

EASA
TYPE CERTIFICATE DATA SHEET
VULCANAIR P.68

P68 series: P.68 "Victor"
P.68 B "Victor"
P.68 R "Victor"
P.68 C, P.68 C-TC
P.68 "Observer"
P.68 "Observer 2"
P.68TC "Observer"

AP68TP series: AP68TP-300 "Spartacus"
AP68TP-600 "Viator"

Type Certificate Holder:

VULCANAIR S.p.A.

Via Francesco Caracciolo, 15
80122 - Napoli
ITALY

Manufacturer:

VULCANAIR S.p.A.

Via Francesco Caracciolo, 15
80122 - Napoli
ITALY

TABLE OF CONTENTS

<u>TCDS - CHANGE RECORD</u>	4
<u>SECTION A: P.68 "VICTOR"</u>	5
A.I. GENERAL	5
A.II: CERTIFICATION BASIS	5
A.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS	6
A.IV. OPERATING AND SERVICE INSTRUCTIONS	8
A.V. NOTES	9
<u>SECTION B: P.68 B "VICTOR"</u>	12
B.I. GENERAL	12
B.II. CERTIFICATION BASIS	12
B.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS	13
B.IV. OPERATING AND SERVICE INSTRUCTIONS	15
B.V. NOTES	16
<u>SECTION C: P.68 R "VICTOR"</u>	18
C.I. GENERAL	18
C.II. CERTIFICATION BASIS	18
C.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS	19
C.IV. OPERATING AND SERVICE INSTRUCTIONS	21
C.V. NOTES	22
<u>SECTION D: P.68 C</u>	26
D.I. GENERAL	26
D.II. CERTIFICATION BASIS	26
D.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS	27
D.IV. OPERATING AND SERVICE INSTRUCTIONS	29
D.V. NOTES	30
<u>SECTION E: P.68 C-TC</u>	35
E.I. GENERAL	35
E.II. CERTIFICATION BASIS	35
E.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS	36
E.IV. OPERATING AND SERVICE INSTRUCTIONS	38

E.V. NOTES	39
<u>SECTION F: P.68 “OBSERVER”</u>	44
F.I. GENERAL	44
F.II. CERTIFICATION BASIS	44
F.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS	45
F.IV. OPERATING AND SERVICE INSTRUCTIONS	47
F.V. NOTES	47
<u>SECTION G: AP68TP-300 “SPARTACUS”</u>	50
G.I. GENERAL	50
G.II. CERTIFICATION BASIS	50
G.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS	51
G.IV. OPERATING AND SERVICE INSTRUCTIONS	53
G.V. NOTES	54
<u>SECTION H: P.68TC “OBSERVER”</u>	55
H.I. GENERAL	55
H.II. CERTIFICATION BASIS	55
H.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS	56
H.IV. OPERATING AND SERVICE INSTRUCTIONS	58
H.V. NOTES	59
<u>SECTION I: AP68TP-600 “VIATOR”</u>	64
I.I. GENERAL	64
I.II. CERTIFICATION BASIS	64
I.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS	65
I.IV. OPERATING AND SERVICE INSTRUCTIONS	68
I.V. NOTES	68
<u>SECTION L: P.68 “OBSERVER 2”</u>	69
L.I. GENERAL	69
L.II. CERTIFICATION BASIS	69
L.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS	70
L.IV. OPERATING AND SERVICE INSTRUCTIONS	72
L.V. NOTES	73

TCDS - CHANGE RECORD

Issue	Date	Change description
Issue 1	16 October 2009	Transfer from "Ente Nazionale per l'Aviazione Civile (ENAC)" SO/A 365 rev.1, including corrections and amendments, to the EASA Type Certificate Data Sheet EASA.A.385. This EASA TC and TCDS replaces RAI TC n° A 151 and ENAC TC n° A 365

SECTION A: P.68 “Victor”

A.I. GENERAL

- | | |
|-------------------------------------|--|
| 1. Data Sheet EASA No. : EASA.A.385 | Date: 16 October 2009 |
| 2. Type: | P.68 |
| 3. Variant: | P.68 “Victor” |
| 4. Airworthiness Category: | Normal Category Aeroplanes |
| 5. Type Certificate Holder: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 6. Manufacturer: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 7. ENAC Certification Date: | 17 Nov. 1971 (RAI TC n°A151; ENAC TC n°A365) |
| 8. ENAC Application Date: | 22 January 1969 |
| 9. ENAC Recommendation Date: | Not Applicable |
| 10. EASA Type Certification Date: | Not Applicable |

A.II: CERTIFICATION BASIS

- | | |
|---|---|
| 1. Reference Date for determining the applicable requirements: | 22 January 1969 |
| 2. ENAC Certification Date: | 17 November 1971 |
| 3. ENAC Type Certificate Data Sheet No : | SO/ A 365 Rev. 1 Dated 12 December 2000 |
| 4. Airworthiness Requirements: FAR 23 dated 1 st February 1965 | Amdt 1 through 6 |
| 5. Requirements elected to comply: | None |
| 6. Special Conditions: | None |
| 7. Exemptions: | None |
| 8. Equivalent Safety Findings: | None |
| 9. Environmental Standards: | Noise: ICAO Annex 16, Volume I, Chapter 6
Fuel venting & engine emission: Not Applicable |

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 NOR 10.707-12
(see Note A/1)
4. Dimensions: Length: 9,20 m (30,20 ft)
Height: 3,40 m (11,15 ft)
Width (Wing Span): 12,00 m (39,37 ft)
5. Engines: 2 Lycoming IO-360-A1B
or alternatively 2 Lycoming IO-360-A1B6
FAA Type Certificate No. 1E10
 - 5.1 Engine Limits: 200 HP at 2700 rpm (see Note A/2)
Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitations Section
6. Propellers: 2 Hartzell model HC-C2YK-2C/C7666A-4
or alternatively
2 Hartzell Model HC-C2YK-2C()F/FC7666A-4
Full Feathering, 2-Blades aluminium propeller
FAA Type Certificate No. P-920
 - Governors: 2 Hartzell Hydraulic Governor Model F6-3A
or alternatively
2 Woodward Governors Model () 210655
or alternatively
2 Woodward Governors Model () 210844
 - Spinners: 2 Hartzell Model 836-29
 - 6.1 Propeller Limits: Diameter 1,829 m (72 in) No reduction permitted
Pitch setting at 0,762 m (30 in) station:
Max $81,2^\circ \pm 0,3^\circ$; Min $14,2^\circ \pm 0,2^\circ$
7. Fluids:
 - 7.1 Fuel: Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070.
 - 7.2 Lubricant: Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014.

8. Fluid capacities (see Note A/3):
- 8.1 Fuel:
(see Note A/4 or Note A/5)
- Total: 410 L (108 U.S. gal)
[205 L (54 U.S. gal) per wing tank]
at +0,770 m (+30,3 in)
- Unusable: 9 L (2,5 U.S. gal) per tank
- 8.2 Lubricant:
- Total: 15 L (16 qt)
7,5 L (8 qt) per engine
at +0,100 m (+4 in)
- Unusable: 1,8 L (1,9 qt)
9. Air Speeds (see Note A/6):
- | | | |
|--|-------|------|
| Never exceed speed V_{NE} : | 187,5 | KCAS |
| Maximum 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 |
10. Maximum Operating Altitude: Not applicable
11. Operational capability: VFR/IFR, Day/Night, depending on installed equipment
Flight in icing conditions is prohibited.
12. Maximum Masses (see Notes A/6a, A/6b):
- | | |
|-----------|--------------------|
| Take Off: | 1860 Kg (4100 lbs) |
| Landing: | 1860 Kg (4100 lbs) |
13. 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 lbs);
0,259 m (10,2 in) aft of datum (16,8% MAC) at 1503 Kg (3310 lbs) or less with linear variation for intermediate weights |
14. Datum: Tangent to the wing leading edge
15. Levelling references:
- | | |
|---------------|--|
| Lateral: | Across seat tracks |
| Longitudinal: | Two screws on the fuselage left side, between frames n°8 and n°9 |
16. Minimum Flight Crew: 1 (Pilot)
17. 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)

18. Baggage / Cargo Compartment:
Max Allowable Load: 181 Kg (400 lbs)
Location: at +1,412 m (+55,6 in)
19. Wheels and Tires: see Aircraft Flight Manual (§ A.IV)
20. Control Surface Movements:
- | | | |
|--|---------------|-----------------------------------|
| Wing Flaps: | | Down: 35°±2° |
| Ailerons: | Up: 30°±2° | Down: 17°±2° |
| Stabilator (leading edge): | Up: 6°±2° | Down: 16°±2° |
| Stabilator tab (trailing edge with respect to stabilator chord): | | Down: 1°±1° (min)
15°±1° (max) |
| Rudder: | Right: 25°±2° | Left: 25°±2° |
| Rudder tab: | Right: 30°±2° | Left: 30°±2° |

A.IV. OPERATING AND SERVICE INSTRUCTIONS

- Airplane Flight Manual:
(see Note A/8) doc. p/n NOR 10.707-12.
Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.
- Airplane Maintenance Manual: doc. p/n NOR 10.709-9 and all applicable Supplements.
Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision and applicable supplements.
- Service Bulletins, Letters & Instructions: Ref. to doc. p/n NOR 10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"

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 equipments 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 lbs).
- Document p/n NOR10.708-1 "Appendix to Aircraft Flight Manual" for MTOW increase up to 1990 Kg (4387 lbs) and MLW up to 1890 Kg (4167 lbs).

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 lbs) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 Kg (12,57 lbs) at +0,770 m (+30,3 in) for the auxiliary wing tank (see Note A/4)
- Undrainable Lubricant: 0,454 Kg (1 lbs) 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 580L (153 U.S. gal) distributed as follows:

- 2 Main Wing Tanks 205 L (54 U.S. gal) at + 0,770 m (+30,3 in) per tank
Unusable: 9 L (2,5 U.S. gal) per tank
- 2 Auxiliary Wing Tanks 85 L (22,5 U.S. gal) at 0,770 m (+30,3 in) per tank
Unusable: 4 L (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 538L (142 U.S. gal) distributed as follows:

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

NOTE A/6: Maximum Masses

A/6a) P.68 aircraft model, embodying Partenavia Service Bulletin n°21, is approved for:

MTOW - Maximum Take Off Weight of 1960 Kg (4321 lbs)
with the following applicable limitations (ref: RAI Approval n.124.415/T dated 25 June 1975, of AFM Supplement p/n NOR10.708-2 "Supplement G"):

- 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 (+12,80 in) aft of datum (21% MAC) at 1960 Kg (4321 lbs); +0,259 m (+10,2 in) aft of datum (16,8% MAC) at 1600 Kg (3527 lbs) or less with linear variation for intermediate weights

A/6b) P.68 aircraft model, embodying Service Bulletins n°21 and n°160, is approved for:

MTOW - Maximum Take Off Weight of 1990 Kg (4387 lbs),
MLW - Maximum Landing Weight of 1890 Kg (4167 lbs),
with the following limitations (ref: RAI Approval n.156.014/T dated 23 April 1979, of AFM Appendix p/n NOR10.708-1 "Appendix to the Aircraft Flight Manual"):

- 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 lbs); +0,259 m (+10,2 in) aft of datum (16,8% MAC) at 1600 Kg (3527 lbs) or less with linear variation for intermediate weights

NOTE A/7: P.68 aircraft embodying Partenavia Service Bulletin n°29.

