RGE

COSTRUZIONI AERONAUTICHE TECNAM

FLIGHT MANUAL

US-LSA

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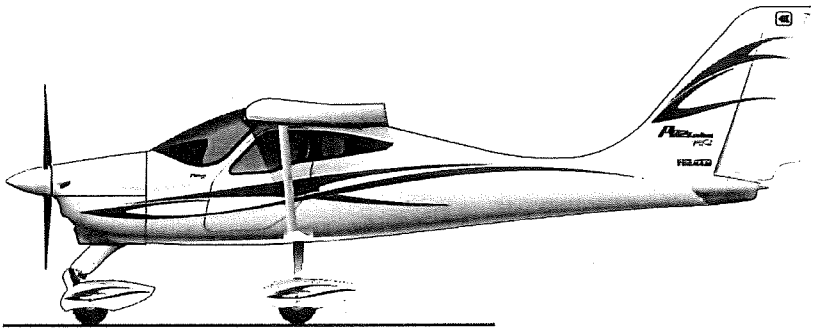

P92 Echo MK2

Manufacturer

COSTRUZIONI AERONAUTICHE TECNAM S.p.A.

Serial number: 165 F

Build year: 2021

Registration: ZK-RGE

Introduction

This manual contains information to be furnished to the pilot as required by the FAA in addition to further information supplied by the manufacturer.
This manual must always be present on board the aircraft.
The aircraft is to be operated in compliance with information and limitations contained herein. All sections follow the ASTM guidelines.

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Record of Revisions

Any revisions to the present Manual, except actual weighing data, must be recorded in the following table. New or amended text in the revised pages will be indicated by a black vertical line in the left-hand margin;

Log of Revisions

Revision No.	Date released	Chapters	Approved By
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List of Effective Pages

Page	Rev.
9 thru 22 25, 27 thru 39, 41 thru 71 S01-1 thru 3	0
23, 24	1
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WARNINGS - CAUTIONS - NOTES
The following definitions apply to warnings, cautions and notes used in the Flight Manual.

WARNING
Means that the non-observation of the corresponding procedure leads to an immediate or important degradation of the flight safety

CAUTION
Means that the non-observation of the corresponding procedure leads to a minor or to a more or less long-term degradation of the flight safety

NOTE
Draws the attention to any special item not directly related to safety but which is important or unusual.

Abbreviations & Terminology

Airspeed Terminology

KCAS	Calibrated Airspeed is the indicated airspeed corrected for position and instrument error and expressed in knots.
KIAS	Indicated Airspeed is the speed shown on the airspeed indicator and expressed in knots.
KTAS	True Airspeed is the airspeed expressed in knots relative to undisturbed air, which is KCAS, corrected for altitude and temperature.
V_A	Design maneuvering speed
V_C	Design cruising speed is the speed above the which it is not allowed to make full or abrupt control movement
V_{FE}	Maximum Flap Extended Speed is the highest speed permissible with wing flaps in a prescribed extended position.
V_H	Max Speed in level flight with Max continuous power
V_{LO}	Lift off speed: is the speed at which the aircraft generally lifts off from the ground.
V_{NE}	Never Exceed Speed is the speed limit that may not be exceeded at any time.
V_{NO}	Maximum Structural Cruising Speed is the speed that should not be exceeded except in smooth air, then only with caution.
V_S	Stalling Speed or minimum steady flight speed flaps retracted
V_{S0}	Stalling speed or minimum steady flight speed in landing configuration
V_{S1}	Stalling speed in clean configuration (flap 0°)
V_X	Best Angle-of-Climb Speed is the speed, which results in the greatest gain of altitude in a given horizontal distance.
V_Y	Best Rate-of-Climb Speed is the speed, which results in the greatest gain in altitude in a given time.
V_R	Rotation speed: is the speed at which the aircraft rotates about the pitch axis during takeoff.

Meteorology Terminology

OAT	Outside Air Temperature is the free air static temperature expressed in degrees Celsius (°C).
T_S	Standard Temperature is 15°C (59°F) at sea level pressure altitude and decreased by 2°C for each 1000 ft of altitude.
H_P	Pressure Altitude is the altitude read from an altimeter when the barometric subscale has been set to 29.92"

Engine Power Terminology

RPM	Revolutions Per Minute: is the number of revolutions per minute of the engine.

Airplane Performance and Flight Planning Terminology

Crosswind Velocity	is the velocity of the crosswind component for which adequate control of the airplane during takeoff and landing is guaranteed
Usable fuel	is the fuel available for flight planning
Unusable fuel	is the quantity of fuel that cannot be safely used in flight
g	is the acceleration of gravity

Weight and Balance Terminology

Datum	"Reference datum" is an imaginary vertical plane from which all horizontal distances are measured for balance purposes
Arm	is the horizontal distance from the reference datum to the center of gravity (C.G.) of an item
Moment	is the product of the weight of an item multiplied by its arm
C.G.	Center of Gravity is the point at which the airplane, or equipment, would balance if suspended. Its distance from the reference datum is found by dividing the total moment by the total weight of the airplane
Empty Weight	Empty Weight is the weight of the airplane with engine fluids and oil at operating levels
Useful Load	is the difference between takeoff weight and the empty weight
Maximum Takeoff Weight	is the maximum weight approved for the start of the takeoff run
Maximum Landing Weight	is the maximum weight approved for the landing touch down
Tare	is the weight of chocks, blocks, stands, etc. used when weighing an airplane, and is included in the scale readings; tare is then deducted from the scale reading to obtain the actual (net) airplane weight

Unit Conversion Chart

Multiplying		by →	Yields	
Temperature				
Fahrenheit	[°F]	$\frac{5}{9}\cdot(F-32)$	Celsius	[°C]
Celsius	[°C]	$\left(\frac{9}{5}\cdot C\right)+32$	Fahrenheit	[°F]
Forces				
Kilograms	[kg]	2.205	Pounds	[lbs]
Pounds	[lbs]	0.4536	Kilograms	[kg]
Speed				
Meters per second	[m/s]	196.86	Feet per minute	[ft/min]
Feet per minute	[ft/min]	0.00508	Meters per second.	[m/s]
Knots	[kts]	1.852	Kilometers / hour	[km/h]
Kilometers / hour	[km/h]	0.5396	Knots	[kts]
Pressure				
Atmosphere	[atm]	14.7	Pounds / sq. in	[psi]
Pounds / sq. in	[psi]	0.068	Atmosphere	[atm]
Length				
Kilometers	[km]	0.5396	Nautical miles	[nm]
Nautical miles	[nm]	1.852	Kilometers	[km]
Meters	[m]	3.281	Feet	[ft]
Feet	[ft]	0.3048	Meters	[m]
Centimeters	[cm]	0.3937	Inches	[in]
Inches	[in]	2.540	Centimeters	[cm]
Volume				
Liters	[l]	0.2642	U.S. Gallons	[US Gal]
U.S. Gallons	[US Gal]	3.785	Liters	[l]
Area				
Square meters	[m^2]	10.76	Square feet	[sq ft]
Square feet	[sq ft]	0.0929	Square meters	[m^2]
Torque				
foot-pounds		1.3558	Newton-meters	
foot-pounds		0.1383	kilogram-meters	
foot-pounds		12.0	inch-pounds	
inch-pounds		0.0115	kilogram-meters	
inch-pounds		0.1130	Newton-meters	
inch-pounds		0.0833	foot-pounds	
kilogram-meters		7.233	foot-pounds	
kilogram-meters		86.7964	inch-pounds	
kilogram-meters		9.8067	Newton-meters	
Newton-meters		0.7376	foot-pounds	
Newton-meters		8.8508	inch-pounds	
Newton-meters		0.1020	kilogram-meter	

SECTION 1
GENERAL

1.1 Introduction

The P92 is a twin seat, single engine light aircraft with a strut braced high wing and tricycle fixed landing gear with steerable nose wheel.
It is an ASTM compliant airplane designed to be flown by sport pilot rated pilots as well as higher rated pilots.
This aircraft is designed and built in Italy and as such, was built using the metric system. Therefore, the primary numbers are in metric and the US conversion is in parenthesis for your information.
This Flight Manual has been prepared to ASTM standards to provide pilots and instructors with information for the safe and efficient operation of this aircraft.

