

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"]

**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:

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

**From s/n 412 onwards**

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/10:** P.68C aircraft from s/n 443 onwards 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 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 Changes 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 since new or applying Vulcanair Service Bulletin No. 193 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 onwards may be equipped with Garmin G950 Integrated Flight Deck System (as per Type Design Change No. MOD P68/240).



## **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:    **VULCAIR S.P.A.**  
    via Giovanni Pascoli, 7  
    80026 - Casoria (Napoli)  
    Italy
5. Manufacturer:                 **VULCAIR S.P.A.**  
    via Giovanni Pascoli, 7  
    80026 - Casoria (Napoli)  
    Italy
6. Certification Application    2 January 1979  
   Date:
7. National Certifying Authority Italian Authority RAI (nowadays ENAC)
8. National Authority Type    29 April 1980 (RAI TC No. A 151;  
   Certificate Date:                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: FAR 23 effective 1 February 1965 including Amdt 1  
   (*see Note E/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: ICAO Annex 16, Volume I, Chapter 10<br>Fuel venting & engine emission: N/A |
| 9. (Reserved) Additional National Requirements: | N/A   |
| 10. (Reserved)                                  | N/A   |

### **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" doc. p/n NOR10.707-20 (for aircraft powered by TO-360-C1A6D engine) and p/n NOR10.707-2 (for aircraft powered by TIO-360-C1A6D engine)<br>(see Note E/2) |
| 4. Dimensions:                       | Length: 9,55 m (31,33 ft)<br>Height: 3,40 m (11,15 ft)<br>Width (Wing Span): 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:<br>(see Note E/3) | 2575 rpm, 42" Hg (210 HP)<br>Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitations Section<br><br><i>Or alternatively</i>   |
| 5.2.1 Model:                         | 2 Lycoming TIO-360-C1A6D   |
| 5.2.2 Type Certificate:              | FAA Type Certificate No. E16EA   |
| 5.2.3 Limitations:<br>(see Note E/3) | 2575 rpm, 44" Hg (210 HP)<br>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<br>Governors: 2 Woodward model ( )210655, or alternatively<br>2 Woodward model ( )210844<br>(see Note E/11)<br>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: Total: 538 Lt (142 U.S.Gal)  
(see Notes E/4, E/5a or E/5b) [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 Note 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: 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: $35^\circ \pm 2^\circ$	
Ailerons	Up: $30^\circ \pm 2^\circ$	Down: $17^\circ \pm 2^\circ$
Stabilator (leading edge)	Up: $6^\circ \pm 2^\circ$	Down: $16^\circ \pm 2^\circ$
Stabilator tab (trailing edge) (with respect to stabilator chord)	Down: $1^\circ \pm 1^\circ$ (min) $15^\circ \pm 1^\circ$ (max)	
Rudder:	Right: $25^\circ \pm 2^\circ$	Left: $25^\circ \pm 2^\circ$
Rudder tab:	Right: $30^\circ \pm 2^\circ$	Left: $30^\circ \pm 2^\circ$

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:** doc. p/n NOR10.707-2B
  - 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 doc. NOR10.709-2 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 NOR10.777-1 "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 NOR10.711-2  
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

#### **E.V. 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

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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 17: § 23.1303

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"]

**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 aircraft 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 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 Changes 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 since new or applying Vulcanair Service Bulletin No.193 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 onwards may be equipped since new with Garmin G950 Integrated Flight Deck System (as per Type Design Change No. MOD P68/240).

## **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: ICAO Annex 16, Volume I, Chapter 10<br>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:<br>(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<br>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<br>Governors: 2 Woodward model ( )210655, or alternatively<br>2 Woodward model ( )210844<br>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):<br>Max + 81,2° ± 0,3°<br>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 Note F/5)

- 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: $35^\circ \pm 2^\circ$                                      |                              |
| Ailerons  | Up: $30^\circ \pm 2^\circ$  | Down: $17^\circ \pm 2^\circ$ |
| Stabilator (leading edge)   | Up: $6^\circ \pm 2^\circ$   | Down: $16^\circ \pm 2^\circ$ |
| Stabilator tab (trailing edge)<br>(with respect to stabilator<br>chord) | Down: $1^\circ \pm 1^\circ$ (min)<br>$15^\circ \pm 1^\circ$ (max) |                              |
| Rudder:   | Right: $25^\circ \pm 2^\circ$                                     | Left: $25^\circ \pm 2^\circ$ |
| Rudder tab:   | Right: $30^\circ \pm 2^\circ$                                     | Left: $30^\circ \pm 2^\circ$ |
17. Levelling Means:
- |               |  |
|---------------|--|
| Lateral:      | Across seat tracks   |
| Longitudinal: | Two screws on the fuselage left side, between<br>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 certification 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 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 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 Bulletin 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.