The number of seats is 7, 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.68 B “Victor”

B.I. GENERAL

- | | |
|------------------------------------|--|
| 1. Data Sheet EASA No.: EASA.A.385 | Date: 16 October 2009 |
| 2. Type: | P.68 |
| 3. Variant: | P.68 B “Victor” |
| 4. Airworthiness Category: | Normal Category Aeroplanes |
| 5. Type Certificate Holder: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 6. Manufacturer: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 7. ENAC Certification Date: | 24 May 1974 (RAI TC n° A 151; ENAC TC n° A 365) |
| 8. ENAC Application Date: | 18 October 1973 |
| 9. ENAC Recommendation Date: | Not Applicable |
| 10. EASA Type Certification Date: | Not Applicable |

B.II. CERTIFICATION BASIS

- | | |
|---|--|
| 1. Reference Date for determining the applicable requirements: | 18 October 1973 |
| 2. ENAC Certification Date: | 24 May 1974 |
| 3. ENAC Type Certificate Data Sheet No : | SO/ A 365 Rev. 1 Dated 12 December 2000 |
| 4. Airworthiness Requirements:
4.1. FAR 23 dated 1 st February 1965 | Amdt 1 through 6 |
| 5. Requirements elected to comply: | None |
| 6. Special Conditions: | None |
| 7. Exemptions: | None |
| 8. Equivalent Safety Findings: | None |
| 9. Environmental Standards: | Noise: ICAO Annex 16, Volume I, Chapter 10
Fuel venting & engine emission: Not Applicable |

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 NOR 10.707-21 (up to s/n 152) or doc. p/n NOR 10.707-9 (from s/n 153 onward) (see Note B/1)

5. 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. Engines: 2 Lycoming IO-360-A1B
or alternatively 2 Lycoming IO-360-A1B6
FAA Type Certificate No. 1E10

- 5.1 Engine Limits: 200 HP at 2700 rpm (see Note B/2)
Other engine's limitations are listed in the doc. "Aircraft Flight Manual", Operating Limitations Section

6. Propellers: 2 Hartzell model HC-C2YK-2C()F/FC7666A-4
Full Feathering, 2-Blades aluminium propeller
FAA Type Certificate No. P-920

- Governors: 2 Hartzell Hydraulic Governor Model F6-3A
or alternatively
2 Woodward Governors Model () 210655
or alternatively
2 Woodward Governors Model () 210844

- Spinners: 2 Hartzell Model 836-29

- 6.1 Propeller Limits: Diameter 1,829 m (72 in) No reduction permitted
Pitch setting at 0,762 m (30 in) station:
Max 81,2° ± 0,3°; Min 14,2° ± 0,2°

7. Fluids:
 - 7.1 Fuel: Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070.
 - 7.2 Lubricant: Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014.

8. Fluid capacities (see Note B/3):
- | | |
|---|--|
| 8.1 Fuel:
(see Note B/4 or Note B/5) | Total: 410 L (108 U.S. gal)
[205 L (54 U.S. gal) per wing tank]
at + 0,770 m (+30,3 in)
Unusable: 9 L (2,5 U.S. gal) per tank |
| 8.2 Lubricant: | Total: 15 L (16 qt)
7,5 L (8 qt) per engine
at + 0,100 m (+4 in)
Unusable: 1,8 L (1,9 qt) |
9. Air Speeds (see Note B/6):
- | | | |
|--|-----|------|
| 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 |
10. Maximum Operating Altitude: Not applicable
11. Operational capability: VFR/IFR, Day/Night, depending on installed equipment
Flight in icing conditions is prohibited.
12. Maximum Masses (see Note B/6):
- | | |
|-----------|--------------------|
| Take Off: | 1960 Kg (4321 lbs) |
| Landing: | 1860 Kg (4100 lbs) |
13. 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 lbs);
+0,259 m (+10,2 in) aft of datum (16,8% MAC) at 1600 Kg (3527 lbs) or less with linear variation for intermediate weights |
14. Datum: Tangent to the wing leading edge
15. Levelling References:
- | | |
|---------------|--|
| Lateral: | Across seat tracks |
| Longitudinal: | Two screws on the fuselage left side, between frames n°8 and n°9 |

- | | | |
|---|---|-----------------------------------|
| 16. Minimum Flight Crew: | 1 (Pilot) | |
| 17. 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) | |
| 18. Baggage / Cargo Compartments:
Max Allowable Load:
Location: | 181 Kg (400 lbs)
at +1,542 m (60,7 in) | |
| 19. Wheels and Tires: | see Aircraft Flight Manual (§ B.IV) | |
| 20. Control Surface Movements: | | |
| Wing Flaps: | | Down: 35°±2° |
| Ailerons: | Up: 30°±2° | Down: 17°±2° |
| Stabilizer (leading edge): | Up: 6°±2° | Down: 16°±2° |
| Stabilizer tab (trailing edge with respect to stabilator chord): | | Down: 1°±1° (min)
15°±1° (max) |
| Rudder: | Right: 25°±2° | Left: 25°±2° |
| Rudder tab: | Right: 30°±2° | Left: 30°±2° |

B.IV. OPERATING AND SERVICE INSTRUCTIONS

- | | |
|--|--|
| Airplane Flight Manual:
(see Note B/8) | <p>For aircraft up to s/n 152: doc. p/n NOR 10.707-21
Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.</p> <p>For aircraft from s/n 153 onwards: doc. p/n NOR 10.707-9,
Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.</p> |
| Airplane Maintenance Manual: | doc. p/n NOR 10.709-9 and all applicable Supplements
Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision and applicable supplements. |
| Service Bulletins, Letters & Instructions: | Ref. to doc. p/n NOR 10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions" |

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, following equipments 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 weights' increase [MTOW up to 1990 Kg (4387 lbs) and MLW up to 1890 Kg (4167 lbs), ENAC Approval n. 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 lbs) at +0,770 m (30,3 in) for the main wing tanks and 5,7 Kg (12,57 lbs) at +0,770 m (30,3 in) for the auxiliary wing tank (see Note B/4)
Undrainable Lubricant:	0,454 Kg (1 lbs) 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 580L (153 U.S. gal) distributed as follows:

- 2 Main Wing Tanks: 205 L (54 U.S. gal) at + 0,770 m (30,3 in) per tank
Unusable: 9 L (2,5 U.S. gal) per tank
- 2 Auxiliary Wing Tanks: 85 L (22,5 U.S. gal) at 0,770 m (30,3 in) per tank
Unusable: 4 L (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 L (142 U.S. gal) distributed as follows:

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

NOTE B/6: P.68B aircraft, embodying Service Bulletin n°160, are approved for:

MTOW - Maximum Take Off Weight of 1990 Kg (4387 lbs),

MLW - Maximum Landing Weight of 1890 Kg (4167 lbs),

with the following limitations (ref: RAI Approval n.156.014/T dated 23 April 1979, of the AFM appendix p/n NOR10.708-1 "Appendix to the Aircraft Flight Manual"):

- 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 lbs);

+0,259 m (+10,2 in) aft of datum (16,8% MAC)

at 1600 Kg (3527 lbs) or less

with linear variation for intermediate weights

NOTE B/7: Aircraft embodying the Partenavia Service Bulletin n°29.

The number of seats is 7, as follows:

2 at -0,950 m (-37,4 in),

2 at -0,146m (-5.7 in),

3 passengers on the bench seat, at +0,867m (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.68 R “Victor”

Derived by P.68B “Victor” variant, featuring a retractable landing gear.

C.I. GENERAL

- | | |
|------------------------------------|--|
| 1. Data Sheet EASA No.: EASA.A.385 | Date: 16 October 2009 |
| 2. Type: | P.68 |
| 3. Variant: | P.68 R “Victor” |
| 4. Airworthiness Category: | Normal Category Aeroplanes |
| 5. Type Certificate Holder: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 6. Manufacturer: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 7. ENAC Certification Date: | 31 July 1978 (RAI TC n°A151; ENAC TC n°A365) |
| 8. ENAC Application Date: | 15 February 1973 |
| 9. ENAC Recommendation Date: | Not Applicable |
| 10. EASA Type Certification Date: | Not Applicable |

C.II. CERTIFICATION BASIS

- | | |
|--|--|
| 1. Reference Date for determining the applicable requirements: | 15 February 1973 |
| 2. ENAC Certification Date: | 31 July 1978 |
| 3. ENAC Type Certificate Data Sheet No : | SO/ A 365 Rev. 1 Dated 12 December 2000 |
| 4. Airworthiness Requirements:
4.1. FAR 23 dated 1 st February 1965 | Amdt 1 through 6,
Amdt 7: § 23.561
Amdt 14: § 23.507 |
| 5. Requirements elected to comply:
5.1.FAR 23 dated 1 st February 1965 | Amdt 7: §§ 23.725, 23.727, 23.729, 23.735, 23.1435
Amdt 14: §§ 23.507, 23.867 |
| 6. Special Conditions: | None |
| 7. Exemptions: | None |
| 8. Equivalent Safety Findings: | None |
| 9. Environmental Standards: | Noise: ICAO Annex 16, Volume I, Chapter 10

Fuel venting & engine emission: Not Applicable |

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:
P.68R s/n 040: Airplane Flight Manual, R.A.I. approved n°149624/T dated 27/7/1978, section 6.
P.68R s/n 430, onwards: doc. p/n NOR10.719-4.

4. Dimensions: Length: 9,55 m (31,33 ft); [Only s/n 040: 9.35 m]
Height: 3,40 m (11,15 ft)
Width (Wing Span): 12,00 m (39,37 ft)

5. Engines: 2 Lycoming IO-360-A1B
or alternatively 2 Lycoming IO-360-A1B6
FAA Type Certificate No. 1E10
 - 5.1 Engine Limits: 200 HP at 2700 rpm (*see Note C/3*)
Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitations Section

6. Propellers: 2 Hartzell model HC-C2YK-2C()F/FC7666A-4
Full Feathering, 2-Blades aluminum propeller
FAA Type Certificate No. P-920
 - Governors
(*see Note C/10*) 2 Hartzell Hydraulic Governors Model F6-3A
or alternatively
2 Woodward Governors Model () 210655
or alternatively
2 Woodward Governors Model () 210844
or alternatively
 - Spinners: 2 Hartzell Model 836-29
 - 6.1 Propeller Limits: Diameter 1,829 m (72 in) No reduction permitted
Pitch setting at 0,762 m (30 in) station:
Max 81,2° ± 0,3°; Min 14,2° ± 0,2°

7. Fluids:
 - 7.1 Fuel: Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070.
 - 7.2 Lubricant: Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014.