This Flight Manual contains the following sections:

1. General Information
2. Operating Limitations
3. Weight & Balance
4. Performance
5. Emergency Procedures
6. Normal Procedures
7. Aircraft Ground Handling and Servicing
8. Required Placards and Markings

1.2 Certification Basis

This aircraft is certificated as a Special Light Sport Aircraft under FAR part 21.190 and complies with all applicable ASTM standards.

THREE VIEW DRAWING

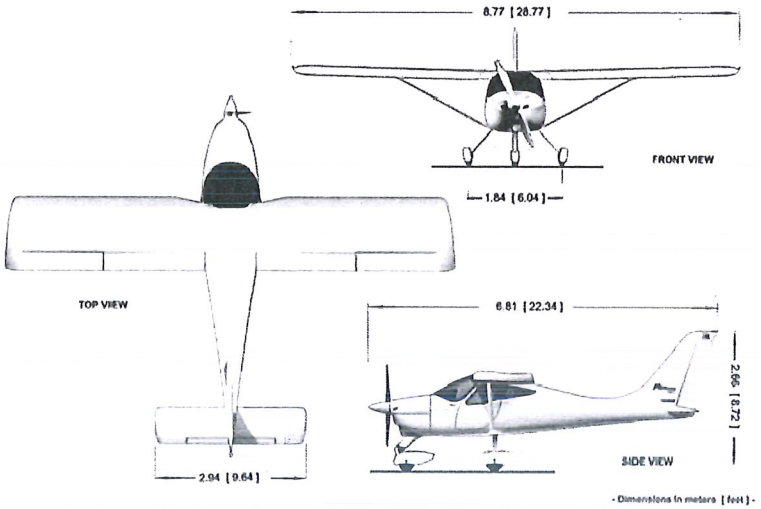


Figure 1-1 General Views

Wing Span	**8.77 m**	**(28.77 ft)**
Length	**6.81 m**	**(22.34 ft)**
Tail height	**2.66 m**	**(8.72 ft)**
Propeller ground clearance	**336 mm**	**(1.10 ft)**

1.3 Descriptive Data

1.3.1 Airframe

1.3.1.1 Wing

Wing Span	8.77 m (28.77 ft)
Wing Area	12.1 m^2 (130.24 ft^2)
Aspect Ratio	6.35
Mean geometric chord	1.40 m (4.59 ft)

1.3.1.2 Fuselage

Overall length	6.81 m (22.34 ft)
Overall height	2.66 m (8.72 ft)

1.3.1.3 Landing Gear

Wheel track	1.84 m (6.04 ft)
Wheel base	1.74 m (5.70 ft)
Main gear tire	5.00-5
Nose Gear tire	5.00-5

1.4 Powerplant

1.4.1 Engine

Manufacturer	Bombardier Rotax GmbH
Model	912 ULS2
Engine type	4 cylinder horizontally-opposed twins with overall displacement of 1352 c.c., mixed cooling, (water-cooled heads and air-cooled cylinders), twin carburetors, integrated reduction gear with torque damper.
Maximum power (at declared rpm)	73.5kW (98.5hp) @5800rpm (max.5') 69.0kW (92.5hp) @5500rpm (cont.)

1.4.2 Propeller

Manufacturer	Sensenich
Model	W68T2ET-70J
Number of blades:	2
Diameter	1730 mm (no reduction allowed)
Type	Fixed pitch – wood

1.4.3 Oil System

Oil system	Forced type with external reservoir
Oil	Lubricant specifications and grade are detailed into the "Rotax Operators Manual" and in its related documents.
Oil capacity	Max. 3 litres – min. 2.0 litres

1.4.4 Cooling

Cooling system	Mixed air and liquid pressurized closed circuit system
Coolant liquid	Coolant type and specifications are detailed into the "Rotax Operator's Manual" and in its related documents.

1.4.5 Fuel

Fuel tanks	Two wing tanks integrated within the wing's leading edge. Equipped with finger strainers outlet and with drain fittings.
Capacity of each wing tank	45 litres
Tanks overall capacity	90 litres
Approved fuel	MOGAS ASTM D4814 MOGAS EN 228 Super/Super Plus (MIN RON 95) AVGAS 100LL (ASTM D910)

1.5 Weights

1.5.1 Maximum Weights

Maximum take-off	600 kg	(1320 lb)
Maximum landing	600 kg	(1320 lb)
Maximum baggage	20 kg	(44 lb)

1.5.2 Standard Weights

Empty weight 380 kg (837.78)

1.5.3 Specific Loadings

Wing loading 49.6 kg/m^2
Power loading 6.1 kg/hp

NOTE
Standard weights are estimates based on standard equipment.

1.6 Standard Equipment

1.6.1 Flight Instruments

Airspeed Indicator, Altimeter, Vertical Speed Indicator, Compass

1.6.2 Engine instruments

Tachometer, Oil Pressure, Fuel Pressure, Oil Temperature, Cylinder Head Temperature, Left and Right Fuel Quantity, Volt Meter

1.6.3 Warning Lights and Indicators

Trim Indicator, Flap Indicator, Generator Warning Light

1.6.4 Controls

Dual Stick Flight Controls and Rudder Pedals, Single Throttle, Throttle Friction Control, Engine Choke, Electric Flaps, Hydraulic Disc Brakes with Parking Brake and toe brakes on both seats, Left and Right Fuel Selector Valve, Direct Nose Wheel Steering (or pivoting NLG with differential breaking system)

1.6.5 Interior

Adjustable Pilot and Copilot Seats, reclining for baggages compartment access, Acoustic Cabin Soundproofing, Adjustable Cabin Air Intakes, Cabin Heat and Windshield Defrost, 12V Power Outlet, Composite Instrument Panel

1.6.6 Exterior

Composite fuselage structure, Composite wing tip and horizontal tail tip, Composite engine cowling, Landing Light, Strobe Light, Fixed Landing Gear, Nose Gear Strut Fairing, Nose and Main Wheel Fairings

1.6.7 Powerplant and Accessories

Rotax 912 ULS Engine (100 hp), Composite Covered Wood / Composite Propeller with Spinner , 12Volt 18 Ah Battery, 18 Amp Alternator, Engine Driven Fuel Pump, Electric Starter, Engine Exhaust Muffler, Gascolator with Quick Drain, Integral Wing Fuel Tanks with sump and quick drain, Integral INOX hoses and AN Fittings for fuel line, All Electric Circuits Fuse Protected

1.7 Airframe

1.7.1 Wing

The wing is of a rectangular planform, with a small tapering of the leading edge near the cabin, allowing an improved visibility, also in steep turn. Its structure consists of a single spar metal torsion box. The aircraft is equipped with half-span slot flaps, with the flap hinge positioned on the lower part of the wing. The wing box incorporates the integral fuel tanks of 45 liters each.

1.7.2 Fuselage

The fuselage is mainly made by carbon fibers composite materials. The fuselage is made by two main shells that are later assembled bonding the two main bodies and the floor and adding aluminum stiffeners that allow the connection of the main landing gear, seats, wing and instrument panel.

