

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

A31EU  
Revision 25  
Vulcanair S.p.A.

P.68  
P.68B  
P.68C  
P.68C-TC  
P.68 "OBSERVER"  
AP68TP-300 "SPARTACUS"  
P.68TC "OBSERVER"  
AP68TP-600 "VIATOR"  
P.68 "OBSERVER 2"  
P.68R

July 20, 2015

TYPE CERTIFICATE DATA SHEET A31EU

This data sheet which is a part of Type Certificate No. A31EU prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder. Vulcanair S.p.A.  
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Type Certificate Holder Record Partenavia Costruzioni Aeronautiche S.p.A.  
Naples, Italy (TC A31EU transferred to Vulcanair)

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I. Model P.68 (Normal Category), Approved December 7, 1971.

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Engines. Two Lycoming IO-360-A1B or  
Two Lycoming IO-360-A1B6

Fuel. 100/130 Minimum grade aviation gasoline

Engine Limits. For all operations 2,700 r.p.m. (200HP) (See NOTE 2(C))

Propeller and Propeller Limits. Two Hartzell HC-C2YK-2C/C7666A-4 or  
Two Hartzell HC-C2YK-2C( ) F/FC7666A-4  
Diameter 72 in. (No reduction permitted).

Pitch setting at 30 in. station  
Low 14.2° ± 0.2°, High 81.2° ± 0.3°  
Governor: Hartzell Model F-6-3A or Woodward Model B210655 or L210844  
on left engine and C210655 or R210844 on right engine  
Spinner: Hartzell Model 836-29

Airspeed Limits (CAS).

Never exceed	187.5 knots
Maximum structural cruising	149 knots
Maneuvering	122 knots
Flaps extended (35°)	99 knots
Minimum single engine control speed (See NOTE 4)	60 knots

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<u>C.G. Range.</u>	(+12.8 in.) to (+20.7 in.) at 4100 lb. (+10.2 in.) to (+20.7 in.) at 3310 lb. and less Straight line variation between points. (See NOTE 4)
<u>Empty Weight C.G. Range.</u>	None.
<u>Minimum Crew.</u>	1 pilot.
<u>Maximum Weight.</u>	4100 lb. (See NOTE 4)
<u>Number of Seats.</u>	6 (2 at - 31.5 in.), (2 at - 2.8 in.), (2 at 34.2 in.) (See NOTE 5)
<u>Maximum Baggage.</u>	400 lb. (55.6 in.)
<u>Fuel Capacity.</u>	108 gal. total (2 wing tanks 54 gal. each at +30.3) 2.5 gal. unusable per tank (See NOTE 6).
<u>Oil Capacity.</u>	16 qt. total (8 qt. in each engine at +4.0) See NOTE 1 for data on unusable fuel and undrainable oil.

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II. Model P.68B (Normal Category), Approved August 16, 1974.

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<u>Engines.</u>	Two Lycoming IO-360-A1B or Two Lycoming IO-360-A1B6
<u>Fuel.</u>	100/130 Minimum grade aviation gasoline.
<u>Engine Limits.</u>	For all operations 2,700 r.p.m. (200HP) (See NOTE 2(C)).
<u>Propeller and Propeller Limits.</u>	Two Hartzell HC-C2YK-2C( )F/FC7666A-4 Diameter 72 in. (No reduction permitted).  Pitch setting at 30 in. station: Low $14.2^\circ \pm 0.2^\circ$ , High $81.2^\circ \pm 0.3^\circ$ Governor: Hartzell Model F-6-3A Woodward Model B210655 or L210844 on left engine and C210655 or R210844 on right engine Spinner: Hartzell Model 836-29
<u>Airspeed Limits (CAS).</u>	Never exceed 193 kts Max. structural cruise 153 kts Maneuvering 125 kts Flaps extended (35°) 99 kts Min. Single Engine Speed 60 kts
<u>C.G. Range.</u>	(+12.8 in.) to (+20.7 in.) at 4321 lb. (+10.2 in.) to (+20.7 in.) at 3527 lb. and less. Straight line variation between points.
<u>Minimum Crew.</u>	1 pilot.
<u>Maximum Weight.</u>	4321 lb.
<u>Maximum Landing Weight.</u>	4100 lb.
<u>Number of Seats.</u>	6 - (2 at - 37.4 in.), (2 at - 5.7 in.) (2 at + 34.2 in.), (See NOTE 5)
<u>Maximum Baggage.</u>	400 lb (at + 60.7 in.)

Fuel Capacity. 108 gal. total (2 wing tanks 54 gal. each at + 30.2 in.)  
(2.5 gal. unusable per tank) (See NOTE 6).

Oil Capacity. 16 qt. total (8 qt. each engine at + 4.0 in.)  
See NOTE 1 for data on unusable fuel and undrainable oil.

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III. Model P.68C (Normal Category), Approved July 24, 1980.

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The model P 68C is same as P 68B 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.

Engines. Two Lycoming IO-360-A1B6.

Fuel. 100/130 Minimum grade aviation gasoline.

Engine Limits. For all operations 2,700 r.p.m. (200 HP)

Propeller and Propeller Limits. Two Hartzell HC-C2YK-2C ( ) F/FC7666A-4  
Diameter 72 in. (no reduction permitted).

Pitch setting at 30 in. station:  
Low 14.2° ± 0.2°, High 81.2° ± 0.3°  
Governor: Woodward Model B210655 or ( ) 210844

Spinner: Hartzell Model 836-29

<u>Airspeed Limits (CAS).</u> (See NOTE 14)	Never exceed	193 knots
	Max. structural cruise	153 knots
	Maneuvering	126 knots
	Flap extended - V <sub>FE</sub> (35°)	99 knots
	Min. single engine speed	60 knots

C.G. Range. (+11.81 in.) to (+20.7 in.) at 4387 lb.  
(See NOTE 14) (+ 9.06 in.) to (+20.7 in.) at 3703 lb. and less  
Straight line variation between points.

Minimum Crew. 1 pilot.

Maximum Weight. (See NOTE 14) 4387 lb.

Maximum Landing Weight. 4167 lb.  
(See NOTE 14)

Number of Seats. 7 - (2 at -37.4 in.), (2 at -5.7 in.), (3 at +34.2 in.) (See NOTE 5).

Maximum Baggage. 400 lb. (at +60.7 in.)

Fuel Capacity. A. For S/N 209: 108 gal. total (2 wing tanks 54 gal. each at +30.2 in.)  
(See NOTE 15) (2.5 gal. unusable per tank) (See NOTE 6).

B. As of S/N 210: 142 gal. total (2 wing tanks 71 gal. each at 30.2 in.)  
2.5 gal. unusable per tank). See NOTE 1.

Oil Capacity. 16 qt. total (8 qt. each engine at +4.0 in.)  
See NOTE 1 for data on unusable fuel and undrainable oil.