8. Fluid capacities (see Note C/4):
- | | | |
|---|-----------|--|
| 8.1 Fuel:
(see Note C/5 or Note C/6a & C/6b) | Total: | 410 L (108 U.S. gal)
[205 L (54 U.S. gal) per wing tank
at +0,770 m (30,3 in)] |
| | Unusable: | 9 L (2,5 U.S. gal) per tank |
| 8.2 Lubricant: | Total: | 15 L (16 qt)
7,5 L (8 qt) per engine
at +0,100 m (4 in) |
| | Unusable: | 1,8 L (1,9 qt) |
9. 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 |
| Maximum Landing Gear Extended Speed V_{LE} : | 112 | KCAS (see Note C/13) |
| Maximum Landing Gear Operating Speed V_{LO} : | 112 | KCAS (see Note C/13) |
10. Maximum Operating Altitude: Not applicable
11. Operational capability: VFR/IFR, Day/Night, depending on installed equipment
Flight in icing conditions is prohibited.
12. Maximum Masses:
- | | |
|-----------|--------------------|
| Take Off: | 1960 Kg (4321 lbs) |
| Landing: | 1960 Kg (4321 lbs) |
13. Centre of Gravity Range (see Note C/7):
- | | |
|------------------|--|
| 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 lbs)
+0,259 m (+10,2 in) aft of datum (16,8% MAC)
at 1600 Kg (3527 lbs) or less
with linear variation for intermediate weights |
14. Datum: Tangent to the wing leading edge
15. Levelling References:
- | | |
|---------------|--|
| Lateral: | Across seat tracks |
| Longitudinal: | Two screws on the fuselage left side, between frames n°8 and n°9 |

16. Minimum Flight Crew:	1 (Pilot)	
17. 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)	
18. Baggage / Cargo Compartments: Max Allowable Load: Location:	181 Kg (400 lbs) at +1,542 m (60,7 in)	
19. Wheels and Tires:	see Aircraft Flight Manual (§ C.IV)	
20. Control Surface Movements:		
Wing Flaps:		Down: 35°±2°
Ailerons:	Up: 30°±2°	Down: 17°±2°
Stabilizer (leading edge):	Up: 6°±2°	Down: 16°±2°
Stabilizer tab (trailing edge with respect to stabilator chord):		Down: 1°±1° (min) 15°±1° (max)
Rudder:	Right: 25°±2°	Left: 25°±2°
Rudder tab:	Right: 30°±2°	Left: 30°±2°

C.IV. OPERATING AND SERVICE INSTRUCTIONS

Airplane Flight Manual (see Note C/9):	P.68R s/n 040: doc. NOR10.707-30 "Airplane Flight Manual", (R.A.I. approval n°149624/T dated 27/7/1978) Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.
	P.68R s/n 430, onwards: doc. p/n NOR10.707-30B. Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.
Airplane Maintenance Manual:	AMM doc. p/n NOR 10.709-9 and AMM Supplement doc. p/n NOR 10.771-31. Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision and applicable supplements.
Service Bulletins, Letters & Instructions:	Ref. to doc. p/n NOR 10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"

C.V. NOTES

NOTE C/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Changes No. **MOD P68/083** "Crew door installation on P.68R variant" and **MOD P68/084** "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 49: § 23.807
FAR 23 Amdt 14: § 23.1309

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 "P68R 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 Amdt7: § 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 21/3/2008 "HIRF protection")

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 8 dated 25/3/2008 "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:

§§ 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, 23.1359, 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 P68R Model", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

FAR 23 Amdt 7

§§ 23.471, 23.473, 23.477, 23.479, 23.483, 23.485, 23.493;

JAR 23 (issue 11/03/1994)

§§ 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.

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** "P68R, V_{LE}/V_{LO} increase", in addition to P.68R Certification Basis, the following amendments of airworthiness requirements are applicable:

FAR 23 Amdt 17:

§ 23.1309.

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.

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, following equipments 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 lbs) at +0,770 m (30,3 in) for the main wing tanks and 5,7 Kg (12,57 lbs) at +0,770 m (30,3 in) for the auxiliary wing tank (see Note C/5)
Undrainable Lubricant:	0,454 Kg (1 lbs) at 0,100 m (4 in)

NOTE C/5: For P.68R aircraft equipped with two auxiliary integral fuel tanks with transfer pumps, the total fuel capacity is 580L (153 U.S. gal) distributed as follows:

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

NOTE C/6a: For P.68R aircraft equipped with Partenavia Kit P/N 68-015, the total fuel capacity is 538L (142 U.S. gal) distributed as follows:

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

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

- **STANDARD RANGE**

Total fuel capacity:	538 L (142 U.S. gal) at +0,770 m (30.3 in)
Total unusable fuel:	18 L (4.7 U.S. gal)
- **LONG RANGE**

Total fuel capacity:	696 L (184 U.S. gal) at +0,770 m (30.3 in)
Total unusable fuel:	26 L (6.9 U.S. gal)

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

NOTE C/8: P.68R aircraft embodying the Partenavia Service Bulletin n°29.

The number of seats is 7, as follows: 2 at -0,950 m (-37,4 in);
2 at -0,146 m (-5,7 in);
3 passengers on the bench seat, at +0,867 m (+34,2 in).

NOTE C/9: The following placard shall be installed in full view of pilot:

“THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS”

Moreover all placards required in the Aircraft Flight Manual shall be installed in the proper location.

NOTE C/10: P.68R aircraft from s/n430 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 C/11: P.68R aircraft from s/n430 onwards, may be equipped since new with a SAGEM Avionics Integrated Display System approved for IFR operations, in place 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/n430 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/n430 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.

SECTION D: P.68 C

P.68C is 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; and
- 4) Weight & C.G. range increase.

D.I. GENERAL

- | | |
|------------------------------------|--|
| 1. Data Sheet EASA No.: EASA.A.385 | Date: 16 October 2009 |
| 2. Type: | P.68 |
| 3. Variant: | P.68 C |
| 4. Airworthiness Category: | Normal Category Aeroplanes |
| 5. Type Certificate Holder: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 6. Manufacturer: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 7. ENAC Certification Date: | 23 July 1979 (RAI TC n°A151; ENAC TC n°A365) |
| 8. ENAC Application Date: | 2 January 1979 |
| 9. ENAC Recommendation Date: | Not Applicable |
| 10. EASA Type Certification Date: | Not Applicable |

D.II. CERTIFICATION BASIS

- | | |
|--|--|
| 1. Reference Date for determining the applicable requirements: | 2 January 1979 |
| 2. ENAC Certification Date: | 23 July 1979 |
| 3. ENAC Type Certificate Data Sheet No : | SO/ A 365 Rev. 1 Dated 12 December 2000 |
| 4. Airworthiness Requirements:
4.1.FAR 23 dated 1 st February 1965 | Amdt 1 through 6 (<i>see Note D/1</i>) |
| 5. Requirements elected to comply: | None |
| 6. Special Conditions: | None |
| 7. Exemptions: | None |
| 8. Equivalent Safety Findings: | None |
| 9. Environmental Standards: | Noise: ICAO Annex 16, Volume I, Chapter 10

Fuel venting & engine emission: Not Applicable |

D.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1. Type Design Definition: doc. SPEC VA/137/PRD "Type Design Configuration Data P.68 C"

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 NOR 10.719-1 (see Note D/2)

4. Dimensions: Length: 9,55 m (31,60 ft)
Height: 3,40 m (11,15 ft)
Width (Wing Span): 12,00 m (39,37 ft)

5. Engines: 2 Lycoming IO-360-A1B6
FAA Type Certificate No. 1E10
 - 5.1 Engine Limits: 200 HP at 2700 rpm
Other engine's limitations are listed in the doc. "Aircraft Flight Manual", Operating Limitations Section

6. Propellers: 2 Hartzell model HC-C2YK-2C()/FC7666A-4
Full Feathering, 2-Blades aluminium propeller
FAA Type Certificate No. P-920
 - Governors:
(see Note D/10) 2 Woodward Governors Model () 210655
or alternatively
2 Woodward Governors Model () 210844
or alternatively
 - Spinners: 2 Hartzell Model 836-29
 - 6.1 Propeller Limits: Diameter 1,829 m (72 in) No reduction permitted
Pitch setting at 0,762 m (30 in) station:
Max 81,2° ± 0,3°; Min 14,2° ± 0,2°

7. Fluids:
 - 7.1 Fuel: Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070.
 - 7.2 Lubricant: Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014.

8. Fluid capacities: *(see Notes D/3 and D/4)*
- 8.1 Fuel:
(see Note D/5)
- Up to s/n 209**
Total: 410 L (108 U.S. gal)
[205 L (54 U.S. gal) per wing tank]
at +0,770 m (+30,3 in)
Unusable: 9 L (2,5 U.S. gal) per tank
- From s/n 210 onwards**
(see Note D/6)
Total: 538 L (142 U.S. gal)
[269 L (71 U.S. gal) per wing tank]
at +0,770 m (+30,3 in)
Unusable: 9 L (2,5 U.S. gal) per tank
- 8.2 Lubricant:
- Total: 15 L (16 qt)
7,5 L (8 qt) per engine
at +0,100 m (+4 in)
Unusable: 1,8 L (1,9 qt)
9. Air Speeds: *(see Note D/7)*
- | | | |
|--|-----|------|
| 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 |
10. Maximum Operating Altitude: Not applicable
11. Operational capability: VFR/IFR, Day/Night, depending on installed equipment
Flight in icing conditions is prohibited.
12. Maximum Masses:
(see Notes D/7, D/13)
- | | |
|-----------|---|
| Take Off: | 1990 Kg (4387 lbs) |
| Landing: | 1890 Kg (4167 lbs) up to s/n 380
1980 Kg (4365 lbs) from s/n 381 onwards |
13. 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 lbs)
+0,230 m (+9,06 in) aft of datum (14,84% MAC) at 1680 Kg (3704 lbs) or less
with linear variation for intermediate weights |
14. Datum: Tangent to the wing leading edge

- | | | |
|--|---------------|--|
| 15. Levelling References: | | |
| Lateral: | | Across seat tracks |
| Longitudinal: | | Two screws on the fuselage left side, between frames n°8 and n°9 |
| 16. Minimum Flight Crew: | | 1 (Pilot) |
| 17. 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). |
| 18. Baggage / Cargo Compartments: | | |
| Max Allowable Load: | | 181 Kg (400 lbs) |
| Location: | | at +1,542 m (60,7 in) |
| 19. Wheels and Tires: | | See Equipment List doc. p/n NOR 10.719-1 |
| 20. Control Surface Movements: | | |
| Wing Flaps: | | Down: 35°±2° |
| Ailerons: | Up: 30°±2° | Down: 17°±2° |
| Stabilizer (leading edge): | Up: 6°±2° | Down: 16°±2° |
| Stabilizer tab (trailing edge with respect to stabilator chord): | | Down: 1°±1° (min)
15°±1° (max) |
| Rudder: | Right: 25°±2° | Left: 25°±2° |
| Rudder tab: | Right: 30°±2° | Left: 30°±2° |

D.IV. OPERATING AND SERVICE INSTRUCTIONS

- | | |
|--|--|
| Airplane Flight Manual:
(see Note D/8) | Up to s/n 402: doc. p/n NOR 10.707-1.
Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision. |
| | From s/n 412 onwards: doc. p/n NOR 10.707-1B
Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision. |
| 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 and applicable supplements. |
| Service Bulletins, Letters & Instructions: | Ref. to doc. p/n NOR 10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions" |

D.V. NOTES

NOTE D/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Change No. **MOD P68/014** "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 P68/017** "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 P68/018** "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 P68/031** "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 P68/052** "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

§§ 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 P68/086** "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, 23.1359, 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 P68/097** "P.68C & P.68C-TC Maximum Zero Fuel Weight Increase", in addition to P.68C Certification Basis, the following amendments of airworthiness requirements are applicable:

FAR 23 Amdt 7: § 23.572.