## **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: FAR 23 effective 1 February 1965 including Amdt 1 (see Note G/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: ICAO Annex 16, Volume I, Chapter 6<br>Fuel venting & engine emission: Not available |
| 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<br>(see Note G/2) |                    |
| 4. Dimensions:             | Length:  | 9,90 m (32,48 ft)  |
|                            | Height:  | 3,65 m (11,97 ft)  |
|                            | Width (Wing Span):   | 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-21R, or  
2 Hartzell HC-B3TF-7A/T10173FN-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-Phosphate 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: $35^\circ \pm 2^\circ$	
Ailerons	Up: $30^\circ \pm 2^\circ$	Down: $17^\circ \pm 2^\circ$
Elevator	Up: $26^\circ \pm 1^\circ$	Down: $12^\circ \pm 1^\circ$
Elevator Trim Tab (with elevator neutral):	Up: $10^\circ \pm 1^\circ$	Down: $39^\circ \pm 1^\circ$
Rudder:	Right: $25^\circ \pm 2^\circ$	Left: $25^\circ \pm 2^\circ$
Rudder tab:	Right: $20^\circ \pm 2^\circ$	Left: $20^\circ \pm 2^\circ$
Aileron Tab (with aileron neutral):	Up: $19^\circ \pm 2^\circ$	Down: $19^\circ \pm 2^\circ$

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: 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  
(see Note H/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: ICAO Annex 16, Volume I, Chapter 10<br>Fuel venting & engine emission: N/A |
| 9. (Reserved) Additional National Requirements: | N/A   |
| 10. (Reserved)                                  | N/A   |

### **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:<br>(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 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)<br>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<br>Governors: 2 Woodward model ( )210655, or alternatively<br>2 Woodward model ( )210844<br>(see Note H/11)<br>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:<br>(see Note H/3) | Pitch setting at station 0,762 m (30 in):<br>Max + 81° ± 1°<br>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: Total: 538 Lt (142 U.S.Gal)  
(see Notes H/4, H/5, H/8, H/15) [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: Day/Night-VFR, IFR, depending on installed equipment.  
Flight in icing conditions is prohibited

13. Maximum Weights:

(see Note H/6)

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: $35^\circ \pm 2^\circ$                                      |                              |
| Ailerons  | Up: $30^\circ \pm 2^\circ$  | Down: $17^\circ \pm 2^\circ$ |
| Stabilator (leading edge)   | Up: $6^\circ \pm 2^\circ$   | Down: $16^\circ \pm 2^\circ$ |
| Stabilator tab (trailing edge)<br>(with respect to stabilator<br>chord) | Down: $1^\circ \pm 1^\circ$ (min)<br>$15^\circ \pm 1^\circ$ (max) |                              |
| Rudder:   | Right: $25^\circ \pm 2^\circ$                                     | Left: $25^\circ \pm 2^\circ$ |
| Rudder tab:   | Right: $30^\circ \pm 2^\circ$                                     | Left: $30^\circ \pm 2^\circ$ |
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 H/7)
- |                                  |
|----------------------------------|
| 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)
- |                                |                       |
|--------------------------------|-----------------------|
| <b>Aircraft up to s/n 394:</b> | doc. p/n NOR10.707-4  |
| <b>Aircraft s/n 400:</b>       | doc. p/n NOR10.707-4A |
| <b>Aircraft from s/n 415:</b>  | doc. p/n NOR10.707-4B |
- 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:** doc. p/n NOR10.709-4A 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 NOR10.777-1 “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:** doc. p/n NOR10.711-11A plus doc. p/n NOR10.711-4
  - 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. 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

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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 17: § 23.1303

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"]

**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:

**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 Notes H/5 and H/8)
Undrainable Lubricant:	0,454 kg (1 lb) at +0,100 m (+4 in)

**From s/n 415 onwards**

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/7:** 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/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 Supplement L.

**NOTE H/9:**

- For P.68TC Observer embodying Service Bulletin 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 Changes 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 since new or applying Vulcanair Service Bulletin No.193 with a fixed oxygen system kit (as per Type Design Change No. MOD P68/223).

**NOTE H/17:** P.68TC Observer aircraft from s/n 472 onwards may be equipped since new with Garmin G950 Integrated Flight Deck System (as per Type Design Change No. MOD P68/240).

## **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: 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: ICAO Annex 16, Volume I, Chapter 10<br>Fuel venting & engine emission: Not available |
| 9. (Reserved) Additional National Requirements: | N/A   |
| 10. (Reserved)                                  | N/A   |

### **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 (from s/n 9005 onwards)<br>(see Note I/2) |
| 4. Dimensions:             | <b>Up to s/n 9004:</b><br>Length: 10,89 m (35,73 ft)<br>Height: 3,63 m (11,91 ft)<br>Width (Wing Span): 12,00 m (39,37 ft)                                    |

**From s/n 9005:**

Length: 11,27 m (36,97 ft)  
Height: 3,63 m (11,91 ft)  
Width (Wing Span): 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-21R, or  
2 Hartzell HC-B3TF-7A/T10173FN-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-Phosphate 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:

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

13. Maximum Weights:

	<b>Up to s/n 9004</b>	<b>From s/n 9005 onwards</b>
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:

**Up to s/n 9004**

Wing Flaps

Down:  $35^{\circ} \pm 2^{\circ}$

Ailerons

Up:  $30^{\circ} \pm 2^{\circ}$

Down:  $17^{\circ} \pm 2^{\circ}$

Elevator

Up:  $26^{\circ} \pm 1^{\circ}$

Down:  $12^{\circ} \pm 1^{\circ}$

Elevator Trim Tab

(with elevator neutral):

Up:  $10^{\circ} \pm 1^{\circ}$

Down:  $39^{\circ} \pm 1^{\circ}$

Rudder:

Right:  $25^{\circ} \pm 2^{\circ}$

Left:  $25^{\circ} \pm 2^{\circ}$

Rudder tab:

Right:  $20^{\circ} \pm 2^{\circ}$

Left:  $20^{\circ} \pm 2^{\circ}$

Aileron Tab

(with aileron neutral):

Up:  $19^{\circ} \pm 2^{\circ}$

Down:  $19^{\circ} \pm 2^{\circ}$

**From s/n 9005 onwards**

Wing Flaps

Down:  $35^{\circ} \pm 2^{\circ}$

Ailerons

Up:  $30^{\circ} \pm 2^{\circ}$

Down:  $17^{\circ} \pm 2^{\circ}$

Elevator

Up:  $17^{\circ} \pm 1^{\circ}$

Down:  $12^{\circ} \pm 1^{\circ}$

Elevator Trim Tab (with elevator  
neutral):

Up:  $15^{\circ} \pm 1^{\circ}$

Down:  $39^{\circ} \pm 1^{\circ}$

Rudder:

Right:  $25^{\circ} \pm 2^{\circ}$

Left:  $25^{\circ} \pm 2^{\circ}$

Rudder tab:

Right:  $20^{\circ} \pm 2^{\circ}$

Left:  $20^{\circ} \pm 2^{\circ}$

Aileron Tab

(with aileron neutral):

Up:  $24^{\circ} \pm 2^{\circ}$

Down:  $17^{\circ} \pm 2^{\circ}$



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 I/4) Total 11  
(for loading information refer to Aircraft Flight Manual)
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 from s/n 9005:** doc. p/n NOR10.707-6A  
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 from s/n 9005:** doc. p/n NOR10.709-6A 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. 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

**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 aircraft 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.

## **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: **VULCAIR S.P.A.**  
via Giovanni Pascoli, 7  
80026 - Casoria (Napoli)  
Italy
5. Manufacturer: **VULCAIR 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: 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: ICAO Annex 16, Volume I, Chapter 10<br>Fuel venting & engine emission: N/A |
| 9. (Reserved) Additional National Requirements: | N/A   |
| 10. (Reserved)                                  | N/A   |

### **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 onwards)<br>(see Note L/2)   |
| 4. Dimensions:             | <b>Up to s/n 410:</b><br>Length: 9,54 m (31,30 ft)<br>Height: 3,40 m (11,15 ft)<br>Width (Wing Span): 12,00 m (39,37 ft)<br><b>From s/n 411 onwards:</b><br>Length: 9,15 m (30,02 ft)<br>Height: 3,40 m (11,15 ft)<br>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<br>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 Note L/6)  
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: 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)
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:  $35^\circ \pm 2^\circ$   
Ailerons Up:  $30^\circ \pm 2^\circ$  Down:  $17^\circ \pm 2^\circ$   
Stabilator (leading edge) Up:  $6^\circ \pm 2^\circ$  Down:  $16^\circ \pm 2^\circ$   
Stabilator tab (trailing edge) Down:  $1^\circ \pm 1^\circ$  (min)  
(with respect to stabilator chord)  $15^\circ \pm 1^\circ$  (max)  
Rudder: Right:  $25^\circ \pm 2^\circ$  Left:  $25^\circ \pm 2^\circ$   
Rudder tab: Right:  $30^\circ \pm 2^\circ$  Left:  $30^\circ \pm 2^\circ$
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 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: **Aircraft up to s/n 410:** doc. p/n NOR10.707-8  
(see Note L/5) **Aircraft from s/n 411:** doc. p/n NOR10.707-8B  
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:  
doc. p/n NOR10.709-10 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 NOR10.711-11A  
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. 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 17: § 23.1303

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]

**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:

**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)

**From s/n 411 onwards**

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/6** : 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/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 Changes 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 since new or applying Vulcanair Service Bulletin No.193 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 onwards may be equipped since new with Garmin G950 Integrated Flight Deck System (as per Type Design Change No. MOD P68/240).

## **ADMINISTRATIVE SECTION**

### **I. Acronyms**

ENAC – Ente Nazionale per l'Aviazione Civile  
 EASA – European 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**

<b>TC No.</b>	<b>Issued by</b>	<b>Date</b>	<b>TC Holder</b>
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**

<b>Issue</b>	<b>Date</b>	<b>Changes</b>	<b>TC Issue No. &amp; Date</b>
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	Is. 2 31 July 2013