1.7.3 Empennage

The horizontal trimmable tail plane is all-moving type, which allows a high control authority and a better stick free stability. The vertical tail is conventional fin and rudder type. Both horizontal and rudder structures are aluminum light alloy (2024-T3 and 6061-T6), except fin, which is a carbon fiber unique body with the fuselage, and tips, which are in fiberglass.

1.7.4 Flight controls

The control surfaces are manually operated using a control stick for ailerons and stabilator and rudder pedals for the rudder; Stabilator is actuated by push-pull rods and cables. Ailerons are actuated by push-pull rods on wing and cables in fuselage. The flap control system is actuated by means of a linear electrical actuator connected to rods transmitting the movement to the flap surfaces.
Longitudinal trim is provided by push/pull rod-type system controlled by an electrical actuator.

1.7.5 Instrument Panel

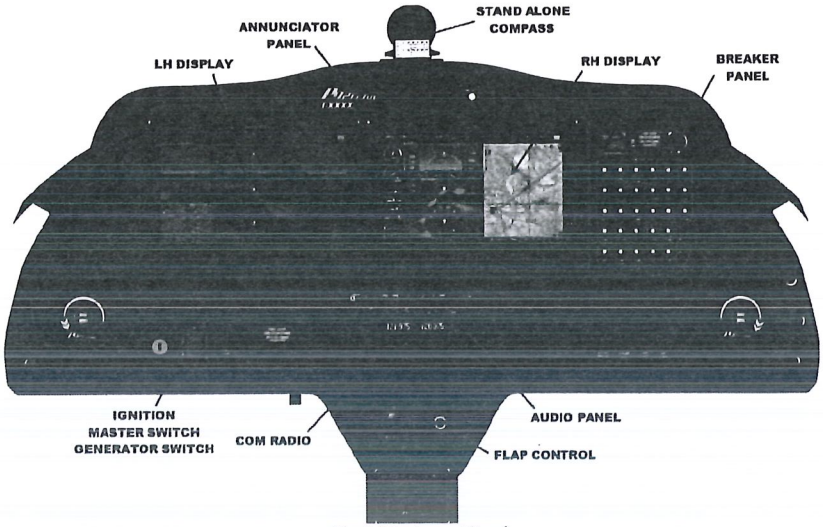


Fig. 1-2 Instrument Panel

1.7.6 Seats

The Pilot and co-pilot seats are characterized by aluminium manufactured by Tecnam. It is covered by a cushion and connected to the fuselage structure.

1.7.7 Doors

Two doors are provided on pilot and co-pilot side. Since the propeller is located on the nose of the aircraft and there are not chances to endanger persons using those exits, the doors are also considered as emergency exits.

1.7.8 Baggage compartment

The baggage compartment is located behind the seats. Baggage shall be uniformly distributed on utility shelf and its weight shall not exceed 20 kg. The c.g. must be computed before flight.

1.8 Powerplant

1.8.1 Engine

Rotax is an Austrian engine manufacturer, founded in 1920 in Dresden, Germany. In 1970 Bombardier bought Rotax. The company constructed only two-stroke engines until 1982, when it started building four-stroke engines. In 1989, Rotax received Type Certification for its 912 A aircraft engine.
The Rotax 912 ULS engine is an ASTM compliant engine. The 912 is a four stroke, horizontally opposed, spark ignition engine with single central camshaft with hydraulic tappets. The 912 has liquid cooled cylinder heads and ram air cooled cylinders and engine. It is rated at 5800 RPM and can be run continuously at 5500 RPM.
The oil system is a dry sump, forced lubrications system. The oil tank is located on the passenger side of the engine compartment and holds 3 liters (3.2 quarts) of oil.
The dual ignition system is a solid state, breakerless, capacitive discharge, interference suppression system instead of a mechanical magneto system. Each ignition system is powered by individual and totally independent AC generators which are not dependent on the aircraft battery.
The electrical system consists of an integrated AC generator with an external rectifier – regulator. An external alternator can be installed. The Rotax engine is equipped with an electric starter.
The dual carburetors are constant depression carburetors that automatically adjust for altitude.
The fuel system is equipped with an engine driven mechanical pump and electrical back up FACET pump.
The cooling system is a mixture of liquid and air cooling.
The engine uses a reduction gearbox with a gear reduction ratio of 2.4286:1.
A central console located throttle in the cockpit controls the engine.
The owner can register and get important information from the following website: http://www.rotax-owner.com/.

1.8.2 Propeller

P92 LSA is equipped with a Sensenich Wood propeller. The model is W68T2ET-70J and is made by two wooden blades, with fixed pitch. The diameter is 1730 mm.

1.8.3 Fuel system

A sketch of the fuel system is illustrated in Figure 1-3. It consists of two fuel tanks integrated in the wing leading edge and having a 45t (11.8 US gal) capacity (total capacity is 90lt (23.7 US gal)). The engine is fed by means of an engine-driven mechanical pump and, as backup, by an electric pump. The fuel system has a sediment bowl or chamber that is accessible for drainage. A fuel selector is located in cabin. Two resistive type fuel quantity senders are installed in each tank and provide the fuel indication on the A/C cockpit.

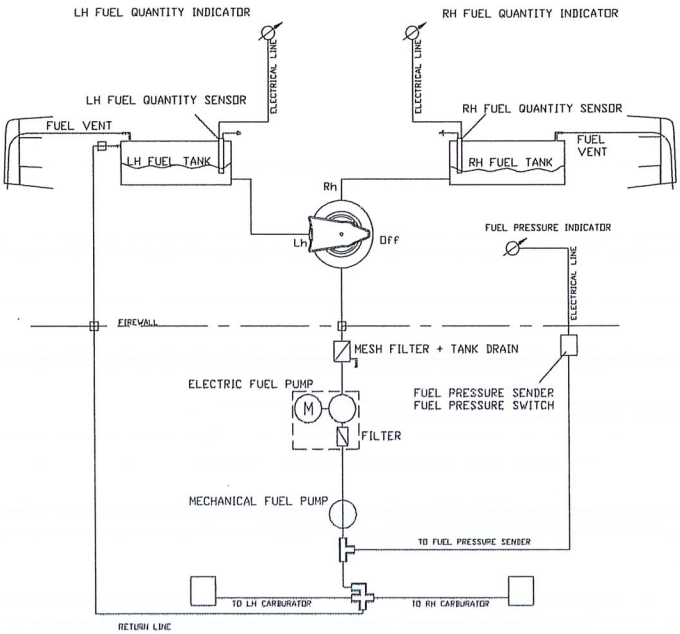


Figure 1-3 Fuel System

1.9 Electrical System

The electric system installed on P92 MkII is characterized by a rated voltage of 13.5 V DC furnished by a generator of 250 W DC. A 12-volts battery with a capacity of 18 Amph furnishes the power needed for aircraft start up and a reserve energy in case of anomalies to the generator. The generator connected to a regulator/rectifier supplies DC power to the bus bars and to recharge the battery. A red warning light on the instrument panel will turn on indicating to the pilot that the generator is not operating. Circuit protection is through breaker located on right side of instrument panel.

The avionic system installed on P92 MkII is based on Garmin G3X touch integrated avionic suite in a dual screen configuration (GDU 460 or 465). It provides flight information (through GSU 25 that records air, attitude and heading data, GMU 22 magnetometer and GTP 59 temperature probe) and primary engine information (through the engine module GSA 24).

Stand-alone external COM/NAV sources (Garmin GTR 225A) is installed. The GTX 35R remote transponder unit is installed. In figure below, the avionic schemes are presented.