JAR 23 effective 11 March 1994: §§ 23.1501, 23.1529, 23.1581, 23.1583, 23.1589

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 21/3/2008 "HIRF protection")

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 8 dated 25/3/2008 "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:

§§ 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

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, following equipments 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 lbs) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 Kg (12,57 lbs) at +0,770 m (+30,3 in) for the auxiliary wing tank (see Notes D/4, D/5a)
Undrainable Lubricant:	0,454 Kg (1 lbs) at 0,100 m (+4 in)

From s/n 412 onwards

Unusable Fuel (see Note D/5b):	12,9 Kg (28,44 lbs) at +0,770m (+30,3in) for Standard Range Configuration 18,7 Kg (41.23 lbs) at +0,770m (+30,3in) for Long Range Configuration
Undrainable Lubricant:	0,454 Kg (1 lbs) at 0,100 m (4 in)

NOTE D/4: For P.68C s/n209 aircraft equipped with auxiliary integral fuel tanks, the total fuel capacity is 580L (153 U.S. gal) distributed as follows:

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

NOTE D/5:

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 total wing fuel capacity is 696 L (184 U.S. gal) distributed as follows:

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

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

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

- **STANDARD RANGE**
Total fuel capacity: 538 L (142 U.S. gal) at +0,770 m (30.3 in)
Total unusable fuel: 18 L (4.7 U.S. gal)
- **LONG RANGE**
Total fuel capacity: 696 L (184 U.S. gal) at +0,770 m (30.3 in)
Total unusable fuel: 26 L (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 L (195 U.S. gal) distributed as follows:
2 Main Wing Tanks: 269 L (71 U.S. gal) at + 0,770 m (+30,3 in) per tank
Unusable: 9 L (2,5 U.S. gal) per tank
2 Under-Wing Tanks: 100 L (26 U.S. gal) at +0,440 m (+17,3 in) per tank
Unusable: 0 L per tank.

NOTE D/7: P.68C aircraft equipped with the Kit P/N 68/051 (as for Partenavia Service Bulletin No.79), is approved for a Maximum Take Off Weight and a Maximum Landing Weight respectively of 2084 Kg (4594 lbs) and 1980 Kg (4365 lbs), with 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 lbs)
Take Off: 2084 Kg (4594 lbs)
Landing: 1980 Kg (4365 lbs)
Zero Fuel (see Note D/14): 1890 Kg (4167 lbs)
- 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 lbs);
+0,320 m (+12,60 in) aft of datum (20.6% MAC)
at 2084 Kg (4594 lbs) or less
+0,230 m (+9,06 in) aft of datum (14,84% MAC)
at 1680 Kg (3704 lbs) 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: 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 for Partenavia DWG 2.2503. In this case, the Aircraft Flight Manual must include the Supplement I (ENAC approval n. 199.649/T dated 17 April 1984).

NOTE D/10: P.68C aircraft from s/n443 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/n412 onwards may be equipped since new with a "Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System" electronic powerplant instrumentation system, in place of the standard powerplant instrumentation (as per Type Design Changes No. MOD P68/018).

NOTE D/12: P.68C aircraft from s/n443 onwards, may be equipped since new with a SAGEM Avionics Integrated Display System approved for IFR operations, in place 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/n443 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/n443 onwards is approved for a Maximum Zero Fuel Weight (MZFW) of 1967kg (as per Type Design Change No. MOD P68/097)

SECTION E: P.68 C-TC

P.68C-TC is the same of P.68C Variant except for turbocharged engines

E.I. GENERAL

- | | |
|------------------------------------|--|
| 1. Data Sheet EASA No.: EASA.A.385 | Date: 16 October 2009 |
| 2. Type: | P.68 |
| 3. Variant: | P.68C-TC |
| 4. Airworthiness Category: | Normal Category Aeroplanes |
| 5. Type Certificate Holder: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 6. Manufacturer: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 7. ENAC Certification Date: | 29 April 1980 (RAI TC n°A151; ENAC TC n°A365) |
| 8. ENAC Application Date: | 2 January 1979 |
| 9. ENAC Recommendation Date: | Not Applicable |
| 10. EASA Type Certification Date: | Not Applicable |

E.II. CERTIFICATION BASIS

- | | |
|--|---|
| 1. Reference Date for determining the applicable requirements: | 2 January 1979 |
| 2. ENAC Certification Date: | 29 April 1980 |
| 3. ENAC Type Certificate Data Sheet No : | SO/ A 365 Rev. 1 Dated 12 December 2000 |
| 4. Airworthiness Requirements:
4.1.FAR 23 dated 1 st February 1965
(see Note E/1) | including Amdt 1 through 6 for Section A, B, C, D, plus
Amdt 1 through 18 for Section E, F and G, plus
Amdt 7 for § 23.909, 23.1043, 23.1047, 23.1143,
23.1305, 23.1527, 23.1583 |
| 5. Requirements elected to comply: | None |
| 6. Special Conditions: | None |
| 7. Exemptions: | None |
| 8. Equivalent Safety Findings: | None |
| 9. Environmental Standards: | Noise: ICAO Annex 16, Volume I, Chapter 10 |

Fuel venting & engine emission: Not Applicable

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 (turbo charged, piston), high wing monoplane with fixed landing gear
3. Equipment: Refer to Equipment List of "Aircraft Flight Manual" doc. p/n NOR 10.707-20 (for aircraft powered by TO-360-C1A6D engine) and p/n NOR 10.707-2 (for aircraft powered by TIO-360-C1A6D engine)
(see Note E/2)
8. Dimensions:
Length: 9,55 m (37,60 ft)
Height: 3,40 m (11,15 ft)
Width (Wing Span): 12,00 m (39,37 ft)
5. Engines: 2 Lycoming TO-360-C1A6D (FAA Type Certificate No. E26EA) or alternatively
2 Lycoming TIO-360-C1A6D (FAA Type Certificate No. E16EA)
- 5.1 Engine Limits:
(see Note E/3) 2575 rpm, 42" Hg (210 HP) for TO-360-C1A6D
2575 rpm, 44" Hg (210 HP) for TIO-360-C1A6D
Other engine's limitations are listed in the doc. "Aircraft Flight Manual", Operating Limitations Section
6. Propellers: 2 Hartzell model HC-C2YK-2C()F/FC7666A-0
Full Feathering, 2-Blades aluminium propeller
FAA Type Certificate No. P-920
- Governors:
(see Note E/11) 2 Woodward Governors Model () 210655
or alternatively
2 Woodward Governors Model () 210844
or alternatively
- Spinners: 2 Hartzell Model 836-29
- 6.1 Propeller Limits: Diameter Max. 1,930 m (76 in), Min. 1,905 (75 in)
Pitch setting at 0,762 m (30 in) station:
Max 81° ± 1°; Min 15,9° ± 0,1°

7. Fluids:
- 7.1 Fuel: Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070.
- 7.2 Lubricant: Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014.
8. Fluid capacities:
(see Notes E/4, E/5a or E/5b)
- 8.1 Fuel:
- | | |
|-----------|-------------------------------------|
| Total: | 538 L (142 U.S. gal) |
| | [269 L (71 U.S. gal) per wing tank] |
| | at +0,770 m (30,3 in) |
| Unusable: | 9 L (2,5 U.S. gal) per tank |
| | (see Notes E/6 and E/7) |
- 8.2 Lubricant:
- | | |
|-----------|-------------------------|
| Total: | 15 L (16 qt) |
| | 7,5 L (8 qt) per engine |
| | at +0,100 m (4 in) |
| Unusable: | 1,8 L (1,9 qt) |
9. Air Speeds:
(see Note E/10)
- | | | |
|--|-----|------|
| 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} : | 63 | KCAS |
10. Maximum Operating Altitude: 20000 ft (6096 m)
11. Operational capability: VFR/IFR, Day/Night, depending on installed equipment
Flight in icing conditions is prohibited.
12. Maximum Masses:
(see Notes E/10, E/14)
- | | |
|-----------|---|
| Take Off: | 1990 Kg (4387 lbs) |
| Landing: | 1890 Kg (4167 lbs) up to s/n 380 |
| | 1980 Kg (4365 lbs) from s/n 381 onwards |
13. 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 lbs); |
| | +0,230 m (+9,06 in) aft of datum (14,84% MAC) at 1680 Kg (3704 lbs) or less |
| | with linear variation for intermediate weights |
14. Datum: Tangent to the wing leading edge
15. Levelling References:
- | | |
|---------------|--|
| Lateral: | Across seat tracks |
| Longitudinal: | Two screws on the fuselage left side, between frames n°8 and n°9 |

- | | | |
|--|---|-----------------------------------|
| 16. Minimum Flight Crew: | 1 (Pilot) | |
| 17. 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)]. | |
| 18. Baggage / Cargo Compartments: | | |
| Max Allowable Load: | 181 Kg (400 lbs) | |
| Location: | at +1,542 m (60,7 in) | |
| 19. Wheels and Tires: | see Aircraft Flight Manual (§ E.IV) | |
| 20. Control Surface Movements: | | |
| Wing Flaps: | | Down: 35°±2° |
| Ailerons: | Up: 30°±2° | Down: 17°±2° |
| Stabilizer (leading edge): | Up: 6°±2° | Down: 16°±2° |
| Stabilizer tab (trailing edge with respect to stabilator chord): | | Down: 1°±1° (min)
15°±1° (max) |
| Rudder: | Right: 25°±2° | Left: 25°±2° |
| Rudder tab: | Right: 30°±2° | Left: 30°±2° |

E.IV. OPERATING AND SERVICE INSTRUCTIONS

Airplane Flight Manual:
 (see Note E/8)

for aircraft powered by TO-360-C1A6D engine:
 doc. p/n NOR 10.707-20.
 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.

for aircraft powered by TIO-360-C1A6D engine:
 doc. p/n NOR 10.707-2.
 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.

Airplane Maintenance Manual:

doc. p/n NOR 10.709-1B plus doc. p/n NOR 10.709-2 and all applicable Supplements.
 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision and applicable supplements.

Service Bulletins, Letters & Instructions:

Ref. to doc. p/n NOR 10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"

E.V. NOTES

NOTE E/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Change No. **MOD P68/014** "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 P68/017** "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 P68/018** "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 P68/031** "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 P68/073** "P.68C-TC MTOW Increase up to 2084 Kg", in addition to P.68C-TC Certification Basis, the following amendments of airworthiness requirements are applicable:

FAR 23 Amdt 7: §§ 23.909, 23.1043, 23.1047, 23.1143, 23.1147, 23.1305, 23.1527, 23.1583

FAR 23 Amdt 14: §§ 23.507, 23.509

FAR 23 Amdt 17: § 23.1322.

FAR 23 Amdt 20: § 23.1401

FAR 23 Amdt 31: § 23.629

FAR 23 Amdt 36: §§ 23.2, 23.561

FAR 36 Amdt 16: Appendix G §§ G36.1, G36.101, G36.103, G36.105, G36.107, G36.109, G36.111, G36.201, G36.203, G36.301.

ICAO Annex 16, Volume I, Chapter 10.

For Type Design Change No. **MOD P68/086** "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, 23.1359, 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 P68/097** "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:

FAR 23 Amdt 7: § 23.572.

JAR 23 effective 11 March 1994: §§ 23.1501, 23.1529, 23.1581, 23.1583, 23.1589

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 21/3/2008 "HIRF protection")

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 8 dated 25/3/2008 "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:

§§ 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

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, following equipments 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 lbs) at +0,770 m (30,3 in) for the main wing tanks and 5,7 Kg (12,57 lbs) at +0,770 m (30,3 in) for the auxiliary wing tank (see Note 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 580L (153 U.S. gal) distributed as follows (see also Note E/6):

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

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

- **STANDARD RANGE**
 - Total fuel capacity: 538 L (142 U.S. gal) at +0,770 m (30.3 in)
 - Total unusable fuel: 18 L (4.7 U.S. gal)
- **LONG RANGE**
 - Total fuel capacity: 696 L (184 U.S. gal) at +0,770 m (30.3 in)
 - Total unusable fuel: 26 L (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 L (195 U.S. gal) distributed as follows:
 - 2 Main Wing Tanks:
 - 269 L (71 U.S. gal) at + 0,770 m (30,3 in) per tank
 - Unusable: 9 L (2,5 U.S. gal) per tank
 - 2 Under-Wing Tanks:
 - 100 L (26 U.S. gal) at +0,440 m (17,3 in) per tank
 - Unusable: 0 L 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: P.68C-TC aircraft from s/n 330 onwards can be equipped, since new, with a crew door on the fuselage right side as for Partenavia DWG 2.2503. In this case the Aircraft Manual must include the Supplement I (ENAC approval n. 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 lbs) and 1890 Kg (4167 lbs), with 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 lbs)
Take Off:	2084 Kg (4594 lbs)
Landing:	1980 Kg (4365 lbs)
Zero Fuel (see Note E/15):	1890 Kg (4167 lbs)

- Centre of Gravity Range:

Rearward Limits:	+0,481 m (+18,94 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 lbs) +0,320 m (+12.60 in) aft of datum (20.6% MAC) at 2084 Kg (4594 lbs) or less +0,230 m (+9.06 in) aft of datum (14.84% MAC) at 1680 Kg (3704 lbs) 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: P.68C-TC aircraft (from and excluding s/n392) 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/n392) may be equipped since new with a "Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System" electronic powerplant instrumentation system, in place of the standard powerplant instrumentation (as per Type Design Changes No. MOD P68/018).