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**IV. Model P.68C-TC (Normal Category), Approved September 10, 1982.**


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The model P 68C-TC is same as P 68C except for:	1) turbocharged engines; 2) modified cabin heating system; and 3) all metal wing leading edge.
<u>Engines.</u>	Two Lycoming TO-360-C1A6D or Two Lycoming TIO-360-C1A6D Engine Mixed not approved.
<u>Fuel.</u>	100/or 100LL Minimum grade aviation gasoline.
<u>Engine Limits.</u> (See NOTE 8)	For all operations 2,575 r.p.m., 42 in. Hg (210 HP) (For TO-360-C1A6D) or 2,575 r.p.m., 44 in. Hg (210 HP) (For TIO-360-C1A6D)
<u>Propeller and Propeller Limits.</u>	Two Hartzell HC-C2YK-2C( )F/FC7666A-0 Diameter 76 in. max, 75 in. min. Pitch setting at 30 in. station: Low 15°30' (± 10'), High 81° (± 30') Governor: Woodward Model A210655 or ( ) 210844 Spinner: Hartzell Model 836-29
<u>Airspeed Limits (CAS).</u>	Never exceed 193 Knots Max. structural cruise 153 Knots Maneuvering 126 Knots Flap extended - $V_{FE}$ (35°) 99 Knots Min. single engine control speed 63 Knots
<u>Altitude Limits.</u>	Max. operating altitude: 20,000 ft
<u>C.G. Range.</u>	(+11.81 in.) to (+20.7 in.) at 4387 lb. (+ 9.06 in.) to (+20.7 in.) at 3703 lb. and less. Straight line variation between points.
<u>Minimum Crew.</u>	1 pilot.
<u>Maximum Ramp Weight.</u>	4442 lb.
<u>Maximum Weight.</u>	4387 lb.
<u>Maximum Landing Weight.</u>	4167 lb.
<u>Number of Seats.</u>	7 - (2 at -37.4 in.), (2 at -5.7 in.), (3 at +34.2 in.).
<u>Maximum Baggage.</u>	400 lb. (at +60.7 in.).
<u>Fuel Capacity.</u>	142 gal. total (2 wing tanks 71 gal. each at 30.2 in., 2.5 gal. unusable fuel per tank) (See NOTE 9).
<u>Oil Capacity.</u>	16 qt. total (8 qt. each engine at +4.0 in. See NOTE 1 for data on unusable fuel and undrainable oil).

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**V. Model P.68 "OBSERVER" (Normal Category) approved November 3, 1982.**


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The model P 68 "OBSERVER" is ame as P 68B except for:

- 1) plexiglass fuselage nose,
- 2) steel truss for nose landing gear attachment,
- 3) new instrument panel,
- 4) control system, and
- 5) increased fuel capacity.

<u>Engines.</u>	Two Lycoming IO-360-A1B6
<u>Fuel.</u>	100/130 minimum grade aviation gasoline.
<u>Engine Limits.</u>	For all operations 2,700 r.p.m. (200 HP).
<u>Propeller and Propeller Limits.</u>	Two Hartzell HC-C2YK-2C( )/FC7666A-4 Diameter 72 in. (No reduction permitted).  Pitch setting at 30 in. station: Low $14.2^\circ \pm 0.2^\circ$ , High $81.2^\circ \pm 0.3^\circ$ Governor: Woodward Model B210655 or ( ) 210844 Spinner: Hartzell Model 836-29
<u>Airspeed Limits (CAS).</u> (See NOTE 13)	Never exceed 193 Kts Max. structural cruise 153 Kts Maneuvering 125 Kts Flap extended (35°) 99 Kts Min. Single Engine Speed 60 Kts
<u>C.G. Range.</u> (See NOTE 13)	(+12.8 in.) to (+20.7 in.) at 4321 lb. (+10.2 in.) to (+20.7 in.) at 3527 lb. and less.  Straight line variation between points.
<u>Minimum Crew.</u>	1 pilot.
<u>Maximum Weight.</u> (See NOTE 13)	4321 lb.
<u>Maximum Landing Weight.</u> (See NOTE 13)	4100 lb.
<u>Number of Seats.</u>	7 - (2 at -37.4 in.), (2 at -5.7 in.), (3 at +34.2 in.)
<u>Maximum Baggage.</u>	400 lb. (at +60.7 in.)
<u>Fuel Capacity.</u> (See NOTE 15)	142 gal. total (2 wing tanks 71 gal. each at +30.2 in.) (2.5 gal. unusable per tank.)
<u>Oil Capacity.</u>	16 qt. total (8 qt. each engine at +4.0 in.) See NOTE 1 for data on unusable fuel and undrainable oil.

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VI. Model AP68TP series 300 Spartacus (Normal Category), Approved May 23, 1984.

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<u>Engines.</u>	2 Detroit Diesel Allison 250B17C
<u>Fuel.</u>	Conforming to specification: MIL-T-5624 JP4, JP5, ASTM D-1655, JET B ASTM D-1655, JET A or A1, JP1 relating to ASTM D-1655A Diesel n.1, relating ASTM D-1655, JETA Emergency: MIL-G-5572C, all grades W/O (TCP)
<u>Oil.</u>	Conforming to specification: MIL-L-7808G and MIL-L-23699B
<u>Engine Limits.</u>	Take-off and M.C.P. Power: 328 SHP Max. T.O.T.: 810°C Propeller: 2030 RPM

Propeller and Propeller Limits.

- a) 2 Hartzell full feathering, reversing, three blades  
 Model HC-B3TF-7A/T10173F-21R  
 Diameter: MAX 80" (2.032 m)  
 MIN 78" (1.981 m)  
 Pitch setting at 30 in. sta. (0.762 m):  
 LOW =  $8^{\circ} \pm .5^{\circ}$   
 HIGH =  $85^{\circ} \pm 1^{\circ}$   
 REVERSE =  $-11^{\circ} \pm .5^{\circ}$
- b) Woodward hydraulic governor, model 8210-018  
 c) Hartzell spinner, model A-3640

Airspeed Limit (CAS)

Maximum operating speed:  $V_{MO} = 197$  Kts (up to 15.000 ft)  
 $V_{MO} = 160$  Kts (at 25.000 ft)  
 Straight line variation between these points

Maneuvering:  $V_A = 143$  Kts

Flap extended (full)  $V_{FE} = 119$  Kts

Minimum single engine speed  $V_{MC} = 80$  Kts

Datum.

Wing leading edge

Leveling Means.

Longitudinal lower frame of left rear cabin window.

C.G. Range.

(+14.64) to (+21.06") at 5732 lbs  
 (+12.20) to (+21.06") at 4850 lbs and less straight line variation between points given.

Empty Weight C.G. Range.

None.

Maximum Weight.

Ramp: 5787 lbs  
 Take-off: 5732 lbs  
 Landing: 5445 lbs  
 Zero fuel: 5300 lbs

Minimum Crew.

1 pilot

Number of Seats.

9  
 See loading instruction for passenger loading

Maximum Baggage.

220 lbs at 100.40" (2.550 m)

Fuel Capacity.

Total 848 lt (224 U.S. Gals)

TANK	CAP. GALS	ARM
L.&R. WING	101 e a	+ 30.31
L.&R. NACELLE	11 e a	+ 34.25

Unusable fuel: 1 US GALS each side (See NOTE 1)

Oil Capacity.

Total 12 qts (11.4 lt) 6 Qts each engine  
 at - 15.75" (-400 m)  
 (See Note 1)

Maximum Operating Altitude Limit.

25,000 ft

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**VII. Model P.68TC OBSERVER (Normal Category) approved September 30, 1985**


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The model P68TC Observer is same as P68 Observer except for: (1) turbocharged engines; (2) modified cabin heating system; and (3) all-metal wing leading edge.