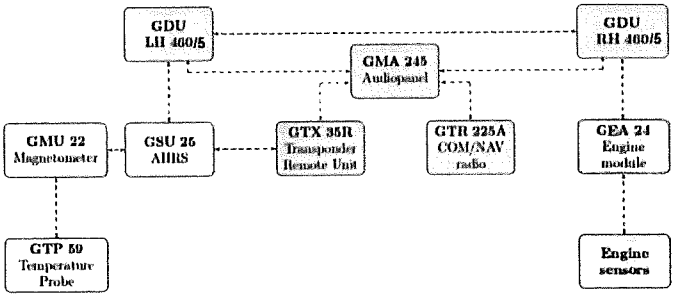


Fig.1-4 Electrical system schematic

The generator provides DC power also to the following electrical utilities:

1) Fuel pump system
2) Flap actuator
3) Trim tab actuator

1.10 Landing Gear

The main landing gear is realized with simple steel spring-leaves, 5.00x5 wheel and tires, disc brakes, renowed for their operational record of effectiveness and safety.

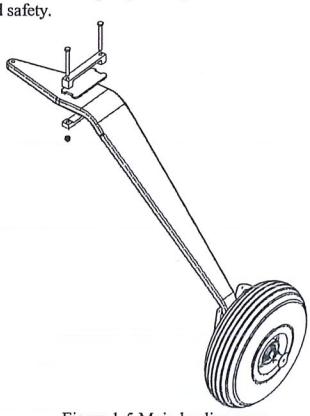


Figure 1-5 Main landing gear

The nose gear features a steerable wheel with a rubber doughnut shock absorber.

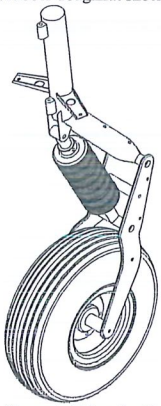


Figure 1-6 Nose landing gear

NOTE *Flight without wheel fairings can be conducted without significantly affect aircraft performance and handling qualities.*

1.10.1 Brake System

The brake system consists of an independent hydraulically actuated brake system, one for each main wheel, and is composed of the following items: 2 brake calipers, located on the inner sides of the main wheels, 4 master cylinders located on the back side of co-pilot pedals, and 1 parking brake valve located downstream the master cylinders, used to trap a column of fluid between the valve itself and the brake calipers to firmly stop the wheels.

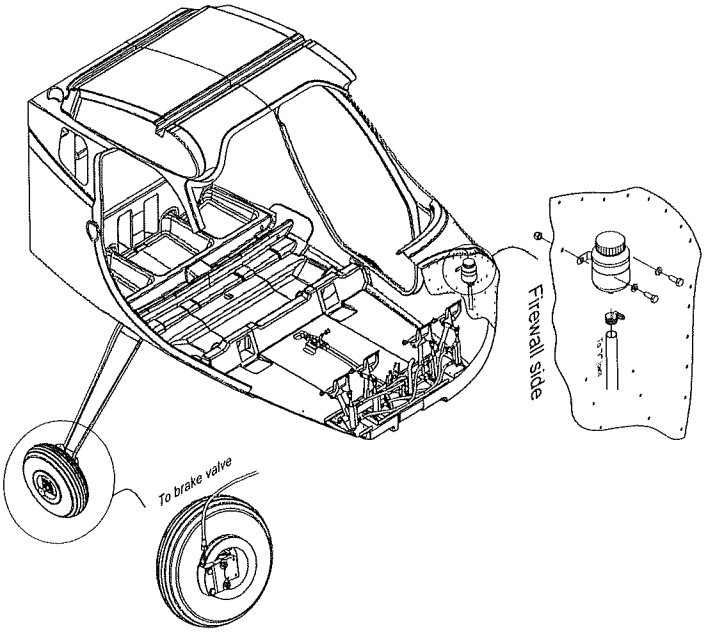


Fig. 1-7 Brake System

SECTION 2
OPERATING LIMITATIONS

Section 2 includes operating limitations, instrument markings, and basic placards necessary for safe operation of the P92, its engine, standard systems and standard equipment.

2.1.1 Airspeed Limitations

Airspeed limitations and their operational significance are shown below:

SPEED		KCAS	KIAS	REMARKS
V_{NE}	Never exceed speed	138	145	Never exceed this speed in any operation
V_{NO}	Maximum Structural Cruising Speed	109	113	Never exceed this speed unless in smooth air, and then only with caution
V_A	Maneuvering speed	95	98	Do not make full or abrupt control movements above this speed as this may cause stress in excess of limit load factor
V_{FE}	Maximum flap extended speed	70	70	Never exceed this speed for any given flap setting
V_X	Best Angle Climb	62	62	The speed which results in the greatest gain of altitude in a given horizontal distance
V_Y	Best Rate Climb	65	65	The speed which results in the greatest gain of altitude in a given time

2.1.2 Airspeed Indicator Markings

Airspeed indicator markings and their color code are explained in the following table:

MARKING	KIAS	SIGNIFICANCE
White arc	41 – 70	Flap Operating Range (lower limit is $1.1V_{S0}$, at maximum weight and upper limit is maximum speed permissible with extended flaps)
Green arc	51 – 113	Normal Operating Range (lower limit is $1.15\ V_{S1}$ at maximum weight and flaps at 0° and upper limit is maximum structural speed V_{NO})
Yellow arc	113-145	Operations must be conducted with caution and only in smooth air
Red line	145	Maximum speed for all operations

2.1.3 Powerplant Limitations

The following table lists operating limitations for aircraft installed engine:
Engine manufacturer: Bombardier Rotax GmbH.
Engine model: 912 ULS2

Maximum power: (see table below)

	Max Power kW (hp)	Max rpm. rpm prop.(engine)	Time max. (min)
Max.	73.5 *(98.5)*	2388 *(5800)*	5
Max cont.	69 *(92.5)*	2265 *(5500)*	-

NOTE
With full throttle, at fixed point in no wind conditions, the maximum propeller's RPM should be 2100 ± 100.

2.1.4 Temperatures

Max cylinder heads	135° C
Max coolant	120° C
Min. / Max. Oil	50° C / 130° C
Oil normal operating temperature (approx.)	90° C – 110° C

2.1.5 Oil Pressure

Minimum	0.8 bar
Normal	2.0 - 5.0 bar

2.1.6 Operating & starting temperature range

OAT Min	-25° C
OAT Max	+50° C

Warning
Admissible pressure for cold start is 7 bar maximum for short periods.

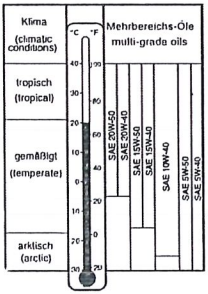
For your information
Bar is a unit of measure. The word comes from the Greek baros, "weighty." We see the same root in our word, barometer, for an instrument measuring atmospheric pressure. One bar is just a bit less than the average pressure of the Earth's atmosphere, which is 1013.25 bar. In practice, meteorologists generally record atmospheric pressure in millibars (mb). In English-speaking countries, barometric pressure is also expressed as the height, in inches, of a column of mercury supported by the pressure of the atmosphere. In this unit, one bar equals 29.53 inches of mercury (in Hg) or 14.5 PSI.

2.1.7 Fuel Pressure

Min	0.15 bar
Normal	0.40 bar

2.1.8 Lubricant

Use viscosity grade oil as specified in the following table:



2.1.9 Coolant

Coolant type and specifications are detailed into the "Rotax Operator's Manual" and in its related documents.

2.1.10 Propellers

MANUFACTURER	Sensenich Propeller
MODEL:	W68T2ET-70J
TYPE	Wood twin blade fixed pitch
DIAMETER	1730 mm (no reduction permitted)

2.1.11 Fuel

Two tanks:	45 liters each (11.88 gallons)
Total fuel capacity:	90 liters (23.76 gallons)

NOTE
During all phases of flight, one tank normally supplies engine fuel feed

Warning

Compensate uneven fuel tank levels by acting on the fuel selector valve located into the cabin.