NOTE E/13: P.68C-TC aircraft (from and excluding s/n392) may be equipped since new with a SAGEM Avionics Integrated Display System approved for IFR operations, in place 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/n392) 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/n392) is approved for a Maximum Zero Fuel Weight (MZFW) of 1967kg (as per Type Design Change No. MOD P68/097)

SECTION F: P.68 "Observer"

P.68 "Observer" is derived by P.68B variant mainly 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 EASA No.: | EASA.A.385 | Date: | 16 October 2009 |
| 2. Type: | | P.68 | |
| 3. Variant: | | P.68"Observer" | |
| 4. Airworthiness Category: | | Normal Category Aeroplanes | |
| 5. Type Certificate Holder: | | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY | |
| 6. Manufacturer: | | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY | |
| 7. ENAC Certification Date: | | 12 June 1980 (RAI TC n°A151; ENAC TC n°A365) | |
| 8. ENAC Application Date: | | 4 December 1978 | |
| 9. ENAC Recommendation Date: | | Not Applicable | |
| 10. EASA Type Certification Date: | | Not Applicable | |

F.II. CERTIFICATION BASIS

- | | | | |
|--|--|---|--|
| 1. Reference Date for determining the applicable requirements: | | 4 December 1978 | |
| 2. ENAC Certification Date: | | 12 June 1980 | |
| 3. ENAC Type Certificate Data Sheet No : | | SO/ A 365 Rev. 1 Dated 12 December 2000 | |
| 4. Airworthiness Requirements: | | | |
| 1.1. FAR 23 dated 1 st February 1965 | | including Amdt 1 through 6 | |
| 5. Requirements elected to comply: | | None | |
| 6. Special Conditions: | | None | |
| 7. Exemptions: | | None | |
| 8. Equivalent Safety Findings: | | None | |

9. Environmental Standards: Noise: ICAO Annex 16, Volume 1, Chapter 10
- Fuel venting & engine emission: Not Applicable

F.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1. Type Design Definition: doc. SPEC VA/150/PRD "Type Design Configuration Data P.68 Observer"
2. Description: Twin engine (piston), high wing monoplane with fixed tricycle landing gear
3. Equipment:
(see Note F/1) Refer to Equipment List of "Aircraft Flight Manual"
doc. p/n NOR 10.707-3
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. Engines: 2 Lycoming IO-360-A1B6
FAA Type Certificate No. 1E10
- 5.1 Engine Limits: 200 HP at 2700 rpm
Other engine's limitations are listed in the doc. "Aircraft Flight Manual", Operating Limitations Section
6. Propellers: 2 Hartzell model HC-C2YK-2C()F/FC7666A-4
Full Feathering, 2-Blades aluminium propeller
FAA Type Certificate No. P-920
- Governors: 2 Woodward Governors Model () 210655
or alternatively
2 Woodward Governors Model () 210844
- Spinners: 2 Hartzell Model 836-29
- 6.1 Propeller Limits: Diameter 1,829 m (72 in) No reduction permitted
Pitch setting at 0,762 m (30 in) station:
Max 81,2° ± 0,3°; Min 14,2° ± 0,2°
7. Fluids:
7.1 Fuel: Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070.
- 7.2 Lubricant: Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014.

8. Fluid capacities:
(see Notes F/2)
- 8.1 Fuel:
(see Notes F/3 and F/4)
- | | |
|--|--|
| | Total: 538 L (142 U.S. gal)
[269 L (71 U.S. gal) per wing tank]
at +0,770 m (+30,3 in) |
| | Unusable: 9 L (2,5 U.S. gal) per tank |
- 8.2 Lubricant:
- | | |
|--|---|
| | Total: 15 L (16 qt)
7,5 L (8 qt) per engine
at +0,100 m (+4 in) |
| | Unusable: 1,8 L (1,9 qt) |
9. Air Speeds:
(see Note F/5)
- | | | |
|--|-----|------|
| 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 |
10. Maximum Operating Altitude: Not applicable
11. Operational capability: VFR/IFR, Day/Night, depending on installed equipment
Flight in icing conditions is prohibited.
12. Maximum Masses:
(see Note F/5)
- | | |
|-----------|--------------------|
| Take Off: | 1960 Kg (4321 lbs) |
| Landing: | 1860 Kg (4100 lbs) |
13. 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 lbs)
+0,259m (+10,2 in) aft of datum (16,8% MAC)
at 1600 Kg (3527 lbs) or less
with linear variation for intermediate weights |
14. Datum: Tangent to the wing leading edge
15. Levelling References:
- | | |
|---------------|--|
| Lateral: | Across seat tracks |
| Longitudinal: | Two screws on the fuselage left side, between frames n°8 and n°9 |
16. Minimum Flight Crew: 1 (Pilot)

17. 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).	
18. Baggage / Cargo Compartments: Max Allowable Load: Location:	181 Kg (400 lbs) at +1,542 m (+60,7 in)	
19. Wheels and Tires:	see Aircraft Flight Manual (§ F.IV)	
20. Control Surface Movements:		
Wing Flaps:		Down: 35°±2°
Ailerons:	Up: 30°±2°	Down: 17°±2°
Stabilizer (leading edge):	Up: 6°±2°	Down: 16°±2°
Stabilizer tab (trailing edge with respect to stabilator chord):		Down: 1°±1° (min) 15°±1° (max)
Rudder:	Right: 25°±2°	Left: 25°±2°
Rudder tab:	Right: 30°±2°	Left: 30°±2°

F.IV. OPERATING AND SERVICE INSTRUCTIONS

Airplane Flight Manual: (see Note F/6)	doc. p/n NOR 10.707-3. Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.
Airplane Maintenance Manual:	doc. p/n NOR 10.709-1B + Appendix p/n NOR 10.709-3 and all applicable Supplements. Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision and applicable supplements.
Service Bulletins, Letters & Instructions:	Ref. to doc. p/n NOR 10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"

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 lbs) at +0,770 m (30,3 in) for the main wing tanks and 5,7 Kg (12,57 lbs) at +0,770 m (30,3 in) for the auxiliary wing tank (see Note F/3)
Undrainable Lubricant:	0,454 Kg (1 lbs) 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 total wing fuel capacity is 696 L (184 U.S. gal) distributed as follows:

- 2 Main Wing Tanks:

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

For P.68 Observer aircraft embodying Service Bulletin No.78, the Airplane Flight manual must include 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 L (195 U.S. gal) distributed as follows:
2 Main Wing Tanks:
269 L (71 U.S. gal) at + 0,770 m (+30,3 in) per tank
Unusable: 9 L (2,5 U.S. gal) per tank
- 2 Under-Wing Tanks:
100 L (26 U.S. gal) at +0,440 m (+17,3 in) per tank
Unusable: 0 L 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 lbs) and 1980 Kg (4365 lbs), with 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 lbs)
Take Off: 2084 Kg (4594 lbs)
Landing: 1980 Kg (4365 lbs)
Zero Fuel: 1890 Kg (4167 lbs)
- 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 lbs)
+0,348 m (+13,71 in) aft of datum (22,45% MAC)
at 2084 Kg (4594 lbs) or less

0,260 m (10,25 in) aft of datum (16,80% MAC)
at 1600 Kg (3527 lbs) 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 EASA No.: | EASA.A.385 | Date: | 16 October 2009 |
| 2. Type: | | AP68TP | |
| 3. Variant: | | AP68TP-300 "Spartacus" | |
| 4. Airworthiness Category: | | Normal Category Aeroplanes | |
| 5. Type Certificate Holder: | | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY | |
| 6. Manufacturer: | | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY | |
| 7. ENAC Certification Date: | | 10 December 1983 (RAI TC n°A151; ENAC TC n°A365) | |
| 8. ENAC Application Date: | | 23 December 1982 | |
| 9. ENAC Recommendation Date: | | Not Applicable | |
| 10. EASA Type Certification Date: | | Not Applicable | |

G.II. CERTIFICATION BASIS

- | | | |
|--|--|---|
| 1. Reference Date for determining the applicable requirements: | | 23 December 1982 |
| 2. ENAC Certification Date: | | 10 December 1983 |
| 3. ENAC Type Certificate Data Sheet No : | | SO/ A 365 Rev. 1 Dated 12 December 2000 |
| 4. Airworthiness Requirements: | | |
| | | <u>FAR 23 dated 1st February 1965</u> (see Note G/1) |
| | | Including Amdt 1 through 6, except for the paragraphs listed below for which compliance with following Amendments has been shown: |
| <u>FAR 23 Amdt 7</u> | §§ 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. | |
| <u>FAR 23 Amdt 14</u> | §§ 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. | |
| <u>FAR 23 Amdt 15</u> | §§ 23.951, 23.1013, 23.1015, 23.1019, 23.1183. | |
| <u>FAR 23 Amdt 17</u> | §§ 23.141, 23.143, 23.145, 23.175, 23.977, 23.1111, 23.1143, 23.1165, 23.1303. | |
| <u>FAR 23 Amdt 18</u> | §§ 23.901, 23.939, 23.943, 23.959, 23.1093, 23.1121, 23.1141, 23.1145, 23.1203, 23.1337. | |
| <u>FAR 23 Amdt 20</u> | §§ 23.1301, 23.1323, 23.1547. | |
| <u>FAR 23 Amdt 21</u> | §§ 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. | |
| <u>FAR 23 Amdt 23</u> | §§ 23.1307, 23.1545, 23.1557, 23.1583, 23.1585. | |
| <u>FAR 23 Amdt 25</u> | § 23.853. | |
| <u>FAR 23 Amdt 26</u> | §§ 23.253, 23.361, 23.371, 23.903, 23.905, 23.991, 23.1305, 23.1529. | |
| <u>FAR 23 Amdt 27</u> | § 23.859 | |
| <u>FAR 23 Amdt 28</u> | § 23.1549 | |

- | | |
|------------------------------------|--|
| 5. Requirements elected to comply: | None |
| 6. Special Conditions: | None |
| 7. Exemptions: | None |
| 8. Equivalent Safety Findings: | None |
| 9. Environmental Standards: | Noise: ICAO Annex 16, Volume I, Chapter 6