<u>Engines.</u>	Two Lycoming TIO 360-C1A6D		
<u>Fuel.</u>	100 or 100LL Min. grade aviation Gasoline.		
<u>Engine Limits.</u> (See Note 8)	For all operation: 2575 r.p.m., 44 in. Hg (210 HP)		
<u>Propeller and Propeller Limits.</u>	Two Hartzell HC-C2YK-2C( )F/FC7666A-0 Diameter 76 in. max. 75 in. min. Pitch setting at 30 in. station: - low 15.5° ± .10° - high 81° ± .30° Governor: Woodward Model A210655 or A210844 Spinner: Hartzell Model 836-29		
<u>Airspeed Limits (CAS).</u>			a/c modified as per MOD.OBTC/01
	Never Exceed	193 Knots	194 Knots
	Max. Structural Cruise	153 Knots	154 Knots
	Maneuvering	125 Knots	132 Knots
	Flap Extended (35°)	99 Knots	103 Knots
	Min. Single Engine Control Speed	63 Knots	64 Knots
<u>Altitude Limits.</u>	Max. Operating Altitude: 20,000 ft.		
<u>C.G. Range.</u>	(±12.8 in.) to (±20.7 in.) at 4321 lb. (±10.2 in.) to (±20.7 in.) at 3527 lb. and less. Straight line variation between points.  (a/c modified as per MOD.OBTC/01) (±13.71 inc.) to (±18.92 inc.) at 4594 lb. (±10.25 inc.) to (±18.92 inc.) at 3527 lb. and less  Straight line variation between points.		
<u>Minimum Crew.</u>	1 pilot.		
<u>Maximum Takeoff Weight.</u>	4321 lb.	4594 lb.	a/c modified as per MOD. OBTC/01
<u>Maximum Landing Weight.</u>	4100 lb.	4365 lb.	a/c modified as per MOD. OBTC/01
<u>Number of Seats.</u>	7 - (2 at -37.4 in.), (2 at -5.7 in.), (3 at +34.2 in.).  (a/c modified as per MOD. OBTC/01) 6 - (2 at -37.4 in.), (2 at -5.7 in.), (2 at +34.2 in.).		
<u>Maximum Baggage.</u>	400 lb. (at +60.7 in.).		
<u>Fuel Capacity.</u>	142 US Gals total (2 wing tanks 71 gals. each at 30.2 in.) 2.5 gal unusable fuel per tank. See NOTE 9 and 6.		
<u>Oil Capacity.</u>	16 qts total (8 qts each engine at +4.0 in.). See Note 1 for data on unusable fuel and undrainable oil.		

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 VIII. Model AP68TP-600 Viator (Normal Category), approved December 19, 1986.
 

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<u>Engines.</u>	2 Detroit Diesel Allison 250 B17C
<u>Fuel.</u>	Conforming to specification: MIL-T-5624 JP4, JP5, ASTM D-1655, JET B ASTM D-1655, JET A or A1, JP1 relating to ASTM D-1655A Diesel N.1, relating ASTM D-1655, JET A Emergency: MIL-G-5572c, all grades W/d (TCP)
<u>Oil.</u>	Conforming to specification: MIL-L-7808G and MIL-L-236998
<u>Engine Limits.</u>	Take-off and M.C.P. Power: 328 SHP Max T.O.T.: 810°C Propeller: 2030 RPM
<u>Propeller and Propeller Limits.</u>	a) 2 Hartzell full feathering, reversing, three blades Model HC-B3TF-7A/T10173T-21R Diameter: Max 80" (2.032 m) Min 78" (1.981 m) Pitch setting at 30 in. sta. (0.762 m): LOW = 8 deg +/- 0.5 HIGH = 85 deg +/- 1.0 REVERSE " -11 deg +/- 0.5 b) Woodward hydraulic governor, model 8210-018 c) Hartzell spinner, model A-3640
<u>Airspeed Limit.</u> (See NOTE 20)	Maximum operating speed: $V_{MO} = 200$ kts (Up to 15000 ft) $V_{MO} = 164$ kts (at 25000 ft) Straight line variation between these points
	Maneuvering: $V_A = 157$ kts
	Flap extended (full) $V_{FE} = 131$ kts
	Gear Operation $V_{LO} = 150$ kts
	Gear Extended $V_{LE} = 150$ kts
	Minimum single engine $V_{MC} = 78$ kts
<u>Datum.</u>	Wing leading edge
<u>Leveling Means.</u>	Longitudinal lower frame of left rear cabin window
<u>C.G. Range.</u> (See NOTE 20)	( + 14.65 ) to ( + 21.36 ) at 6283 lbs ( + 9.58 ) to ( + 21.36 ) at 4740 lbs and less, straight line variation between points given.
<u>Empty Weight C.G. Range.</u>	None
<u>Maximum Weight.</u> (See NOTE 20)	Ramp: 6338 lb Take-off: 6283 lb Landing: 6283 lb Zero Fuel: 5622 lb
<u>Minimum Crew.</u>	1 pilot
<u>Maximum Baggage.</u>	440 lbs at 110.63" (2.810 m)

<u>Fuel Capacity.</u>	Total 848 lt (224 U.S. Gals.)		
	<u>TANK</u>	<u>CAP. GALS</u>	<u>ARM</u>
	L. & R. WING	101 ea.	+ 30.31
	L. & R. NACELLE	11 ea.	+ 34.25
	Unusable Fuel: 1 U.S. Gals each side (See NOTE 1)		
<u>Oil Capacity.</u>	Total 12 qts (11.4 lt) 6 qts each engine at - 15.75" (-.400 m) (See note 1)		
<u>Maximum Operating Altitude.</u>	25000 ft		

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IX. Model P.68 OBSERVER 2 (Normal Category), approved July 1, 1993.

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The model P68 Observer 2 is the same as model P68 Observer except for :

- a. New instrument panel
- b. 100 Amps alternator installation
- c. Up turned wing tips
- d. Strengthened leafspring
- e. Oversized main wheel
- f. Nose wheel steering disengagement
- g. Increased maximum take off and landing weight  
(See NOTE 11)

<u>Engine.</u>	Two Lycoming IO-360-A1B6	
<u>Fuel.</u>	100/130 Minimum Grade Aviation Gasoline	
<u>Engine Limits.</u>	For all operations 2700 rpm (200 HP)	
<u>Propeller and Propeller Limits.</u>	Two Hartzell HC-C2YK-2( )F/FC7666A-4 Diameter 72 inc. (No reduction permitted)	
	Pitch setting at 30 inc. station: Low $14.2^{\circ} \pm 0.2^{\circ}$ , High $81.2^{\circ} \pm 0.3^{\circ}$ Governor: Woodward Models: B210655 or L210844 on left engine and C210655 or R210844 on right engine. Spinner: Hartzell Model 836-29	
<u>Airspeed Limits (CAS).</u>	Never exceed	194 kts
	Max. structural cruise	154 kts
	Maneuvering	132 kts
	Flap extended (35°)	103 kts
	Min. Single Engine Speed	58 kts
<u>C.G. Range.</u>	(+13.71 inc.) to (+18.92 inc.) at 4594 lb. (+10.25 inc.) to (+18.92 inc.) at 3527 lb. and less.	
	Straight line variation between points.	
<u>Minimum Crew.</u>	1 pilot	
<u>Maximum Weight.</u>	Ramp Weight; 4630 lb. - Maximum Take Off Weight; 4594 lb.	
<u>Maximum Landing Weight.</u>	4365 lb.	

<u>Zero Fuel Weight.</u>	4167 lb.
<u>Maximum Baggage.</u>	400 lb. (at +60.7 inc.)
<u>Fuel Capacity.</u>	142 gal. total (2 wing tanks 71 gal. at 30.2 inc.) (2.5 gal .unusable per tank) (see NOTE 12)
<u>Oil Capacity.</u>	16 qt. total (8 qt. each engine at +4.0 inc.) See NOTE 1 for data on unusable fuel and undrainable oil.

