



NEMETH DESIGNS

***PARTENAVIA  
PB88  
VICTOR***

FOR MS FLIGHT SIMULATOR



The P68 is a normal category aircraft, aerobatic maneuvers are prohibited. When above 130 kts the controls must not be fully deflected. The standard airplane is approved for day and night operations under VFR conditions. Flying into icing conditions is not approved.

## AIRFRAME

The P68C is a twin-engine high-wing monoplane. The airframe is mainly of all-metal construction, with tail cone, fairings and wing tips made of fiberglass. The fuselage is a semi-monocoque structure with rivetted skin, the fully cantilevered wing and empennage are both of all metal, stressed-skin construction. The tail unit is composed of a swept-back vertical stabilizer and rudder, with an all moving tailplane. Trim tabs are on both rudder and stabilator trailing edge. Both ailerons and flaps are of all metal construction.

The fixed tricycle landing gear has cantilever spring steel main legs and an oleo-pneumatic shock absorber nose gear, which is steerable through the rudder pedals. The steering system automatically disengages when the nose wheel clears the ground. Brakes are hydraulically actuated through the rudder pedal tips.

The cabin may be accessed through the door under the left wing and the forward right-side crew door. The aft baggage compartment is accessed through the rear door on the right side of the fuselage. The crew door also functions as an emergency exit, and is equipped with a solenoid operated locking plunger that prevents the door from opening while the right-hand engine is running and the propeller is turning. Two different seating arrangements are available: "Club" seating with the two middle seats facing aft, and the "Commuter" arrangement with all seats facing forward. To give the aircraft a continuous metal surface, lightning strike bonding is fitted between fiberglass and metal components.

## ENGINE

The P68C is powered by two Lycoming 10-360-A186 engines, which are air-cooled, four cylinder, normally aspirated fuel-injected units with direct propeller drive. Baffles are fitted to direct cooling air through the engine compartment. The Dual Ignition system comprises two mechanically driven magnetos, a shielded wiring harness, and spark-plugs. Fuel injection is ensured by an engine driven fuel pump that feeds the fuel injector. The fuel injector senses the air in the manifold, compares it to external static air pressure, and then sends fuel at the correct pressure to the distributor, and then to a fuel nozzle in the air intake close to the cylinders. The air is fed through the manifold ducting after being filtered. An alternate air system is also fitted between the filter and the manifold intake to prevent ice build-up. The engine lubrication system consists of a wet sump, engine driven oil pump, an oil filter and an oil cooler. Engines drive Hartzell two bladed, constant speed, fully feathering metal propellers. Propeller speed is maintained constant by a governor that controls the engine oil pressure being fed to the pitch change mechanism. The engines and propellers are operated by three sets of control levers mounted on the control pedestal below and at the center of the instrument panel. Controls are (from left to right): power levers, propeller speed levers and mixture control levers. The alternate air controls are located on the instrument panel.

## FLIGHT CONTROLS

Flight controls are of a conventional type, operated by dual control wheels and rudder pedals. The horizontal tail is entirely mobile (stabilator). The control wheel operates the ailerons and the stabilator. The rudder pedals operate the rudder and the nose wheel steering. A typical control wheel incorporates switches associated with autopilot operation, electrical trim and communications. Secondary controls are provided by the stabilator and rudder trim tabs. Stabilator trim is operated by a wheel, located on the left side of the control pedestal. The rudder trim wheel is located on the aft of the control pedestal. An indicator showing trim tab position is mounted close to each trim control wheel. The flaps, one on each wing, are operated by an electric motor mounted in the right wing box. This motor is connected to a drive pulley which operates the right wing flap through a push-pull rod, and the left wing drive pulley through cables. Flap operation is controlled by a switch mounted on the lower part of the pedestal, while flap position is mechanically/electrically transmitted to the indicator located next to this switch. The brakes are hydraulically operated by individual hydraulic brake cylinders mounted on the rudder pedals. To operate the brakes, apply pressure against the top of the rudder pedals.