2.1.12 Approved Fuel

MOGAS ASTM D4814	MOGAS EN 228 Super/Super plus (min RON 95)	AVGAS 100LL (ASTM D910))

Warning

Prolonged use of Aviation Fuel Avgas 100LL results in greater wear of valve seats and greater combustion deposits inside cylinders due to higher lead content. Make reference to Rotax Maintenance Manual which prescribes dedicated checks due to the prolonged use of Avgas.

2.1.13 Powerplant Instrument Markings

Powerplant instrument markings and their color code significance are shown below:

Instrument		Red line Minimum limit	Green arc Normal operating	Yellow arc Caution	Red line Maximum limit
Engine	Rpm	--------	1410-5500	5500-5800	5800
Propeller	Rpm	----	580 - 2265	2265 - 2388	2388
Oil Temp.	°C	50	90-110	50 - 90 110-130	130
Cylinder heads temp.	°C	--------	0 - 135	--------	135
Coolant temp.	°C	---------	0 - 120	--------	120
Oil pressure	Bar	0.8	2 – 5	0.8 – 2 5 – 7	7
Fuel Pressure	PSI (Bar)	2.2 (0.15)	2.2 – 5.08 (0.15-0.4)	--------	5.8 (0.4)

2.1.14 Other Instrument Markings

Instrument	Red line Minimum limit	Green arc Normal operating	Yellow arc Caution	Red line Maximum limit
Voltmeter	10 Volt	12 - 14 Volt	----	----

2.1.15 Weights

Maximum takeoff weight:	600 kg (1320 lbs)
Maximum landing weight:	600 kg (1320 lbs)
Maximum baggage weight:	20 kg (44 lbs)

2.1.16 Center of Gravity Limits

Forward limit	18% MAC for all weights
Aft limit	32% MAC for all weights
Datum	Propeller support flange without spacer
Levelling	Seat track supporting trusses

Warning

It is the pilot's responsibility to insure that airplane is properly loaded

2.1.17 Approved Maneuvers

This aircraft is intended for non-aerobatic operation only. Non-aerobatic operation includes:

- Any maneuver pertaining to "normal" flight
- Stalls (except whip stalls)
- Lazy eights
- Chandelles
- Turns in which the angle of bank is not more than 60°

Warning

Aerobatic manoeuvres, including spins and turns with angle of bank of more than 60° are not approved for such a category

Warning
Limit load factor could be exceeded by moving abruptly flight controls at their end run at a speed above V_A (Maneuvering Speed).

2.1.18 Maneuvering Load Factor Limits

Maneuvering load factors are as follows:

Flaps	Positive	Negative
0°	+4 g	-2 g
LND	+2 g	0 g

2.1.19 Flight Crew

Minimum crew for flight is one pilot seated on the left side.

2.1.20 Kinds of Operations

The airplane, in standard configuration, is approved only for VFR day operation with terrain visual contact.

2.1.21 VFR Day

The minimum equipment required for VFR day operation are the following:

- Altimeter (or Garmin G3X)
- Airspeed Indicator (or Garmin G3X)
- Magnetic direction indicator
- Fuel gauge
- Oil pressure gauge for each engine using pressure system
- Temperature gauge for each liquid-cooled engine
- Oil Temperature gauge for each air-cooled engine
- Manifold pressure gauge for each altitude engine
- Tachometer
- ELT

.
Flight into expected and/or known icing conditions is prohibited.

NOTE

A different equipment list may be asked to fulfill national or specific requirements.
It's a responsibility of the continued airworthiness manager to be compliant with these requirements.

2.1.22 VFR Night

Night flight is approved if the aircraft is equipped as per the ASTM standard F2245-06 A2 (or later version) - LIGHT AIRCRAFT TO BE FLOWN AT NIGHT as well as any pertinent FAR.

NOTE
The FAA requires that the pilot possesses a minimum of a Private Pilot certificate and a current medical to fly at night. See the FARs for more information.

2.1.23 IFR

IFR flight is not allowed

2.1.24 Demonstrated Crosswind Safe Operations

Demonstrated crosswind component is 15 knots.

2.1.25 Maximum operating altitude

Maximum operating altitude is 14000 ft (4260 m) MSL.

2.1.26 Limitation Placards

See Section 8

SECTION 3
WEIGHT & BALANCE

This section describes the procedure for establishing the basic empty weight and moment of the aircraft. Loading procedure information is also provided.

3.1 Aircraft weighing procedures

3.1.1 Preparation

- Carry out weighing procedure inside closed hangar
- Remove from cabin any objects left unintentionally
- Insure Flight Manual is on board
- Align nose wheel
- Drain fuel via the specific drain valve
- Oil, hydraulic fluid and coolant to operating levels
- Raise flaps to fully retracted position (0°)
- Place control surfaces in neutral position
- Place scales (min. capacity 200 kg 440 pounds) under each wheel
- Level the aircraft using baggage floor as datum
- Center bubble on level by deflating nose tire
- Record weight shown on each scale
- Repeat weighing procedure three times

3.1.2 Calculate empty weight Weighing

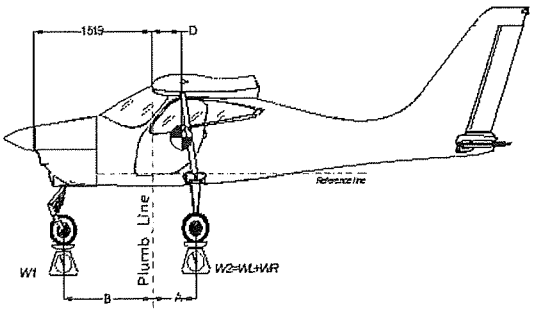
- Record weight shown on each scale
- Repeat weighing procedure three times
- Calculate empty weight

3.1.3 Determination of C.G. location

- Drop a plumb bob tangent to the leading edge (approximately one meter from wing root) and trace reference mark on the floor.
- Repeat operation for other half-wing.
- Stretch a taught line between the two marks
- Measure the distance between the reference line and main wheel axis
- Using recorded data it is possible to determine the aircraft's C.G. location and moment (see following table)

3.2 Weighing report

Model P92 [illegible] S/N 1657 Date 23/11/2021



Datum: Propeller support flange w/o spacer. - *Equipment list*, date: 03/11/2021

	Kg
Nose wheel weight	W_1 = 60
LH wheel weight	W_L = 150
RH wheel weight	W_R = 148
$W_2 = W_L + W_R$ =	298

	meters
Plumb bob distance LH wheel	A_L = 0,560
Plumb bob distance RH wheel	A_R = 0,560
Average distance (A_L+ A_R)/2	A = 0,560
Bob distance from nose wheel	B = 1,164

Empty weight (1) We = $W_1 + W_2$ = 358

$$D = \frac{W_2 \cdot A - W_1 \cdot B}{We} =_m 0,2744 \qquad D\% = \frac{D}{1.400} \cdot 100 = 19,6\,\%$$

Empty weight moment: **M** = [(D+1.519)·We] = *Kg · m* 622

Maximum takeoff weight	W_T = 600 kg
Empty weight	We = 358
Maximum payload W_T - We	Wu = 242

Sign: TECNAM 7

1 - Including unusable fuel

3.2.1 Center of Gravity Limits

Forward limit	19% MAC for all weights
Aft limit	30% MAC for all weights
Datum	Propeller support flange without spacer
Bubble Level	Cabin floor

3.2.2 Distances from the datum

The mean distances of the occupants, baggage and fuel from the datum are:

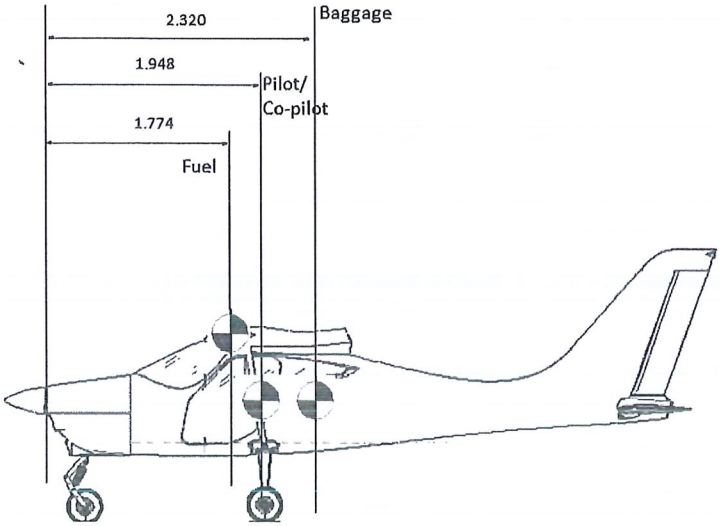


Figure 3-1

3.3 Weight and Balance

In order to compute the weight and balance of this aircraft, we have provided the following loading charts. This will reduce the amount of math you need. To compute weight and balance use the formula:

Weight * Arm = Moment.

Pilot & Passenger	
Weight (kg)	**Moment (kg x m)**
5	9.7
10	19.5
15	29.2
20	39.0
25	48.7
30	58.4
35	68.2
40	77.9
45	87.7
50	97.4
55	107.15
60	116.9
65	126.6
70	136.4
75	146.1
80	155.8
85	165.6
90	175.3
95	185.1
100	194.8

Fuel		
Litres	**Weight (kg)**	**Moment (kg*m)**
5	3.6	6.4
10	7.2	12.8
15	10.8	19.2
20	14.4	25.5
25	18	31.9
30	21.6	38.3
35	25.2	44.7
40	28.8	51.1
45	32.4	57.5
50	36	63.9
55	39.6	70.3
60	43.2	76.6
65	46.8	83.0
70	50.4	89.4
75	54	95.8
80	57.6	102.2
85	61.2	108.6
90	64.8	115.0

Baggage	
Weight (kg)	**Moment (kg*m)**
2	4.6
4	9.3
6	13.9
8	18.6
10	23.2
12	27.8
14	32.5
16	37.1
18	41.8
20	46.4

	Meter
PILOT/CO-PILOT	1.948
FUEL	1.774
BAGGAGE	2.320

To compute weight and balance:

1. Get moments from loading charts
2. Obtain the empty weight and moment from the most recent weight and balance
3. Insert the weights and the moments for fuel, occupants and baggage from the previous chart
4. Total the weight and the moment columns
5. Divide the total moment by the total weight to get the arm
6. Check that the total weight does not exceed maximum gross weight of 1320 pounds
7. Check that the arm falls within the C.G. range

CoG Position Computation Chart			
	Weight (kg)	**Arm (m)**	**Moment (kg*m)**
Empty Weight			
Fuel		1.774	
Pilot & Passenger		1.948	
Baggage		2.320	
Total **MOMENT**			
Total **WEIGHT**			
Arm= **MOMENT/WEIGHT**			

C.G.Range	19%CMA	30%CMA
Meters	1.785	1.939
Max Weight	**Pounds**	**Kilograms**
	1320.00	600.00

CoG Position Computation Chart			
	Weight (kg)	**Arm (m)**	**Moment (kg*m)**
Empty Weight	380		721.24
Fuel	57.6	1.774	102.18
Pilot & Passenger	80	1.948	155.84
Baggage	5	2.320	11.6
Total MOMENT			990.86
Total **WEIGHT**	522.6		
Arm= **MOMENT/WEIGHT**		1.89	

In this example, the gross weight is under the max gross weight of 600 kg and the Arm or C.G. is within the C.G. range listed above.

3.3.1 Loading

Baggage compartment is designed for a maximum load of 20 kg. Baggage size shall prevent excessive loading of utility shelf (maximum pressure 12.5 kg/dm^2). Maximum baggage size is: 80x45x32 cm . Baggage shall be secured using a tie-down net to prevent any baggage movement during maneuvers.

SECTION 4
PERFORMANCE

This section provides all necessary data for accurate and comprehensive planning of flight activity from takeoff to landing.
Data reported in graphs and/or tables were determined using:

- "Flight test data" with conditions as prescribed by ASTM and bilateral agreements
- Aircraft and engine in good condition
- Average piloting techniques

Each graph or table was determined according to ICAO Standard Atmosphere (ISA - MSL); evaluations of the impact on performance were carried out by theoretical means for:

- Airspeed
- External temperature
- Altitude
- Weight
- Type and condition of runway

4.1 Use of Performance Charts

Performance data is presented in tabular or graphical form to illustrate the effect of different variables such as altitude, temperature and weight. Given information is sufficient to plan journey with required precision and safety.
Additional information is provided for each table or graph.

4.2 Airspeed Indicator System Calibration

Graph shows calibrated airspeed V_{IAS} as a function of calibrated airspeed V_{CAS}.

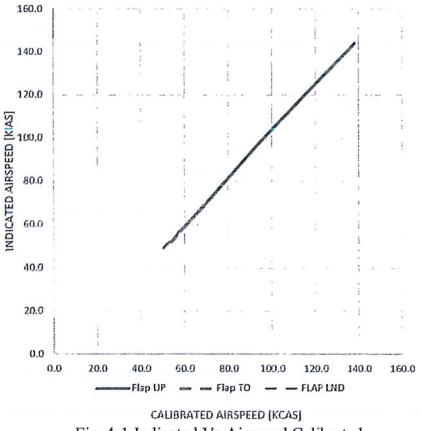


Fig. 4-1 Indicated Vs Airspeed Calibrated.

4.3 ICAO Chart

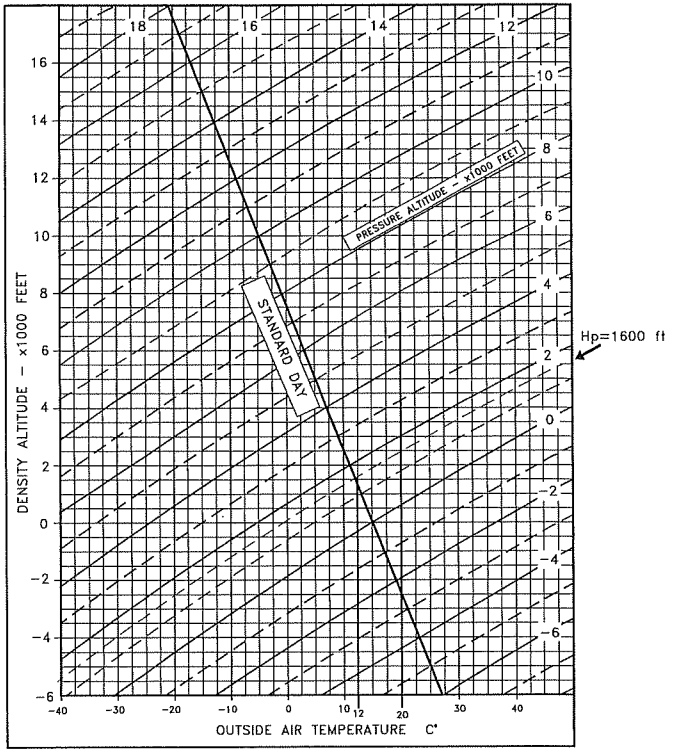


Fig. 4-2 ICAO CHART

4.4 Stall Speeds

Weight: *600 kg*
Throttle Levers: *IDLE*
CG: *Most Forward (23%)*
No ground effect

BANK ANGLE	STALL SPEED					
	FLAPS 0°		FLAPS T/O		FLAPS FULL	
[deg]	KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
0	43	45	40	43	37	39
15	44	46	41	44	38	40
30	47	48	43	46	40	42
45	52	54	49	51	45	46
60	63	64	60	61	54	55

NOTE
Altitude loss during conventional stall recovery as demonstrated during test flights is approximately 200ft with banking under 20°.