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X. Model P.68R (Normal Category), Approved February 19, 2014

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The model P.68R is derived by P.68B, featuring a retractable landing gear.

<u>Engines.</u>	Two Lycoming IO-360-A1B6	
<u>Fuel.</u>	100 or 100LL Minimum grade aviation gasoline.	
<u>Engine Limits.</u>	For all operations 2700 rpm (200 HP)	
<u>Propeller and Propeller Limits.</u>	Two Hartzell HC-C2YK-2C( )/FC7666A-4 Diameter 72 in. (no reduction permitted).  Pitch setting at 30 inc. station: Low $14.2^\circ \pm 0.2^\circ$ , High $81.2^\circ \pm 0.3^\circ$ Governor: Woodward Models: B210655 or L210844 on left engine and C210655 or R210844 on right engine, or MT-Propeller Model: P-881-30 on left engine and P-881-31 on right engine. Spinner: Hartzell Model 836-29	
<u>Airspeed Limits (CAS).</u> (See NOTE 18)	Never exceed Max. structural cruise Maneuvering Flap extended - $V_{FE}$ (35°) Min. single engine speed Max. landing gear extended VLE Max. landing gear operating (extension) Max. landing gear operating (retraction)	193 kts 153 kts 125 kts 99 kts 60 kts 131 kts 131 kts 112 kts
<u>C.G. Range.</u> (See NOTE 18)	(+12.8 in.) to (+20.7 in.) at 4321 lb. (+10.2 in.) to (+20.7 in.) at 3527 lb. and less Straight line variation between points.	
<u>Minimum Crew.</u>	1 pilot.	
<u>Maximum Weight.</u> (See NOTE 18)	4321 lb.	
<u>Maximum Landing Weight.</u> (See NOTE 18)	4321 lb.	
<u>Number of Seats.</u>	7 - (2 at -37.4 in.), (2 at -5.7 in.), (3 at +34.2 in.)	
<u>Maximum Baggage.</u>	400 lb. (at +60.7 in.)	
<u>Fuel Capacity.</u> (See NOTE 19)	142 gal. total (2 wing tanks 71 gal. at 30.2 inc.) (2.5 gal .unusable per tank)	

Oil Capacity. 16 qt. total (8 qt. each engine at +4.0 in.)  
See NOTE 1 for data on unusable fuel and undrainable oil.

#### DATA PERTINENT TO ALL MODELS

Datum. Wing leading edge.

Leveling Means. Longitudinal lower frame of left rear cabin window.

Control Surface Movements. For Models P.68, P.68B, P.68C, P.68C-TC, P.68 "Observer",  
(See NOTE 20) P.68TC "Observer", P.68 "Observer" 2 and P.68R.

Wing flaps		Down 35° ± 2°
Aileron	Up 30° ± 2°	Down 17° ± 2°
Stabilator L.E.	Up 6° ± 2°	Down 16° ± 2°
Stabilator Tab (with respect to stabilator chord)	Down 1° ± 1°	Down 15° ± 1°
Rudder	Right 25° ± 2°	Left 25° ± 2°
Rudder tab	Right 30° ± 2°	Left 30° ± 2°

For Models AP68TP-300 Spartacus and AP68TP-600 Viator (up to s/n 9004)

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

Serial Numbers Eligible. Each individual aircraft manufactured under this type certificate must be accompanied by an Export Certificate of Airworthiness as noted below under "Import Requirements" when an application for a U.S. airworthiness certificate is made.

Model P.68 Observer 2: 384-01-OB2 and subsequent.  
Model P.68R: 458/R and subsequent.

Certification Basis.  
FAR 21.17

For Model P.68:  
FAR 23 effective February 1, 1965, including Amendments 23-1 through 23-6.

For Models P.68B, P.68 "OBSERVER", and P.68C:  
FAR 23 effective February 1, 1965, including Amendments 23-1 through 23-6, and FAR 36 effective December 1, 1969, including Amendments 36-1 through 36-9.

For Model P.68C-TC, and P.68TC "Observer":  
FAR 23 effective February 1, 1965, including Amendments 23-1 through 23-6, and

<u>14 CFR Section</u>	<u>Amendment Number</u>
23.909	23-7
23.1043	23-7
23.1047	23-7
23.1143	23-7
23.1305	23-7
23.1527	23-7
23.1583	23-7

FAR 36 effective December 1, 1969, including amendments 36-1 through 36-12.  
Partenavia Costruzioni Aeronautiche S.p.A. elected to demonstrate compliance, for the Model P 68C-TC and P68TC "Observer", with Subparts

E, F (except FAR 23.1309), and G of FAR 23 as amended by Amendment 23-18.

Date of application for Type Certificate: January 22, 1969 for P68C-TC; April 30, 1985 for P68TC "Observer". Type Certificate No. A31EU issued December 7, 1971. Amended August 16, 1974, July 24, 1980, September 10, 1982, November 3, 1982, September 30, 1985.

For Model P.68TC "Observer" embodies modification No. MOD.OBTC/01.

FAR 23 effective February 1/1965, as amended through 23-6 effective August 1, 1967 and: 23.909, 23.1043, 23.1047, 23.1143, 23.1305, 23.1527, 23.1583 as amended through 23-7 and 23.507, 23.509 as amended through 23-14 effective December 20, 1973, 23.2 and 23.561(b)(2) as amended through 23-36 effective September 14/1988; 23.629 is amended through 23-31, effective December 28, 1984; 23.1322 as amended through 23-17 effective February 1, 1977; 23.1321(a) as amended by Equivalent Level of Safety, 23.1401 Amd. 20.

FAR 36 effective December 1/1969, as amended through 36-16.

ICAO/Annex 16, Chapter 10.

For Model AP68TP Series 300 "SPARTACUS"

FAR 23 effective Feb. 1, 1965 including Amendments 23-1 through 23-6, and

23.45 (23-21)	23.853 (23-25)	23.1145 (23-18)
23.49 (23-21)	23.859 (23-27)	23.1155 (23-7)
23.51 (23-21)	23.901 (23-18)	23.1163 (23-14)
23.65 (23-21)	23.903 (23-26)	23.1165 (23-17)
23.67 (23-21)	23.905 (23-26)	23.1182 (23-14)
23.75 (23-21)	23.929 (23-14)	23.1183 (23-15)
23.77 (23-21)	23.937 (23-7)	23.1189 (23-14)
23.141 (23-17)	23.939 (23-18)	23.1203 (23-18)
23.143 (23-17)	23.943 (23-18)	23.1301 (23-20)
23.145 (23-17)	23.951 (23-15)	23.1303 (23-17)
23.149 (23-21)	23.955 (23-7)	23.1305 (23-26)
23.153 (23-14)	23.959 (23-18)	23.1307 (23-23)
23.155 (23-14)	23.977 (23-17)	23.1323 (23-20)
23.157 (23-14)	23.991 (23-26)	23.1337 (23-18)
23.161 (23-21)	23.1013 (23-15)	23.1501 (23-21)
23.173 (23-14)	23.1015 (23-15)	23.1505 (23-7)
23.175 (23-17)	23.1017 (23-14)	23.1521 (23-21)
23.177 (23-21)	23.1019 (23-15)	23.1527 (23-7)
23.181 (23-21)	23.1027 (23-14)	23.1529 (23-26)
23.201 (23-14)	23.1041 (23-7)	23.1541 (23-21)
23.203 (23-14)	23.1043 (23-21)	23.1545 (23-23)
23.205 (23-14)	23.1045 (23-7)	23.1547 (23-20)
23.207 (23-7)	23.1091 (23-7)	23.1549 (23-28)
23.253 (23-26)	23.1093 (23-18)	23.1555 (23-21)
23.335 (23-7)	23.1103 (23-7)	23.1557 (23-23)
23.361 (23-26)	23.1111 (23-17)	23.1581 (23-21)
23.367 (23-7)	23.1121 (23-18)	23.1583 (23-23)
23.371 (23-26)	23.1125 (23-17)	23.1585 (23-23)
23.629 (23-7)	23.1141 (23-18)	23.1587 (23-21)
23.629 (e)(23-23)	23.1143 (23-17)	
23.777 (23-7)		

SFAR 27, effective Feb. 1, 1974, included Amendments 27-1 through 27-4, and FAR 36 effective Dec. 1, 1965, included Amendments 36-1 through 36-12.