## ELECTRICAL SYSTEM

The aircraft system is powered by two 130 A alternators. A 24 volt, 24 A/h battery provides for engine starting and as a reserve power source in case of alternator power loss. The electrical system is controlled by three switches, located on the pilot's left side panel. Avionic systems power is controlled by one switch located on the pilot's left side panel. The electrical system may be monitored through a volt and amp indicator located also on the pilot's left side panel. Lighting includes standard navigation lights, landing/taxi lights on the left wing leading edge and one tail anti-collision light. Cabin lighting consists of four reading lights, each with its own switch. Cockpit lighting consists of two map lights, instrument panel lighting and one main panel light. Other electrical systems include pitot heat, propeller heat, windshield heater, a stall warning horn, and dimming rheostat switches to control instrument panel lighting.

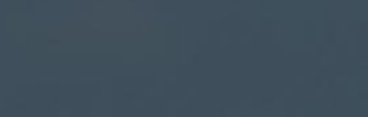
## SPECIFICATIONS

Aileron travel: 20° UP / 15° DOWN  
 Flap movement: 37° in three segments  
 Rudder travel: +/- 22°  
 Overall wingspan: 12.00 m (39.37 ft)  
 Overall length: 3.35 m (30.68 ft)  
 Overall height: 3.7 m (11.15 ft)  
 Wing area: 18.60 m<sup>2</sup> (200.2 ft<sup>2</sup>)  
 Aileron area: 1.75 m<sup>2</sup> (18.90 ft<sup>2</sup>)  
 Flap area: 2.42 m<sup>2</sup> (16.00 ft<sup>2</sup>)  
 Elevator area: 3.85 m<sup>2</sup> (41.4 ft<sup>2</sup>)  
 Rudder area: 2.02 m<sup>2</sup> (21.80 ft<sup>2</sup>)  
 Number of engines: 2 x Lycoming 10-360A-1  
 Rated horsepower: 200  
 Propellers: 2 x Constant speed, fully feathering, non-reversible, hydraulically operated

Propeller diameter: 72 inch / 1.83 meter  
 Normal engine RPM: 550-2700  
 Range: 1300 km (700 nm)  
 Service ceiling: 5852 m (19200 feet)  
 VNE (never exceed): 370 km/h (200 knots)  
 Max flap speed: 290 km/h (157 knots) @15°  
 187 km/h (101 knots) @ 35°

Cruise speed: 292 km/h (158 knots)  
 Manoeuvring speed: 240 km/h (130 knots)  
 Stall speed: 115 km/h (62 knots)  
 Minimum single engine: 115 km/h (62 knots)  
 Maximum rate of climb: 7.32 m/s (~1460 ft/min)  
 Optimal sink rate: 2.53 m/s (~500 ft/min)  
 Roll rate: 40 degrees

Takeoff distance: 307 m (1008 feet)  
 Landing distance: 248 m (816 feet)  
 Empty weight: 1230 kg (2.712 lbs)  
 Max. takeoff weight: 1.990 kg (4.387 lbs)  
 Standard fuel capacity: 392 L (103 gallons)  
 Long range fuel capacity: 696 L (184 gallons)  
 Fuel type: Avgas  
 Cruise fuel flow: 0-22 gallons/hour  
 Normal manifold pressure: 10 – 32 InHg