4.5 Crosswind

Maximum demonstrated crosswind velocity is 15 knots

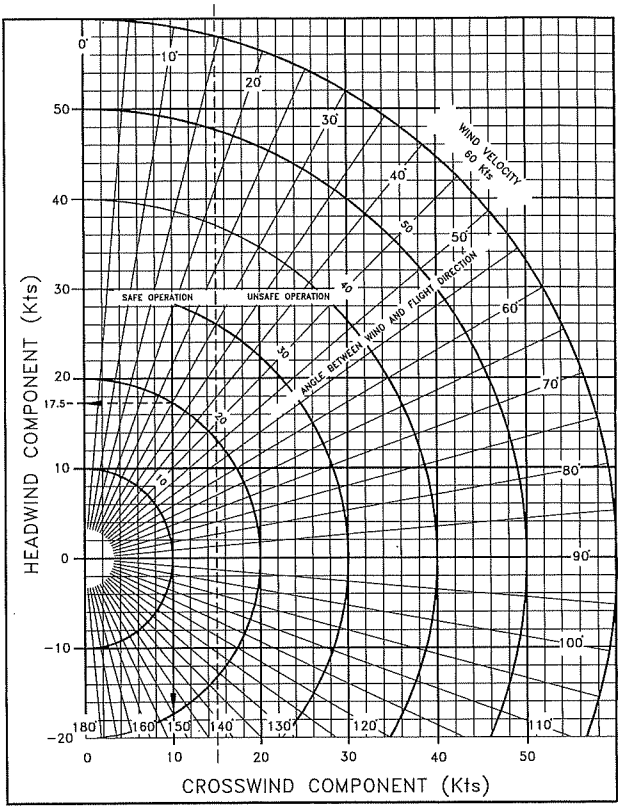


Fig. 4-3 Crosswind chart

4.6 Takeoff Performance

Weight = *600 kg*

Flaps: *T/O*
Speed at Lift-Off = *45 KIAS*
Speed Over *50ft* Obstacle = *50 KIAS*
Throttle Lever: *Full Forward*
Runway: *Grass*

Corrections
Headwind: - 2.5m for each kt (*8 ft/kt*)
Tailwind: + 10m for each kt (*33ft/kt*)
Paved Runway: - *6%* to Ground Roll
Runway slope: + 5% to Ground Roll for each +1%

Pressure Altitude		Distance [m]				
		Temperature [°C]				ISA
[ft]		-25	0	25	50	
S.L.	Ground Roll	150	188	232	282	**214**
	At 50 ft AGL	261	326	399	481	**369**
1000	Ground Roll	163	205	253	307	**230**
	At 50 ft AGL	284	355	434	523	**395**
2000	Ground Roll	178	224	277	337	**247**
	At 50 ft AGL	309	386	473	573	**423**
3000	Ground Roll	194	245	302	377	**265**
	At 50 ft AGL	336	420	515	639	**453**
4000	Ground Roll	213	268	331	422	**285**
	At 50 ft AGL	367	458	561	712	**486**
5000	Ground Roll	232	293	370	472	**306**
	At 50 ft AGL	400	499	627	794	**521**
6000	Ground Roll	254	320	415	528	**329**
	At 50 ft AGL	436	545	700	885	**559**
7000	Ground Roll	279	357	465	590	**361**
	At 50 ft AGL	476	605	782	987	**612**
8000	Ground Roll	305	400	521	661	**397**
	At 50 ft AGL	520	677	874	1101	**671**
9000	Ground Roll	336	449	583	739	**436**
	At 50 ft AGL	571	757	976	1229	**735**
10000	Ground Roll	378	505	654	828	**478**
	At 50 ft AGL	640	847	1090	1371	**805**

Weight = *550 kg*

Flaps: *T/O*
Speed at Lift-Off = *42 KIAS*
Speed Over *50ft* Obstacle = *47 KIAS*
Throttle Lever: *Full Forward*
Runway: *Grass*

Corrections
Headwind: - 2.5m for each kt (*8 ft/kt*)
Tailwind: + 10m for each kt (*33ft/kt*)
Paved Runway: - *6%* to Ground Roll
Runway slope: + 5% to Ground Roll for each +1%

Pressure Altitude		Distance [m] Temperature [°C]				ISA
[ft]		-25	0	25	50	
S.L.	Ground Roll	121	153	188	229	**174**
	At 50 ft AGL	213	267	326	393	**302**
1000	Ground Roll	132	167	206	249	**186**
	At 50 ft AGL	232	290	355	428	**323**
2000	Ground Roll	144	182	224	274	**200**
	At 50 ft AGL	253	315	386	468	**346**
3000	Ground Roll	158	199	245	306	**215**
	At 50 ft AGL	275	344	421	522	**370**
4000	Ground Roll	172	217	268	342	**231**
	At 50 ft AGL	300	374	459	582	**397**
5000	Ground Roll	189	237	300	383	**248**
	At 50 ft AGL	327	408	512	649	**426**
6000	Ground Roll	206	260	337	428	**267**
	At 50 ft AGL	356	445	572	724	**457**
7000	Ground Roll	226	290	377	479	**293**
	At 50 ft AGL	389	494	639	807	**500**
8000	Ground Roll	248	325	423	536	**322**
	At 50 ft AGL	425	553	714	900	**548**
9000	Ground Roll	273	365	473	600	**354**
	At 50 ft AGL	467	619	798	1004	**600**
10000	Ground Roll	307	409	531	672	**388**
	At 50 ft AGL	523	693	891	1121	**658**

Weight = *500 kg*

Flaps: *T/O*
Speed at Lift-Off = *40 KIAS*
Speed Over *50ft* Obstacle = *44 KIAS*
Throttle Lever: *Full Forward*
Runway: *Grass*

Corrections
Headwind: - 2.5m for each kt (*8 ft/kt*)
Tailwind: + 10m for each kt (*33ft/kt*)
Paved Runway: - *6%* to Ground Roll
Runway slope: + 5% to Ground Roll for each +1%

Pressure Altitude		Distance [m] Temperature [°C]				ISA
[ft]		-25	0	25	50	
S.L.	Ground Roll	97	122	150	182	138
	At 50 ft AGL	171	214	262	315	242
1000	Ground Roll	105	133	164	198	148
	At 50 ft AGL	186	233	285	343	259
2000	Ground Roll	115	145	179	218	159
	At 50 ft AGL	203	253	310	375	277
3000	Ground Roll	126	158	195	244	171
	At 50 ft AGL	221	276	337	419	297
4000	Ground Roll	137	173	213	272	184
	At 50 ft AGL	240	300	368	467	318
5000	Ground Roll	150	189	239	305	198
	At 50 ft AGL	262	327	411	520	342
6000	Ground Roll	164	207	268	341	212
	At 50 ft AGL	286	357	459	580	366
7000	Ground Roll	180	230	300	381	233
	At 50 ft AGL	312	396	513	647	401
8000	Ground Roll	197	259	336	427	256
	At 50 ft AGL	341	444	572	722	439
9000	Ground Roll	217	290	377	477	281
	At 50 ft AGL	374	496	639	805	481
10000	Ground Roll	244	326	422	534	309
	At 50 ft AGL	419	555	714	898	527