Date of application for Type Certification: July 20, 1981.

Amended Type Certificate issued : May 23, 1984.

For Model AP68TP-600 "VIATOR"

FAR 23 effective February 1, 1965 including amendments 23-1 through 23-6, and

23.2	(23-32)	23.726	(23-27)	23.1145	(23-18)
23.3	(23-28)	23.727	(23-7)	23.1155	(23-7)
23.9	(23-17)	23.729	(23-26)	23.1163	(23-14)
23.45	(23-21)	23.733	(23-17)	23.1165	(23-17)
23.49	(23-21)	23.735	(23-34)	23.1182	(23-14)
23.51	(23-21)	23.777	(23-7)	23.1183	(23-15)
23.65	(23-21)	23.785(g)	(23-32)	23.1189	(23-14)
23.67	(23-21)	23.785(h)	(23-32)	23.1203	(23-18)
23.75	(23-21)	23.853	(23-25)	23.1301	(23-20)
23.77	(23-21)	23.859	(23-27)	23.1303	(23-17)
23.141	(23-17)	23.901	(23-18)	23.1305	(23-26)
23.143	(23-17)	23.903	(23-26)	23.1307	(23-23)
23.145	(23-17)	23.905	(23-26)	23.1323	(23-20)
23.149	(23-21)	23.929	(23-14)	23.1337	(23-18)
23.153	(23-14)	23.937	(23-7)	23.1435	(23-14)
23.155	(23-14)	23.939	(23-18)	23.1501	(23-21)
23.157	(23-14)	23.943	(23-18)	23.1505	(23-7)
23.16	(23-21)	23.951	(23-15)	23.1521	(23-21)
23.173	(23-14)	23.955	(23-7)	23.1527	(23-26)
23.175	(23-17)	23.959	(23-18)	23.1529	(23-26)
23.177	(23-21)	23.977	(23-17)	23.1541	(23-21)
23.181	(23-21)	23.991	(23-26)	23.1545	(23-23)
23.201	(23-14)	23.1013	(23-15)	23.1547	(23-20)
23.203	(23-14)	23.1015	(23-15)	23.1549	(23-28)
23.205	(23-14)	23.1017	(23-14)	23.1555	(23-21)
23.207	(23-7)	23.1019	(23-15)	23.1557	(23-23)
23.253	(23-26)	23.1027	(23-14)	23.1581	(23-21)
23.335	(23-7)	23.1401	(23-7)	23.1583	(23-23)
23.361	(23-26)	23.1043	(23-21)	23.1585	(23-23)
23.367	(23-7)	23.1045	(23-7)	23.1587	(23-31)
23.371	(23-26)	23.1091	(23-7)		
23.479	(23-17)	23.1093	(23-18)		
23.507	(23-14)	23.1103	(23-7)		
23.509	(23-14)	23.1111	(23-17)		
23.629	(23-23)	23.1121	(23-18)		
23.723	(23-23)	23.1125	(23-17)		
23.725	(23-7)	23.1141	(23-18)		
		23.1143	(23-17)		

SFAR 27, effective Feb. 1, 1974, included amendment 27-1 through 27-4, and FAR 36 effective Dec. 1, 1965, included amendments 36-1 through 36-12.

Date of application for Type Certificate: July 29, 1986.

Date amended type certificate issued: December 19, 1986.

For Model P.68 "Observer" 2.

FAR 23 effective February 1, 1965, as amended through 23-6 effective August 1, 1967; and, 23.507, 23.509 as amended through 23-14 effective December 20, 1973; 23.2 and 23.561(b)(2) as amended through 23-36 effective September 14, 1988; 23.629 as amended through 23-31 effective December 28, 1984; 23.1322 as amended through 23-17 effective February 1, 1977; 23.1401 as amended through 23-20 effective September 1, 1977; and 23.1321(a) as amended by an Equivalent Level of Safety. FAR 36 effective December 1, 1969, as amended through 36-18.

The Ente Nazionale per l'Aviazione Civile (ENAC) originally type certificated this aircraft under its Type Certificate Number A365. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product under their Type certificate Number A 365 on behalf of Italy.

For Model P.68R

FAR 23 effective Feb. 1, 1965 including Amendments 23-1 through 23-6, plus Amendment 23-7 for 23.561, and Amendment 23-14 for 23.507.

Requirements elected to comply: Amendment 23-7 for 23.725, 23.727, 23.729, 23.735, 23.1435, and Amendment 23-14 for 23.867

FAR 36 effective Dec. 1, 1965, included Amendments 36-1 through 36-28

## Equivalent Level of Safety:

14 CFR part 23, § 23.807(a)(4), Amdt. 23-49 (ref. EASA CRI D-02 issue 3 dated 21 August 2007 "Crew door upgrading to emergency door resulting from emergency window removal")

14 CFR part 23, § 23.783(b), Amdt. 23-6 (ref. EASA CRI D-01 issue 2 dated 18 January 2007 "P.68R crew door installation")

The following list provides specific certification basis requirements for the model P68R:

## S-TEC 55X autopilot

Amendment 23-18, §§ 23.1301, 23.1309, 23.1321, 23.1329, 23.1357, 23.1365, 23.1367, 23.1381, 23.1431. Amendment 23-45 (JAR 23 effective 11 March 1994), §§ 23.29, 23.143, 23.253, 23.601, 23.603, 23.605, 23.607, 23.609, 23.685, 23.689, 23.1529, 23.1581, 23.1583, 23.1585, 23.1589. Amendment 23-49: § 23.1359

## Extension from Standard Range configuration to Long Range Configuration

Amendment 23-7, §§ 23.471, 23.473, 23.477, 23.479, 23.483, 23.485, 23.493. Amendment 23-45 (JAR 23 effective 11 March 1994), §§ 23.601, 23.603, 23.605, 23.609, 23.611, 23.951, 23.959, 23.963, 23.964, 23.967, 23.969, 23.971, 23.975, 23.993, 23.1501, 23.1581, 23.1585

## VLE / VLO increase

Amendment 23-17, § 23.1309. Amendment 23-45 (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

## MTOW increase up to 4548 lb (2063 kg)

14 CFR, part 36 effective December 1, 1969 including Amendments 36-1 through 36-28. Amendment 23-17, §§ 23.572, 23.1323. Amendment 23-45 (JAR 23 effective 11 March 1994), §§ 23.29, 23.143, 23.253, 23.1301, 23.1311, 23.1321, 23.1501, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1549, 23.1559, 23.1581, 23.1583, 23.1585, 23.1589