Fuel venting & engine emission: Not available |

G.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

- | | |
|------------------------------|---|
| 1. Type Design Definition: | doc. SPEC VA/151/PRD "Type Design Configuration Data AP68TP300 Spartacus" |
| 2. Description: | Twin engine (turboprop), high wing monoplane with fixed tricycle landing gear |
| 3. Equipment (see Note G/2): | Refer to Equipment List of "Aircraft Flight Manual" doc. p/n NOR 10.707-5 |
| 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. Engines: | 2 Detroit Diesel Allison 250B17C Turboprop
FAA Type Certificate No. E10CE |
| 5.1 Engine Limits: | |
| Max Take OFF and MCP: | Power 328 SHP
Propeller rpm 2030
TOT 810°C
Other engine's limitations are listed in the doc. "Aircraft Flight Manual", Operating Limitations Section |
| 6. Propellers: | 2 Hartzell model HC-B3TF-7A/T10173F-21R,
or 2 Hartzell model HC-B3TF-7A/T10173FN-21R
Full Feathering and Reversing, 3-Blades propeller
FAA Type Certificate No. P15EA |
| Governors: | 2 Woodward Governors Model 8210-018 |
| Spinners: | 2 Hartzell Model 82A0835-39 |
| 6.1 Propeller Limits: | Diameter:
Max 2,032 m (80 in); Min 1,981 m (78 in)
No further reduction permitted
Pitch setting at 0,762 m (30 in) station:
Max 85° ±1°; Min 8° ± 0,5°; Max Neg. -11° ± 0,5° |

7. Fluids:
- 7.1 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)
Fuels containing Tri-Cresyl-Phosphate additives shall not be used
- 7.2 Lubricant: MIL-L-7808G or MIL-L-23699
8. Fluid capacities:
- 8.1 Fuel:
(see Note G/3)
- Total: 848 L (224 U.S. gal)
[383 L (101 U.S. gal) per wing tank at +0,770 m (+30,3 in), and 42 L (11 U.S. gal) per nacelle tank at +0,87 m (+34,25 in)]
- Unusable: 4 L (1 U.S. gal) per wing
- 8.2 Lubricant:
- Total: 11,4 L (12 qt)
5,7 L (6 qt) per engine at -0,400 m (-15,75 in)
9. Air Speeds:
- Maximum operating speed V_{MO} : 197 KCAS up to 4572 m (15000 ft)
160 KCAS at 7620 m (25.000 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
10. Maximum Operating Altitude: 7620 m (25000 ft)
- Operational capability: VFR/IFR, Day/Night, depending on installed equipment
Flight in icing conditions is prohibited.
11. Maximum Masses:
- Taxi and Ramp: 2625 Kg (5787 lbs)
Take Off: 2600 Kg (5732 lbs)
Landing: 2470 Kg (5445 lbs)
Zero Fuel: 2404 Kg (5300 lbs)
12. 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 lbs)
+0,310 m (+12,20 in) aft of datum (20% MAC) at 2200 Kg (4850 lbs) or less with linear variation for intermediate weights

13. Datum:	Tangent to the wing leading edge	
14. Levelling References:		
Lateral:	Across seat tracks	
Longitudinal:	Two screws on the fuselage left side, between frames n°8 and n°9	
15. Minimum Flight Crew:	1 (Pilot)	
16. Maximum Seating Capacity:	Total 9. (for loading information refer to Aircraft Flight Manual)	
17. Baggage / Cargo Compartments:		
Max Allowable Load:	100 Kg (220 lbs)	
Location:	at +2,550 m (+100,40 in)	
18. Wheels and Tires:	see Aircraft Flight Manual (§ G.IV)	
20. Control Surface Movements:		
Wing Flaps:		Down: 35°±2°
Ailerons:	Up: 30°±2°	Down: 17°±2°
Elevator:	Up: 26°±1°	Down: 12°±1°
Elevator Trim Tab (with elevator neutral)	Up: 10°±1°	Down: 39°±1°
Rudder:	Right: 25°±2°	Left: 25°±2°
Rudder tab:	Right: 20°±2°	Left: 20°±2°
Aileron Tab (with aileron neutral)	Up: 19°±2°	Down: 19°±2°

G.IV. OPERATING AND SERVICE INSTRUCTIONS

Airplane Flight Manual: (see Note G/4)	doc. p/n NOR 10.707-5. Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.
Airplane Maintenance Manual:	doc. p/n NOR 10.709-5 and all applicable Supplements. Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision and applicable supplements.
Service Bulletins, Letters & Instructions:	Ref. to doc. p/n NOR 10.777-2 "AP68TP Variants, Index of Service Bulletins, Service Letters and Service Instructions"

G.V. NOTES

NOTE G/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Change No. **MOD P68/014** "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, following equipments 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:	6.0 Kg (13.23 lbs) at +0,870 m (+34.25 in)
Undrainable Lubricant:	0,650 Kg (1.4 lbs) at -0,400 m (+15.75 in) per engine

SECTION H: P.68TC "Observer"

P.68TC "Observer" is the same of P.68 "Observer" Variant except for turbocharged engine

H.I. GENERAL

- | | |
|------------------------------------|--|
| 1. Data Sheet EASA No.: EASA.A.385 | Date: 16 October 2009 |
| 2. Type: | P.68 |
| 3. Variant: | P.68TC"Observer" |
| 4. Airworthiness Category: | Normal Category Aeroplanes |
| 5. Type Certificate Holder: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 6. Manufacturer: | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY |
| 7. ENAC Certification Date: | 18 June 1985 (RAI TC n°A151; ENAC TC n°A365) |
| 8. ENAC Application Date: | 24 May 1984 |
| 9. ENAC Recommendation Date: | Not Applicable |
| 10. EASA Type Certification Date: | Not Applicable |

H.II. CERTIFICATION BASIS

- | | |
|--|--|
| 1. Reference Date for determining the applicable requirements: | 24 May 1984 |
| 2. ENAC Certification Date: | 18 June 1985 |
| 3. ENAC Type Certificate Data Sheet No : | SO/ A 365 Rev. 1 Dated 12 December 2000 |
| 4. Airworthiness Requirements: | |
| 4.1.FAR 23 dated 1 st February 1965
(see Note H/1) | including Amdt 1 through 6 for Section A, B, C, D, plus
Amdt 1÷18 for Section E, F and G, and §23.1309
Amdt 7 for §§ 23.909, 23.1043, 23.1047, 23.1143,
23.1305, 23.1527, 23.1583 |
| 5. Requirements elected to comply: | None |
| 6. Special Conditions: | None |
| 7. Exemptions: | None |
| 8. Equivalent Safety Findings: | None |
| 9. Environmental Standards: | Noise: ICAO Annex 16, Volume 1, Chapter 10

Fuel venting & engine emission: Not Applicable |

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 (turbo charged, piston), high wing monoplane with fixed landing gear |
| 3. Equipment: | Refer to Equipment List of "Aircraft Flight Manual" doc. p/n NOR 10.707-4 (up s/n 394) or doc. p/n NOR 10.707-4A (for s/n 400) or doc. p/n NOR 10.707-4B (from s/n 415 onwards)
(see Note H/2) |
| 4. Dimensions: | |
| Length: | 9,15 m (30,00 ft) |
| Height: | 3,40 m (11,15 ft) |
| Width (Wing Span): | 12,00 m (39,37 ft) |
| 5. Engines: | 2 Lycoming TIO-360-C1A6D (FAA Type Certificate No. E16EA) |
| 5.1 Engine Limits: | 2575 rpm, 44" Hg (210 HP)
Other engine's limitations are listed in the doc. "Aircraft Flight Manual", Operating Limitations Section |
| 6. Propellers: | 2 Hartzell model HC-C2YK-2C()/FC7666A-0
Full Feathering, 2-Blades aluminium propeller
FAA Type Certificate No. P-920 |
| Governors:
(see Note H/11) | 2 Woodward Governors Model () 210655
or alternatively
2 Woodward Governors Model () 210844 |
| Spinners: | 2 Hartzell Model 836-29 |
| 6.1 Propeller Limits:
(see Note H/3) | Diameter Max.1,930 m (76 in), Min. 1,905 (75 in)
Pitch setting at 0,762 m (30 in) station:
Max 81° ± 1°; Min 15,9° ± 0,1° |
| 7. Fluids: | |
| 7.1 Fuel: | Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070. |
| 7.2 Lubricant: | Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014. |
| 8. Fluid capacities: | |
| 8.1 Fuel (see Notes H/4, H/8, H/15): | Total: 538 L (142 U.S. gal)
269 L (71 U.S. gal) per tank
at +0,770 m (30,3 in)
Unusable: 9 L (2,5 U.S. gal) per tank |
| 8.2 Lubricant: | Total: 15 L (16 qt)
7,5 L (8 qt) per engine
at +0,100 m (+4 in)
Unusable: 1,8 L (1,9 qt) |

- | | |
|--|---|
| 9. Air Speeds (see Note H/6): | |
| 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 $0^\circ - 17^\circ$ | 152 KCAS |
| Flaps $17^\circ - 30^\circ$ | 138 KCAS |
| Flaps $30^\circ - 35^\circ$ | 99 KCAS |
| Minimum Control Speed (Single Engine) V_{MC} : | 63 KCAS |
| 10. Maximum Operating Altitude: | 6096 m (20.000 ft) |
| 11. Operational capability: | VFR/IFR, Day/Night, depending on installed equipment
Flight in icing conditions is prohibited. |
| 12. Maximum Masses (see Note H/6): | |
| Take Off: | 1960 Kg (4321 lbs) |
| Landing: | 1860 Kg (4100 lbs) |
| 13. 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 lbs)
+0,260 m (+10,25 in) aft of datum (16,8% MAC)
at 1600 Kg (3527 lbs) or less
with linear variation for intermediate weights |
| 14. Datum: | Tangent to the wing leading edge |
| 15. Levelling References: | |
| Lateral: | Across seat tracks |
| Longitudinal: | Two screws on the fuselage left side, between frames n°8 and n°9 |
| 16. Minimum Flight Crew: | 1 (Pilot) |
| 17. 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). |
| 18. Baggage / Cargo Compartments: | |
| Max Allowable Load: | 181 Kg (400 lbs) |
| Location: | at +1,542 m (+60,7 in) |
| 19. Wheels and Tires: | see Airplane Flight Manual |

20. Control Surface Movements:

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

H.IV. OPERATING AND SERVICE INSTRUCTIONS

Airplane Flight Manual:

(see Notes H/9 and H/10)

up to s/n 394: doc. p/n NOR 10.707-4.
 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.

for s/n 400 only: doc. p/n NOR 10.707-4A.
 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.

from s/n 415 onward: doc. p/n NOR 10.707-4B.
 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.

Airplane Maintenance Manual:

up to s/n 394: doc. NOR 10.709-4 plus doc. NOR 10.709-1B.
 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision and applicable supplements.

for s/n 400 only: doc. p/n NOR 10.709-4A.
 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision and applicable supplements.

from s/n 415 onward: doc. p/n NOR 10.709-4A.
 and all applicable Supplements.
 Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision and applicable supplements.

Service Bulletins, Letters & Instructions:

Ref. to doc. p/n NOR 10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"

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:

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: §§ 23.1321, 23.1401

FAR 23 Amdt 31: § 23.629

FAR 23 Amdt 36: §§ 23.2, 23.561

Equivalent Level Of Safety: FAR 23 Amdt 20 (effective 1 Sept. 1977): § 23.1321(a)

FAR 36 Amdt 16: Appendix G §§ G36.1, G36.101, G36.103, G36.105, G36.107, G36.109, G36.111, G36.201, G36.203, G36.301.

ICAO Annex 16, Volume I, Chapter 10.