## COCKPIT LAYOUT



### OVERHEAD PANELS



- |                                                                         |                                          |                                      |
|-------------------------------------------------------------------------|------------------------------------------|--------------------------------------|
| 1. Generator fail warning lights                                        | 33. Left engine exhaust gas temperature  | 59. Cabin air heaters                |
| 2. Marker beacon indicator lights                                       | 34. Right engine exhaust gas temperature | 60. Ammeter and voltmeter            |
| 3. Distance measuring equipment                                         | 35. Autocontrol Roll hold engage         | 61. Right generator                  |
| 4. Advisory lights                                                      | 36. Autocontrol Heading hold engage      | 62. Battery                          |
| 5. Compass adjustment                                                   | 37. Autocontrol Altitude hold engage     | 63. Left generator                   |
| 6. Radio altimeter                                                      | 38. Autocontrol Pitch hold engage        | 64. Ammeter/voltmeter switch         |
| 7. Stall warning light                                                  | 39. Autocontrol Roll adjustment          | 65. Avionics master switch           |
| 8. Indicated airspeed (knots)                                           | 40. Autocontrol Pitch adjustment         | 66. Throttle levers                  |
| 9. Artificial horizon indicator                                         | 41. Yoke hider clickspot                 | 67. Propeller pitch levers           |
| 10. Altimeter (feet)                                                    | 42. Parking brake lever                  | 68. Fuel mixture levers              |
| 11. VOR2 indicator                                                      | 43. Flaps adjust lever                   | 69. Elevator trim position indicator |
| 12. Clock                                                               | 44. Flaps position indicator             | 70. Elevator trim adjust wheel       |
| 13. Engine suction indicator                                            | 45. Propeller heater                     | 71. Aileron trim position indicator  |
| 14. Turn and slip indicator                                             | 46. Windshield heater                    | 72. Aileron trim adjust wheel        |
| 15. Horizontal situation indicator                                      | 47. Anti-collision light                 | 73. Left fuel tank feed adjust knob  |
| 16. Vertical speed indicator (foot/minute)                              | 48. Taxi light                           | 74. Right fuel tank feed adjust knob |
| 17. ADF indicator                                                       | 49. Landing light                        | 75. Auxiliary fuel pump light        |
| 18. COM1 frequency setting                                              | 50. Pitot heater                         | 76. Left engine starter light        |
| 19. NAV1 frequency setting                                              | 51. Light dimmer knobs                   | 77. Right engine starter light       |
| 20. COM2 frequency setting                                              | 52. Instrument lights                    | 78. Right auxiliary fuel pump light  |
| 21. NAV2 frequency setting                                              | 53. Position lights                      | 79. Left auxiliary fuel pump switch  |
| 22. ADF radio                                                           | 54. Strobe lights                        | 80. Left engine starter button       |
| 23. Transponder                                                         | 47. Generator                            | 81. Engine 1 left magneto switch     |
| 24. Audio panel                                                         | 48. Battery                              | 82. Engine 1 right magneto switch    |
| 25. Manifold pressure dual gauge                                        | 49. Starter switch                       | 83. Right engine starter switch      |
| 26. Fuel quantity indicator                                             | 50. Magnetos switch                      | 84. Right auxiliary fuel pump switch |
| 27. Tachometer dual gauge                                               | 51. Carburetor heater adjustment knob    | 85. Engine 2 left magneto switch     |
| 28. Left engine oil temperature, oil pressure and cylinder temperature  | 52. Throttle lever                       | 86. Engine 2 right magneto switch    |
| 29. Right engine oil temperature, oil pressure and cylinder temperature | 53. Fuel mixture lever                   |                                      |
| 30. Fuel pressure dual gauge                                            | 54. Instrument light dimming knob        |                                      |
| 31. Fuel flow dual gauge                                                | 55. Garmin GNS430 GPS                    |                                      |
| 32. Artificial horizon indicator                                        | 56. Autocontrol engage-disengage         |                                      |
|                                                                         | 57. Emergency signal transmitter         |                                      |
|                                                                         | 58. Alternator heaters                   |                                      |

**Notes:**  
 Press the adjusting knob on the **transponder** once to change which local of the numbers to be adjusted.  
 The **autocontrol** can be activated with the yoke button. Establish a stable cruise before activating any autocontrol axis.

**NOTE:** Please set the flight model to **MODERN** at the realism settings in the options menu otherwise the airplane won't function properly. Legacy flight model is **NOT** supported.