## Fixed oxygen system kit installation

Amendment 23-9, § 23.1449. Amendment 23-17, § 23.1309. Amendment 23-36, § 23.561. Amendment 23-43, §§ 23.1441, 23.1443, 23.1445. Amendment 23-45 (JAR 23 effective 11 March 1994), §§ 23.601, 23.603, 23.605, 23.625, 23.1357, 23.1367, 23.1501, 23.1529, 23.1541, 23.1581, 23.1583, 23.1585. Amendment 23-49, §§ 23.1447, 23.1451, 23.1453

## Landing gear emergency extension system, nitrogen reservoir replacement

Amendment 23-14, § 23.1435. Amendment 23-17, § 23.1309. Amendment 23-45 (JAR 23 effective 11 March 1994), §§ 23.1501, 23.1529. Amendment 23-54 (JAR 23 effective 01 February 2001), §§ 23.601, 23.603, 23.605

## Garmin G950 Avionics installation

Amendment 23-7, § 23.1323. Amendment 23-17, § 23.1303. Amendment 23-51, §§ 23.25, 23.29, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.623, 23.625, 23.627, 23.771, 23.773, 23.777, 23.1301, 23.1309, 23.1311, 23.1321, 23.1322, 23.1327, 23.1331, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525,

23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1581, 23.1583, 23.1585, 23.1589. Amendment 23-52, § 23.1305. Amendment 23-57, § 23.1308

#### Validation Basis.

Type Certificate A31EU was issued pursuant to FAR 21.29 in validation of the Registro Aeronautico Italiano (RAI) certification of compliance with the aforementioned certification basis, and in accordance with the standard airworthiness certificate provisions of FAR 21.183(c).

Note: The airworthiness provisions of FAR 21.183(d) may be cited as the basis for issuance of standard airworthiness certificates for aircraft imported from a country other than the country of manufacture.

#### Equipment.

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for standard airworthiness certification. In addition, the following items of equipment are required:

- a) Pre-stall warning indicator, Safe Flight Instrument Corp., Type 164 or equivalent.
- b) Partenavia - "RAI approved aircraft Flight Manual":
  1. Model P 68, dated December 7, 1971 (Document No. 97224/T) or later RAI approved revision, or,
  2. Model P 68B, dated May 24, 1974 (Document No. 115.831T) or later RAI approved revision up to S/N 152.
  3. Model P 68, maximum T.O. weight 4321 lb. F/M Suppl. C dated June 25, 1975 (Document No. 124.415/T) (See Note 4).
  4. Model P 68B, S/N 153 and onward; new issue dated May 23, 1978 (Document No. 148.015/T) or later RAI-approved revision.
  5. Model P 68C, dated July 23, 1979 (Document No. 158.229/T Revision 3) or later RAI approved revision.
  6. Models P 68 and P 68B, maximum takeoff weight 4387 lbs. and maximum landing weight 4167 when operated in accordance with AFM Appendix, dated March 23, 1979 (RAI approval No. 156.014/T).
  7.
    - a. Model P 68C-TC, dated April 29, 1980 (Document No. 164.503/T) or later RAI-approved revision.
    - b. Model P 68C-TC dated 26 November 1983 (RAI approved No. 195867/T) or later RAI approved revision.
  8. Model P 68 "OBSERVER" (RAI approval No. 165678/T), with Revision 1 (RAI approval No. 185817/T) or later RAI approved revision.
  9. Model AP68TP Series 300 "SPARTACUS" dated Dec. 9, 1983 (RAI approval No. 196197/T) or later RAI approved revision.
  10. Model P68TC "Observer", dated June 18, 1985 (RAI approved No. 210.866/T) or later RAI approved revision.
  11. Model P68TC "Observer", Doc No. NOR 10.707-4A (S/N 400-04/OTC and subsequent) reissued August 8, 1994 (RAI approval No.94/2721/MAE) or later RAI approved revision.
  12. Model AP68TP-600 "Viator" (RAI approval No. 250540/T for aircraft up to s/n 9004, and RAI approval No. 265727/SMCA for aircraft from s/n 9005 up to s/n 9010) or later RAI approved revision.
  13. Model P68 Observer 2 dated November 30, 1989 (RAI approval No. 260429/SCMA) or later RAI approved revision.
  14. Model P.68R dated February 2, 2009 (EASA approval No. EASA.A.A.01887) or later EASA approved revision.
  15. Model AP68TP-600 "Viator" (EASA approval No. 10051648) or later EASA approved revision.

#### Import requirements

The FAA can issue a U.S. airworthiness certificate based on an NAA Export Certificate of Airworthiness (Export C of A) signed by a representative of the the Ente Nazionale per l'Aviazione Civile (ENAC) on behalf of the European Community. The Export C of A should contain the following statement "The aircraft covered by this certificate

has been examined, tested, and found to comply with EASA TC No. A.385 approved under U.S. Type Certificate No. A 31EU and to be in a condition for safe operation”.

Country other than Manufacturer (U.S. bilateral agreement and the original Export Certificate of Airworthiness issued by the country of manufacture must exist): A U.S. airworthiness certificate may be issued on the basis of a log book certifying statement endorsed by an authorized representative of the civil aviation authority of the exporting country. It is incumbent upon the exporting civil aviation authority to determine that the certifying statement includes evidence of acceptable service history and modification deviations and the following statement: "The aircraft covered by this certificate has been examined, tested, inspected in accordance with the provisions of FAR 21.183(d) or its equivalent, and found to conform to the type design approved under Type Certificate A31EU and is in a condition for safe operation".

For issuance of an airworthiness certificate in accordance with 14 CFR Part 21.183(c), The Ente Nazionale per l'Aviazione Civile of Italy must certify that the airplane conforms to the type design and is in a condition for safe operation. The Ente Nazionale per l'Aviazione Civile of Italy will certify that the airplane complies with all applicable mandatory continuing airworthiness information (MCAI) it has issued.

#### Service Information

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before September 28, 2003- by the Ente Nazionale per l'Aviazione Civile (ENAC). (These approvals pertain to the design data only).”

- Service Bulletins
- Structural Repair Manuals
- Vendor Manuals
- Aircraft Flight Manuals, and
- Overhaul and Maintenance Manuals

The FAA accepts such documents and considers them FAA-approved unless one of the following condition exists:

- The documents change the limitations, performance, or procedures of the FAA approved manuals; or
- The documents make an acoustical or emissions changes to this product's U.S.type certificate as defined in 14 CFR § 21.93.

The FAA uses the post type validation procedures to approve these documents. The FAA may delegate on case-by-case to EASA to approve on behalf of the FAA for the U.S. type certificate. If this is the case it will be noted on the document.

NOTE 1. Current weight and balance report including list of equipment in certificated empty weight, and loading instructions, must be provided for each aircraft at the time of original airworthiness certification.

All P68 models: the certificated empty weight and corresponding center of gravity location must include undrainable oil (1.0 lb. at +4.0), and unusable fuel (30 lb. at +30.3). (See NOTE 6 and 16)  
AP68TP Series 300 "SPARTACUS" and AP68TP-600 "VIATOR": The certificated empty weight and corresponding center of gravity location must include undrainable oil (1.0 lbs at -15.75 inches) and unusable fuel (13.0 lbs at 34.25 inches).

NOTE 2. a) The following placards must be displayed in full view of the 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".  
In addition, all placards required in the "RAI-approved Airplane Flight Manual" must be installed in the appropriate location.