For Type Design Change No. **MOD P68/014** "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 P68/017** "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 P68/018** "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 P68/031** "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 P68/086** "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, 23.1359, 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 21/3/2008 "HIRF protection")

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 8 dated 25/3/2008 "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:

§§ 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

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, following equipments 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 lbs) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 Kg (12,57 lbs) at +0,770 m (+30,3 in) for the auxiliary wing tank (see Notes H/5, H/8)
Undrainable Lubricant:	0,454 Kg (1 lbs) at 0,100 m (+4 in)

From s/n 415 onwards

Unusable Fuel (see Note H/14):	12,9 Kg (28,44 lbs) at +0,770m (+30,3in) for Standard Range Configuration 18,7 Kg (41.23 lbs) at +0,770m (+30,3in) for Long Range Configuration
Undrainable Lubricant:	0,454 Kg (1 lbs) at 0,100 m (4 in)

NOTE H/5: P.68 TC Observer Aircraft up to and including s/n394, 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 L (195 U.S. gal) distributed as follows:

2 Main Wing Tanks:

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

100 L (26 U.S. gal) at +0,440 m (+17,3 in) per tank
Unusable: 0 L per tank.

NOTE H/6: For P.68 TC Observer Aircraft embodying the Type Design Change “MOD OBTC/01”, 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 Masses:

Taxi and Ramp:	2100 Kg (4321 lbs)
Take Off:	2084 Kg (4594 lbs)
Landing:	1980 Kg (4365 lbs)
- 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 lbs)
- +0,348 m (+13,71 in) aft of datum (22,45% MAC)
at 2084 Kg (4594 lbs)
- +0,260 m (+10,25 in) aft of datum (16,8% MAC)
at 1600 Kg (3527 lbs) or less
with linear variation for intermediate weights

NOTE H/7: For P.68 TC Observer Aircraft embodying the Type Design Change MOD OBTC/01, the number of seats is:
6: 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.68 TC Observer Aircraft modified as per the Type Design Change MOD OBTC/01 can be equipped with two auxiliary fuel tanks with transfer pumps (Kit P/N 68-050); total fuel capacity is 696 L (184 U.S. gal) distributed as follows:

- 2 Main Wing Tanks:
 - 269 L (71 U.S. gal) at + 0,770 m (+30,3 in) per tank
 - Unusable: 9 L (2,5 U.S. gal) per tank
- 2 Auxiliary Wing Tanks:
 - 79 L (21 U.S. gal) at +0,770 m (+30,3 in) per tank
 - Unusable: 4 L (1 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" (p/n NOR7.449-13), the Airplane Flight Manual shall include Supplement M.
- For P.68TC Observer embodying Type Design Change No. MOD OBTC/02 rev.1 "Cabin forced air heating system" the Airplane 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/n442 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/n415 onwards may be equipped since new with a "Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System" electronic powerplant instrumentation system, in place of the standard powerplant instrumentation (as per Type Design Changes No. MOD P68/018).

NOTE H/13: P.68TC Observer aircraft from s/n442 onwards, may be equipped since new with a SAGEM Avionics Integrated Display System approved for IFR operations, in place 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/n442 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.68 TC Observer from s/n 415 onwards (embodying MOD P68/17) two wing tank configurations are approved:

- **STANDARD RANGE**

Total fuel capacity: 538 L (142 U.S. gal) at +0,770 m (30.3 in)
Total unusable fuel: 18 L (4.7 U.S. gal)

- **LONG RANGE**

Total fuel capacity: 696 L (184 U.S. gal) at +0,770 m (30.3 in)
Total unusable fuel: 26 L (6.9 U.S. gal)

SECTION I: AP68TP-600 “Viator”

I.I. GENERAL

- | | | | |
|-----------------------------------|------------|--|-----------------|
| 1. Data Sheet EASA No.: | EASA.A.385 | Date: | 16 October 2009 |
| 2. Type: | | AP68TP | |
| 3. Variant: | | AP68TP-600 “Viator” | |
| 4. Airworthiness Category: | | Normal Category Aeroplanes | |
| 5. Type Certificate Holder: | | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY | |
| 6. Manufacturer: | | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY | |
| 7. ENAC Certification Date: | | 16 October 1986 (RAI TC n°A151; ENAC TC n°A365) | |
| 8. ENAC Application Date: | | 3 January 1984 | |
| 9. ENAC Recommendation Date: | | Not Applicable | |
| 10. EASA Type Certification Date: | | Not Applicable | |

I.II. CERTIFICATION BASIS

- | | | |
|--|--|---|
| 1. Reference Date for determining the applicable requirements: | | 3 January 1984 |
| 2. ENAC Certification Date: | | 16 October 1986 |
| 3. ENAC Type Certificate Data Sheet No : | | SO/ A 365 Rev. 1 Dated 12 December 2000 |
| 4. Airworthiness Requirements: | | |
| | <u>FAR 23 dated 1st February 1965</u> | Including Amdt 1 through 6, except for the paragraphs listed below for which compliance with following Amendments has been shown: |
| | <u>FAR 23 Amdt 7</u> | §§ 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. |
| | <u>FAR 23 Amdt 14</u> | §§ 23.153, 23.155, 23.157, 23.173, 23.201, 23.203, 23.205, 23.507, 23.509, 23.929, 23.1017, 23.1027, 23.1163, 23.1189, 23.1435. |
| | <u>FAR 23 Amdt 15</u> | §§ 23.951, 23.1013, 23.1015, 23.1019, 23.1183. |
| | <u>FAR 23 Amdt 16</u> | § 23.1182. |
| | <u>FAR 23 Amdt 17</u> | §§ 23.141, 23.143, 23.145, 23.175, 23.479, 23.733, 23.977, 23.1111, 23.1125, 23.1143, 23.1165, 23.1303. |
| | <u>FAR 23 Amdt 18</u> | §§ 23.901, 23.939, 23.943, 23.959, 23.1093, 23.1121, 23.1141, 23.1145, 23.1203, 23.1337. |
| | <u>FAR 23 Amdt 20</u> | §§ 23.1301, 23.1323, 23.1438, 23.1547. |
| | <u>FAR 23 Amdt 21</u> | §§ 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. |
| | <u>FAR 23 Amdt 23</u> | §§ 23.629, 23.723, 23.1307, 23.1545, 23.1557, 23.1583, 23.1585. |

<u>FAR 23 Amdt 24</u>	§ 23.735.
<u>FAR 23 Amdt 25</u>	§ 23.853.
<u>FAR 23 Amdt 26</u>	§§ 23.253, 23.361, 23.371, 23.729, 23.903, 23.905, 23.991, 23.1305, 23.1529
<u>FAR 23 Amdt 27</u>	§ 23.859
<u>FAR 23 Amdt 28</u>	§ 23.1549
<u>FAR 23 Amdt 32</u>	§§ 23.2, 23.785

- | | |
|------------------------------------|---|
| 5. Requirements elected to comply: | None |
| 6. Special Conditions: | None |
| 7. Exemptions: | None |
| 8. Equivalent Safety Findings: | None |
| 9. Environmental Standards: | Noise: ICAO Annex 16, Volume I, Chapter 10

Fuel venting & engine emission: Not available |

I.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

- | | | |
|---|--|------------------------------|
| 1. Type Design Definition: | doc. SPEC VA/152/PRD "Type Design Configuration Data AP68TP600 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 NOR 10.707-6 (up s/n 9004) or doc. p/n NOR 10.707-6A (from s/n 9005 onwards)
(see Note I/1) | |
| 4. Dimensions: | Up to s/n 9004 | From s/n 9005 onwards |
| Length: | 10,89 m (35,73 ft) | 11,27 m (36,97 ft) |
| Height: | 3,63 m (11,91 ft) | 3,63 m (11,91 ft) |
| Width (Wing Span): | 12,00 m (39,37 ft) | 12,00 m (39,37 ft) |
| 5. Engines: | 2 Detroit Diesel Allison 250B17C Turboprop
FAA Type Certificate No. E10CE | |
| 5.1 Engine Limits:
Max Take OFF and MCP: | Power | 328 SHP |
| | Propeller rpm | 2030 |
| | TOT | 810°C (1490 °F) |
| | Other engine's limitations are listed in the doc. "Aircraft Flight Manual", Operating Limitations Section | |
| 6. Propellers: | 2 Hartzell model HC-B3TF-7A/T10173F-21R,
or 2 Hartzell model HC-B3TF-7A/T10173FN-21R
Full Feathering and Reversing, 3-Blades propeller
FAA Type Certificate No. P15EA | |
| Governors: | 2 Woodward Model 8210-018 | |
| Spinners: | 2 Hartzell Model 82A0835-39 | |
| 6.1 Propeller Limits: | Diameter:
Max 2,032 m (80 in); Min 1,981 m (78 in)
No further reduction permitted | |

Pitch setting at 0,762 m (30 in) station:
Max $85^{\circ} \pm 1^{\circ}$; Min $8^{\circ} \pm 0,5^{\circ}$; Max Neg. $-11^{\circ} \pm 0,5^{\circ}$

7. Fluids:
7.1 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)
Fuels containing Tri-Cresyl-Phosphate additives shall
not be used

7.2 Lubricant:

MIL-L-7808G or MIL-L-23699

8. Fluid capacities:

8.1 Fuel:
(see Note I/2)

Total: 848 L (224 U.S. gal)
382 L (101 U.S. gal) per wing tank
at +0,770 m (+30,3 in) plus
42 L (11 U.S. gal) per nacelle tank
at +0,87 m (+34,25 in)
Unusable: 4 L (1 U.S. gal) per wing

8.2 Lubricant:

Total: 11,4 L (12 qt)
5,7 L (6 qt) per engine
at -0,400 m (-15,75 in)

9. Air Speeds:

Maximum operating speed V_{MO} :
up to 4572 m (15.000 ft)
at 7620 m (25.000 ft)

Up to s/n 9004 From s/n 9005 onwards

200 KCAS 200 KCAS
164 KCAS 164 KCAS
Straight line variation between these points

Design Manoeuvring Speed V_A :
Flap Fully Extended Speed V_{FE} (35°):
Maximum Landing Gear Extended Speed V_{LE} :
Maximum Landing Gear Operating Speed V_{LO} :
Minimum Control Speed (Single Engine) V_{MC} :

157 KCAS 141 KCAS
131 KCAS 131 KCAS
150 KCAS 150 KCAS
150 KCAS 150 KCAS
78 KCAS 79 KCAS

10. Maximum Operating Altitude:

7620 m (25000 ft)

Operational capability:

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

11. Maximum Masses:

Taxi and Ramp:
Take Off:
Landing:
Zero Fuel:

Up s/n 9004	From s/n 9005 onwards
2875 Kg (6338 lbs)	3025 Kg (6669 lbs)
2850 Kg (6283 lbs)	3000 Kg (6614 lbs)
2850 Kg (6283 lbs)	2850 Kg (6283 lbs)
2550 Kg (5622 lbs)	2550 Kg (5622 lbs)

12. 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 lbs)
+0,243 m (+9,58 in) aft of datum (15,7% MAC) at 2150 Kg (4740 lbs) 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 lbs)
+0,400 m (+15,75 in) aft of datum (25,8% MAC) at 3000 Kg (4740 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
13. Datum: Tangent to the wing leading edge
14. Levelling References:
Lateral: Across seat tracks
Longitudinal: Two screws on the fuselage left side, between frames n°8 and n°9
15. Minimum Flight Crew: 1 (Pilot)
16. Maximum Seating Capacity: Total 11.
(see Note I/3) (For loading information, refer to Aircraft Flight Manual)
17. Baggage / Cargo Compartments:
Max Allowable Load: 200 Kg (440 lbs)
Location: at +2,810 m (+100,63 in)
18. Wheels and Tires: see Aircraft Flight Manual (§ I.IV)
20. Control Surface Movements:
Up to s/n 9004
- | | | |
|---|---------------|--------------|
| Wing Flaps: | | Down: 35°±2° |
| Ailerons: | Up: 30°±2° | Down: 17°±2° |
| Elevator: | Up: 26°±1° | Down: 12°±1° |
| Elevator Trim Tab (with elevator neutral) | Up: 10°±1° | Down: 39°±1° |
| Rudder: | Right: 25°±2° | Left: 25°±2° |
| Rudder tab: | Right: 20°±2° | Left: 20°±2° |
| Aileron Tab (with aileron neutral) | Up: 19°±2° | Down: 19°±2° |
- From s/n 9005 onwards**
- | | | |
|---|---------------|--------------|
| Wing Flaps: | | Down: 35°±2° |
| Ailerons: | Up: 30°±2° | Down: 17°±2° |
| Elevator: | Up: 17°±1° | Down: 12°±1° |
| Elevator Trim Tab (with elevator neutral) | Up: 15°±1° | Down: 39°±1° |
| Rudder: | Right: 25°±2° | Left: 25°±2° |
| Rudder tab: | Right: 20°±2° | Left: 20°±2° |
| Aileron Tab (with aileron neutral) | | |

neutral)

Up: 24°±2°

Down: 17°±2°

I.IV. OPERATING AND SERVICE INSTRUCTIONS

Airplane Flight Manual:
(see Note I/4)

Up to s/n 9004: doc. p/n NOR 10.707-6.

Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.

From s/n 9005 onwards: doc. p/n NOR 10.707-6A

Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.

Airplane Maintenance Manual:

Up to s/n 9004:

doc. p/n NOR 10.709-6 and all applicable Supplements.
Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision and applicable supplements.

From s/n 9005 onwards:

doc. p/n NOR 10.709-6B and all applicable Supplements.
Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision and applicable supplements.

Service Bulletins, Letters & Instructions:

Ref. to doc. p/n NOR 10.777-2 "AP68TP Variants, Index of Service Bulletins, Service Letters and Service Instructions"

I.V. NOTES

NOTE I/1: The 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 § I.IV)

NOTE I/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: 6.0 Kg (13.23 lbs) at +0,870 m (+34.25 in)

Undrainable Lubricant: 0,650 Kg (1.4 lbs) at -0,400 m (-15.75 in) per engine

NOTE I/3: 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/4: 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 EASA No.: | EASA.A.385 | Date: | 16 October 2009 |
| 2. Type: | | P.68 | |
| 3. Variant: | | P.68 “Observer2” | |
| 4. Airworthiness Category: | | Normal Category Aeroplanes | |
| 5. Type Certificate Holder: | | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY | |
| 6. Manufacturer: | | VULCANAIR S.p.A.
Via Francesco Caracciolo, 15
80122 - Napoli
ITALY | |
| 7. ENAC Certification Date: | | 30 November 1989 (RAI TC n°A151; ENAC TC n°A365) | |
| 8. ENAC Application Date: | | 3 May 1988 | |
| 9. ENAC Recommendation Date: | | Not Applicable | |
| 10. EASA Type Certification Date: | | Not Applicable | |

L.II. CERTIFICATION BASIS

- | | | | |
|--|--|---|--|
| 1. Reference Date for determining the applicable requirements: | | 3 May 1988 | |
| 2. ENAC Certification Date: | | 30 November 1989 | |
| 3. ENAC Type Certificate Data Sheet No : | | SO/ A 365 Rev. 1 Dated 12 December 2000 | |
| 4. Airworthiness Requirements:
FAR 23 dated 1 st February 1965
(see Note L/1) | | including Amdt 1 through 6 plus
§ 23.507 and 23.509 at Amdt 14
§ 23.629 at Amdt 31
§ 23.1322 at Amdt 17
§ 23.1401 at Amdt 20. | |
| 5. Requirements elected to comply: | | None | |
| 6. Special Conditions: | | None | |
| 7. Exemptions: | | None | |

8. Equivalent Safety Findings: None
9. Environmental Standards: Noise: ICAO Annex 16, Volume I, Chapter 10
- Fuel venting & engine emission: Not Applicable

L.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1. Type Design Definition: doc. SPEC VA/129/PRD "Type Design Configuration Data P.68 OBS2"
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 NOR 10.707-8 (up to s/n 410) or doc. p/n NOR 10.707-8B (from s/n 411 onwards)
(see Note L/2)
4. Dimensions:
- | | Up to s/n 410 | From s/n 411 onwards |
|--------------------|----------------------|-----------------------------|
| Length: | 9,54 m (31,30 ft) | 9,15 m (30,02 ft) |
| Height: | 3,40 m (11,15 ft) | 3,40 m (11,15 ft) |
| Width (Wing Span): | 12,00 m (39,37 ft) | 12,00 m (39,37 ft) |
5. Engines: 2 Lycoming IO-360-A1B6
FAA Type Certificate No. 1E10
- 5.1 Engine Limits: 200 HP at 2700 rpm
Other engine's limitations are listed in the Aircraft Flight Manual, Operating Limitations Section
6. Propellers: 2 Hartzell model HC-C2YK-2C()F/FC7666A-4
Full Feathering, 2-Blades aluminium propeller
FAA Type Certificate No. P-920
- Governors:
(see Note L/6)
- 2 Woodward Model () 210655
or alternatively
2 Woodward Model () 210844
- Spinners: 2 Hartzell Model 836-29
- 6.1 Propeller Limits: Diameter 1,829 m (72 in) No reduction permitted
Pitch setting at 0,762 m (30 in) station:
Max 81,2° ± 0,3°; Min 14,2° ± 0,2°

7. Fluids:
- 7.1 Fuel: Aviation Gasoline, grade 100 or 100LL, in accordance with latest issue of Textron Lycoming Service Instruction 1070.
- 7.2 Lubricant: Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014.
8. Fluid capacities:
(see Note L/3)
- 8.1 Fuel:
(see Notes L/4)
- | | |
|-----------|------------------------------|
| Total: | 538 L (142 U.S. gal) |
| | 269 L (71 U.S. gal) per tank |
| | at +0,770 m (30,3 in) |
| Unusable: | 9 L (2,5 U.S. gal) per tank |
- 8.2 Lubricant:
- | | |
|-----------|-------------------------|
| Total: | 15 L (16 qt) |
| | 7,5 L (8 qt) per engine |
| | at +0,100 m (4 in) |
| Unusable: | 1,8 L (1,9 qt) |
9. 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} : | 58 | KCAS |
10. Maximum Operating Altitude: Not applicable
11. Operational capability: VFR/IFR, Day/Night, depending on installed equipment
Flight in icing conditions is prohibited.
12. Maximum Masses:
- | | |
|---------------------------|--------------------|
| Taxi and Ramp: | 2100 Kg (4630 lbs) |
| Take Off: | 2084 Kg (4594 lbs) |
| Landing: | 1980 Kg (4365 lbs) |
| Maximum Zero Fuel Weight: | 1890 Kg (4167 lbs) |
13. 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 lbs) |
| | +0,348 m (+13,71 in) aft of datum (22,45% MAC) |
| | at 2084 Kg (4594 lbs) |
| | +0,260 m (+10,25 in) aft of datum (16,8% MAC) |
| | at 1600 Kg (3527 lbs) or less |
| | with linear variation for intermediate weights |
14. Datum: Tangent to the wing leading edge

- | | | |
|--|--|-----------------------------------|
| 15. Levelling References: | | |
| Lateral: | Across seat tracks | |
| Longitudinal: | Two screws on the fuselage left side, between frames n°8 and n°9 | |
| 16. Minimum Flight Crew: | 1 (Pilot) | |
| 17. 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) | |
| 18. Baggage / Cargo Compartments: | | |
| Max Allowable Load: | 181 Kg (400 lbs) | |
| Location: | at +1,542 m (+60,7 in) | |
| 19. Wheels and Tires: | see Aircraft Flight Manual (§ L.IV) | |
| 20. Control Surface Movements: | | |
| Wing Flaps: | | Down: 35°±2° |
| Ailerons: | Up: 30°±2° | Down: 17°±2° |
| Stabilizer (leading edge): | Up: 6°±2° | Down: 16°±2° |
| Stabilizer tab (trailing edge with respect to stabilator chord): | | Down: 1°±1° (min)
15°±1° (max) |
| Rudder: | Right: 25°±2° | Left: 25°±2° |
| Rudder tab: | Right: 30°±2° | Left: 30°±2° |

L.IV. OPERATING AND SERVICE INSTRUCTIONS

Airplane Flight Manual:
(see Note L/5)

Up to s/n 410: doc. p/n NOR 10.707-8
Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.

From s/n 411 onwards: doc. p/n NOR 10.707-8B
Refer to doc. p/n NOR 10.763-1 "P.68 Variants Index of Technical Publications" for latest applicable revision.

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 and applicable supplements.

Service Bulletins, Letters & Instructions:

Ref. to doc. p/n NOR 10.777-1 "P.68 Variants, Index of Service Bulletins, Service Letters and Service Instructions"

L.V. NOTES

NOTE L/1: CERTIFICATION BASIS OF TYPE DESIGN CHANGES

For Type Design Change No. **MOD P68/014** "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 P68/017** "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 P68/018** "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 P68/031** "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 P68/052** "Cloud Seeding System Installation (Aero Systems 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

§§ 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 P68/086** "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, 23.1359, 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 (on elect to comply basis): 23.1359

For Type Design Change No. **MOD P68/123** "SAGEM Avionics Integrated cockpit installation (IFR)", in addition to P.68 Observer 2 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 21/3/2008 "HIRF protection")

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 8 dated 25/3/2008 "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:

§§ 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

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, following equipments 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 lbs) at +0,770 m (+30,3 in) for the main wing tanks and 5,7 Kg (12,57 lbs) at +0,770 m (+30,3 in) for the auxiliary wing tank (see Note L/4a)
Undrainable Lubricant:	0,454 Kg (1 lbs) at 0,100 m (+4 in)

From s/n 411 onwards

Unusable Fuel (see Note L/4b):	12,9 Kg (28,44 lbs) at +0,770m (+30,3in) for Standard Range Configuration 18,7 Kg (41.23 lbs) at +0,770m (+30,3in) for Long Range Configuration
Undrainable Lubricant:	0,454 Kg (1 lbs) at 0,100 m (4 in)

NOTE L/4: Fuel Capacities

L/4a) For P.68 Observer 2 Aircraft up to s/n 410 can be equipped with two auxiliary tanks with transfer pumps (Kit P/N 68-050). For aircraft in this configuration, total fuel capacity is 696 L (184 U.S. gal) and total usable fuel is 670 L (177 U.S. gal) distributed as follows:

- 2 Main Wing Tanks: 269 L (71 U.S. gal) at +0,770 m (30,3 in) per tank
Unusable: 4 L (1 U.S. gal) per tank
- 2 Auxiliary Wing Tanks: 79 L (21 U.S. gal) at +0,770 m (30,3 in) per tank
Unusable: 4 L (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 L (142 U.S. gal) at +0,770 m (30.3 in)
Total unusable fuel: 18 L (4.7 U.S. gal)
- **LONG RANGE**
Total fuel capacity: 696 L (184 U.S. gal) at +0,770 m (30.3 in)
Total unusable fuel: 26 L (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/n446 onwards, including s/n423, 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/n411 onwards may be equipped since new with a “Vision Microsystems VM1000, EC100, Air Temperature, Chronometer and Fuel Level System” electronic powerplant instrumentation system, in place of the standard powerplant instrumentation (as per Type Design Changes No. MOD P68/018).

NOTE L/8: P.68 Observer 2 aircraft from s/n446 onwards, including s/n423, may be equipped since new with a SAGEM Avionics Integrated Display System approved for IFR operations, in place 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/n446 onwards, including s/n423, may be equipped since new with a S-Tec 55X Autopilot (as per Type Design Change No. MOD P68/86).

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