- b) Each individual airplane must be equipped with a placard that specifies the kind of operation such as VFR, or IFR, DAY or NIGHT, to which the operation of the airplane is limited by the equipment installed.
- c) Avoid continuous operation between 2100 rpm and 2350 rpm (for IO-360-A1B engine only).

NOTE 3. All the service life limits, overhaul limits, instructions for continued airworthiness, airworthiness limitations, special inspections and mandatory maintenance requirements that are published on Partenavia/Vulcanair Aircraft Maintenance Manuals have been approved by RAI in the '80 and '90 as shown below and are considered FAA approved:

For P.68, P.68B, P.68C, P.68C-TC, P.68 Observer: RAI Approval No. 226.078/T dated 23 December 1986 – RAI Approval No. 94/1365/MAE dated 27 April 1994 – RAI Approval No. 99/2246/MAE dated 09 June 1999

For AP68TP-300 "Spartacus": RAI Approval No. 285.158/MAE dated 11 December 1992

For P.68TC Observer: RAI Approval No. 95/4.295/MAE dated 18 December 1995 – RAI Approval No. 99/2246/MAE dated 09 June 1999

For P.68 Observer 2: RAI Approval No. 275962/SCMA dated 23 September 1991 - RAI Approval No. 94/1365/MAE dated 27 April 1994 – RAI Approval No. 99/2246/MAE dated 09 June 1999

For AP68TP-600 "Viator": RAI Approval No. 224.168/T dated 16 October 1986 – EASA Approval dated April 2005

These airworthiness limitations may not be changed without FAA-approval.

NOTE 4. The maximum T.O. weight can be increased up to 4321 lb., provided that Service Bulletin No. 21 is applied. With the weight of 4321 lb., the airspeed limits are (CAS):

Never exceed	193 Knots
Maximum structural cruising	153 Knots
Maneuvering	125 Knots
Flaps extended (35°)	99 Knots
Minimum single engine control speed	60 Knots

and the C.G. range is:  
 (+12.8 in.) to (+20.7 in.) at 4321 lb.  
 (+10.2 in.) to (+20.7 in.) at 3527 lb. and less.  
 Straight line variation between points.

NOTE 5. The number of seats is 7 (3 passengers on bench-seat at +34.2 in.) for the airplane that incorporates the Service Bulletin Partenavia No. 29.

NOTE 6. For the airplane equipped with integral auxiliary fuel wing tanks the fuel capacity is as follows:  
 153 gal. (2 main wing tanks 54 gal. each at +30.3 in. 2.5 gal. unusable per tank)  
 45.0 gal. (2 auxiliary wing tanks 22.5 each at +30.3 with 1 gal. unusable per tank).

NOTE 7. For Model P.68 and P.68B equipped with Partenavia Kit P/N 68-015 the fuel capacity is:  
 142 gallons total (2 wing tanks 71 gallon each 30.2 in.)  
 2.5 gallon unusable per tank.

NOTE 8. For Model P.68C-TC and P.68TC "Observer", operation below 2,400 r.p.m. at manifold pressure above 36 in. Hg. is prohibited.

NOTE 9. The P.68C-TC, S/N 208-01TC, is approved with standard and with auxiliary fuel tanks of Model P 68B. See NOTE 6 for total capacity and unusable fuel.

NOTE 10. Crew doors for Models P.68C and P.68C-TC are approved when installed per RAI-approved Partenavia Drawing No. 2.2503. For the affected airplanes, the airplane Flight Manual must include the "Supplement I - Crew Door", RAI approval No. 199.649/T April 17, 1984.

NOTE 11. The following optional equipment and systems are available:  
 - bubble nose for weather radar installation.

- wheel fairing
- integral auxiliary fuel tank.
- Oversized nose wheel with strengthened wheel fork.

NOTE 12. For the airplane equipped with integral auxiliary fuel wing tanks the fuel capacity is as follows:  
 142 gal. (2 main wing tanks 71 gallons each at 30.2 inch 2.5 gal. Unusable per tank).  
 42 gal. (2 auxiliary wing tanks 21 gal. each at 30.2 inc. with 2 gal. Unusable per tank).

NOTE 13. P.68 Observer aircraft models (S/N's through 383) equipped with Kit P/N 68/051 as per S.B. 79, can be operated with Increased Maximum Take-Off Weight of 4594 lbs and Maximum Landing Weight of 4365 lbs.  
 For those modified aircraft, the Operating Limitations are changed as follows:

Airspeed Limits (CAS).

Never exceed	194 Kts
Max. Structural Cruise	154 Kts
Maneuvering	132 Kts
Flaps extended:	
- 35° flaps	103 Kts
Minimum single engine speed	58 Kts

C.G. Range. Rearward Limits:  
 - 18.92 in. (0,481 m) aft of Datum (31% MAC) at all weights.  
 Forward Limits:  
 - 13.81 in. (0,351 m) aft of Datum (22.45% MAC) at Ramp Weight of 4630 Lbs (2100 Kg).  
 - 13.71 in. (0,348 m) aft of Datum (22.45% MAC) at Maximum Take-Off Weight of 4594 Lbs (2084 Kg).  
 - 10.25 in. (0,260 m) aft of Datum (16.77% MAC) at 3527 Lbs (1600 Kg) or less with straight line variation between these points.

Weight Limits.

Max. Ramp Weight	4630 Lbs (2100 Kg)
Max. Take-Off Weight	4594 Lbs (2084 Kg)
Max. Landing Weight	4365 Lbs (1980 Kg)
Max. Zero Fuel Weight	4167 Lbs (1890 Kg)

For aircraft equipped with Kit P/N 68/051 as per S.B. 79, supplement N (RAI Approval No. 227.006/SCMA dated November 11, 1991) must be attached to the RAI Approved Flight Manual.

NOTE 14. P.68C aircraft models equipped with Kit P/N 68/051 as per S.B. 79, can be operated with Increased Maximum Take-Off Weight of 4594 Lbs and Maximum Landing Weight of 4365 Lbs.  
 For those modified aircraft, the Operating Limitations are changed as follows:

Airspeed Limits (CAS).

Never exceed	194 Kts
Max. Structural Cruise	154 Kts
Maneuvering	132 Kts
Flaps extended:	
- 15° flaps	152 Kts
- 35° flaps	103 Kts
Minimum single engine speed	60 Kts

C.G. Range. Rearward Limits:  
 - 18.92 in. (0,481 m) aft of Datum (31% MAC) at all weights.  
 Forward Limits:  
 - 12.80 in. (0,325 m) aft of Datum (20.97% MAC) at Ramp Weight of 4630 Lbs (2100 Kg).  
 - 12.60 in. (0,320 m) aft of Datum (21.16% MAC) at Maximum Take-Off Weight of 4594 Lbs (2084 Kg).

- 9.06 in. (0,230 m) aft of Datum (14.84% MAC) at 3704 Lbs (1680 Kg) or less with straight line variation between these points.

Weight Limits.

Max. Ramp Weight	4630 Lbs (2100 Kg)
Max. Take-Off Weight	4594 Lbs (2084 Kg)
Max. Landing Weight	4365 Lbs (1980 Kg)
Max. Zero Fuel Weight	4167 Lbs (1890 Kg)

For aircraft equipped with Kit P/N 68/051 as per S.B. 79, supplement N (RAI Approval No. 277.978/SCMA dated December 23, 1991) must be attached to the RAI Approved Flight Manual.

NOTE 15.

P.68 Observer (S/N's through 383) and P.68C aircraft models equipped with Kit P/N 68-050 as per S.B. 78, can be operated with optional Auxiliary Fuel Tank System to increase total fuel capacity to 184 US Gals (696 Lts) as detailed below:

- 2 wing integral main fuel tanks of 71 US Gals (269 Lts) each at 30.3 in. (0,77 m).  
Unusable fuel = 2.4 US Gals (9 Lts) for each tank.

- 2 wing integral auxiliary fuel tanks of 21 US Gals (79 Lts) each at 30.3 in. (0,77 m).  
Unusable fuel = 1 US Gal (4 Lts) for each tank.

For aircraft equipped with optional Auxiliary Fuel Tank System, supplement L/1 (RAI Approval No. 227.006/SCMA dated November 11, 1991 for P68 Observer a/c model and RAI Approval No. 277.978/SCMA dated December 23, 1991 for P68C a/c model) must be attached to the RAI Approved Flight Manual.

NOTE 16.

P.68TC "Observer" aircraft models modified as per MOD.OBTC/01, can be operated with optional Auxiliary Fuel Tank System to increase total fuel capacity to 184 US Gals (696 Lts) as detailed below:

- 2 wing integral main fuel tanks of 71 US Gals (269 Lts) each at 30.3 in. (0,77 m).  
Unusable fuel = 2.4 US Gals (9 Lts) for each tank.

- 2 wing integral auxiliary fuel tanks of 21 US Gals (79 Lts) each at 30.3 in. (0,77 m).  
Unusable fuel = 1 US Gal (4 Lts) for each tank.

For aircraft equipped with optional Auxiliary Fuel Tank System, supplement L (RAI Approval No. 94/2721/MAE dated August 8, 1994) must be attached to the RAI Approved Flight Manual.

NOTE 17.

P.68TC "Observer" models (S/N 400-04/OTC and subsequent) models modified per MOD.OBTC/02 Revision 1 are approved with a Cabin Forced Air Heating System Installation.

NOTE 18.

P.68R aircraft modified as per MOD P68/151 or applying Vulcanair SB 198 are approved for a Maximum Take-Off Weight of 4548 lb.

For those modified aircraft, the Operating Limitations are changed as follows:

Airspeed Limits (CAS).

Never exceed	197 kts
Max. Structural Cruise	157 kts
Maneuvering	127 kts
Flap extended - $V_{FE}$ (35°)	101 kts
Min. single engine speed	60 kts
Max. landing gear extended VLE	131 kts
Max. landing gear operating (extension)	131 kts
Max. landing gear operating (retraction)	112 kts

C.G. Range. (+13.54 in.) to (+20.7 in.) at 4548 lb.  
 (+10.2 in.) to (+20.7 in.) at 3527 lb. and less  
 Straight line variation between points.

Weight Limits. Max. Take-Off Weight 4548 lb  
 Max. Landing Weight 4321 lb  
 Max. Zero Fuel Weight 4321 lb

NOTE 19. P.68R aircraft models modified by Type Design Change No. MOD.P68/150, can be operated with optional Auxiliary Fuel Tank System to increase total fuel capacity to 184 US Gals (696 Lts) as detailed below:

- 2 wing integral main fuel tanks of 71 US Gals (269 Lts) each at 30.3 in. (0,77 m).  
 Unusable fuel = 2.4 US Gals (9 Lts) for each tank.

- 2 wing integral auxiliary fuel tanks of 21 US Gals (79 Lts) each at 30.3 in. (0.77 m).  
 Unusable fuel = 1 US Gals (4 Lts) for each tank.

NOTE 20. AP68TP-600 Viator aircraft from s/n 9005 onwards are approved for a Maximum Take-Off Weight of 6614 lb.  
 For those modified aircraft, the Operating Limitations and Technical Characteristics are changed as follows:

Airspeed Limits (CAS). Maximum operating speed: VMO = 200 kts (up to 15000 ft)  
 VMO = 164 kts (at 25000 ft)  
 Straight line variation between these points  
 Maneuvering: VA = 141 kts  
 Flap extended (full) VFE = 131 kts  
 Gear Operation VLO = 150 kts  
 Gear Extended VLE = 150 kts  
 Minimum single engine VMC = 79 kts

C.G. Range. (+15.94 in.) to (+20.16 in.) at 6669 lb.  
 (+15.75 in.) to (+20.16 in.) at 6614 lb.  
 (+9.58 in.) to (+20.16 in.) at 4740 lb. and less  
 Straight line variation between points.

Weight Limits. Ramp: 6669 lb  
 Take-off: 6614 lb  
 Landing: 6283 lb  
 Zero Fuel: 5622 lb

Control Surface Movements.

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

Noise requirements. FAR 36 effective Dec. 1, 1965, included Amendments 36-1 through 36-28  
 ICAO Annex 16, Chapter 10

NOTE 21. Approved major changes on Vulcanair P.68 are:

Major Change, Level 1, Vulcanair MOD P68/123 – “Sagem Avionics Integrated Cockpit Installation IFR”

Applicability: Vulcanair P.68C, P.68C-TC, P.68TC Observer, P.68 Observer 2

Major Change, Level 2, Vulcanair MOD P68/86 – “S-TEC 55X Autopilot Installation”  
 Applicability: Vulcanair P68 Series

Major Change, Level 1, Vulcanair MOD P68/240 – “Garmin 950 Avionics Installation”  
 Applicability: Vulcanair P.68 Observer 2, P.68C, P.68C-TC, P.68TC Observer and P.68R

Major Change, Level 2, Vulcanair MOD P68/302 – “Installation of MidContinent MD302 Standby Module and activation of TAWS-B and SVS on P.68 Series.” Applicability: Vulcanair P.68C, P.68C-TC and P.68R , SS/NN 469 onwards and SS/NN 458, 463, 465, 466 having incorporated Major Change, Level 1, Vulcanair MOD P68/240.

Major Change, Level 1, Vulcanair MOD P68/266 – “Installation of Garmin G950 avionic system and replacement of existing autopilot with S-Tec 2100 model”

Applicability: Vulcanair AP68TP-600 “Viator”

Certification Basis:

Amendment 23-17, § 23.143

Amendment 23-26, § 23.253

Amendment 23-51, §§ 23.25, 23.29, 23.301, 23.303, 23.305, 23.307, 23.395, 23.397, 23.405, 23.561, 23.601, 23.603, 23.605, 23.607, 23.609, 23.611, 23.613, 23.619, 23.623, 23.625, 23.627, 23.671, 23.677, 23.685, 23.689, 23.729, 23.771, 23.773, 23.777, 23.867, 23.963, 23.1301, 23.1303, 23.1309, 23.1311, 23.1321, 23.1322, 23.1323, 23.1325, 23.1327, 23.1329, 23.1331, 23.1335, 23.1337, 23.1351, 23.1353, 23.1357, 23.1359, 23.1361, 23.1365, 23.1367, 23.1381, 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541, 23.1543, 23.1545, 23.1547, 23.1549, 23.1553, 23.1555, 23.1581, 23.1583, 23.1585, 23.1589

Amendment 23-52, § 23.1305

Amendment 23-57, § 23.1308

NOTE 22.

Major Level 2 Change with approval for FAR23.1308 Amdt 57-

“Mod P68/157- Replacing Crossbow AHRS 500 GA with Axitude AX1-200 in SAGEM glass cockpit installation (IFR)

Applicability: Vulcanair S.p.A. P68C, P68C-TC, P68TC Observer, P68 Observer 2.

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