4.7 Landing Distance

Weight = *600 kg*

Flaps: *LAND*
Final Approach Speed = *50 KIAS*
Throttle Levers: *Idle*
Runway: *Grass*

Corrections
Headwind: - 5m for each kt (*16 ft/kt*)
Tailwind: + 11m for each kt (*36ft/kt*)
Paved Runway: - *2%* to Ground Roll
Runway slope: - 2.5% to Ground Roll for each +1%

Pressure Altitude [ft]		Distance [m]				
		Temperature [°C]				ISA
		-25	0	25	50	
S.L.	Ground Roll	132	146	159	172	**154**
	At 50 ft AGL	260	286	312	338	**302**
1000	Ground Roll	137	151	165	179	**158**
	At 50 ft AGL	269	296	324	351	**311**
2000	Ground Roll	142	157	171	185	**163**
	At 50 ft AGL	279	307	336	364	**320**
3000	Ground Roll	148	162	177	192	**168**
	At 50 ft AGL	290	319	348	377	**330**
4000	Ground Roll	153	169	184	199	**173**
	At 50 ft AGL	301	331	361	392	**340**
5000	Ground Roll	159	175	191	207	**178**
	At 50 ft AGL	312	344	375	406	**350**
6000	Ground Roll	165	182	198	215	**184**
	At 50 ft AGL	324	357	389	422	**361**
7000	Ground Roll	171	189	206	223	**189**
	At 50 ft AGL	337	370	404	438	**372**
8000	Ground Roll	178	196	214	232	**195**
	At 50 ft AGL	350	385	420	455	**384**
9000	Ground Roll	185	204	222	241	**202**
	At 50 ft AGL	363	400	437	473	**396**
10000	Ground Roll	192	212	231	250	**208**
	At 50 ft AGL	378	416	454	492	**408**

Weight = *550 kg*

Flaps: *LAND*
Short Final Approach Speed = *47 KIAS*
Throttle Levers: *Idle*
Runway: *Grass*

Corrections
Headwind: - 5m for each kt (*16 ft/kt*)
Tailwind: + 11m for each kt (*36ft/kt*)
Paved Runway: - *2%* to Ground Roll
Runway slope: - 2.5% to Ground Roll for each +1%

Pressure Altitude [ft]		Distance [m]				
		Temperature [°C]				ISA
		-25	0	25	50	
S.L.	Ground Roll	111	122	134	145	**129**
	At 50 ft AGL	218	240	262	284	**253**
1000	Ground Roll	115	127	138	150	**133**
	At 50 ft AGL	226	249	272	295	**261**
2000	Ground Roll	120	132	144	156	**137**
	At 50 ft AGL	235	258	282	306	**269**
3000	Ground Roll	124	137	149	161	**141**
	At 50 ft AGL	243	268	293	317	**277**
4000	Ground Roll	129	142	155	168	**145**
	At 50 ft AGL	253	278	304	329	**285**
5000	Ground Roll	134	147	160	174	**150**
	At 50 ft AGL	262	289	315	342	**294**
6000	Ground Roll	139	153	167	181	**154**
	At 50 ft AGL	272	300	327	355	**303**
7000	Ground Roll	144	159	173	188	**159**
	At 50 ft AGL	283	311	340	368	**313**
8000	Ground Roll	150	165	180	195	**164**
	At 50 ft AGL	294	323	353	383	**322**
9000	Ground Roll	155	171	187	202	**169**
	At 50 ft AGL	305	336	367	398	**333**
10000	Ground Roll	162	178	194	210	**175**
	At 50 ft AGL	317	349	381	413	**343**

Weight = *500 kg*

Flaps: *LAND*
Short Final Approach Speed = *45 KIAS*
Throttle Levers: *Idle*
Runway: *Grass*

Corrections
Headwind: - 5m for each kt (*16 ft/kt*)
Tailwind: + 11m for each kt (*36ft/kt*)
Paved Runway: - *2%* to Ground Roll
Runway slope: - 2.5% to Ground Roll for each +1%

Pressure Altitude [ft]		Distance [m]				
		Temperature [°C]				ISA
		-25	0	25	50	
S.L.	Ground Roll	92	101	110	120	**107**
	At 50 ft AGL	180	199	217	235	**209**
1000	Ground Roll	95	105	114	124	**110**
	At 50 ft AGL	187	206	225	244	**216**
2000	Ground Roll	99	109	119	129	**113**
	At 50 ft AGL	194	214	233	253	**222**
3000	Ground Roll	102	113	123	133	**117**
	At 50 ft AGL	201	221	242	262	**229**
4000	Ground Roll	106	117	128	138	**120**
	At 50 ft AGL	209	230	251	272	**236**
5000	Ground Roll	110	122	133	144	**124**
	At 50 ft AGL	217	239	260	282	**243**
6000	Ground Roll	115	126	138	149	**128**
	At 50 ft AGL	225	248	270	293	**251**
7000	Ground Roll	119	131	143	155	**132**
	At 50 ft AGL	234	257	281	304	**258**
8000	Ground Roll	124	136	149	161	**136**
	At 50 ft AGL	243	267	292	316	**266**
9000	Ground Roll	128	141	154	167	**140**
	At 50 ft AGL	252	278	303	329	**275**
10000	Ground Roll	134	147	160	174	**144**
	At 50 ft AGL	262	289	315	341	**284**

4.8 Climb Performance

Throttle lever: Full forward
Flaps: Up
V_Y = 65 KIAS
V_X = 62 KIAS

Weight	Pressure Altitude	Rate of Climb [ft/min] at Vy				
		Temperature [°C]				ISA
[kg]	[ft]	-25	0	25	50	
600	S.L.	1318	1085	876	689	**957**
	2000	1140	911	706	522	**818**
	4000	964	738	537	355	**679**
	6000	788	566	368	190	**540**
	8000	612	394	200	25	**401**
	10000	437	223	32	-141	**261**
550	S.L.	1482	1230	1006	803	**1092**
	2000	1290	1043	822	623	**942**
	4000	1100	857	640	444	**793**
	6000	910	671	458	265	**643**
	8000	720	486	276	87	**493**
	10000	532	301	95	-91	**343**
500	S.L.	1677	1402	1156	935	**1251**
	2000	1468	1198	957	740	**1088**
	4000	1260	994	757	544	**925**
	6000	1052	791	558	349	**761**
	8000	845	589	360	154	**598**
	10000	639	388	163	-39.6	**434**

4.9 Cruise

Maximum takeoff weight = 600 kg (1320 lbs)
(2) Fuel tanks 2x45 liters (11.9 gal) (less the unusable fuel)

Pressure altitude H_P: 0 *ft* *OAT: +15°C*

Engine RPM	Speed KTAS	Consumption (lt/h)
4300	102	14
4800	107	18
5200	110	21

Pressure altitude H_P: 3000 *ft* *OAT: +9°C*

Engine RPM	Speed KTAS	Consumption (lt/h)
4300	100	14
4800	107	18
5200	109	21

Pressure altitude H_P: 6000 *ft* *OAT: +3°C*

Engine RPM	Speed KTAS	Consumption (lt/h)
4300	97	14
4800	105	18
5200	108	21

SECTION 5
EMERGENCY PROCEDURES

Section 5 includes checklists and detailed procedures to be used in the event of emergencies. Emergencies caused by a malfunction of the aircraft or engine are extremely rare if appropriate maintenance and pre-flight inspections are carried out.
In case of emergency, suggestions of the present section should be considered and applied as necessary to correct the problem.
Before operating the aircraft, the pilot should become thoroughly familiar with the present manual and, in particular, with the present section. Further, a continued and appropriate training program should be provided.
In case of emergency the pilot should act as follows:

- Keep control of the airplane
- Analyze the situation
- Apply the pertinent procedure
- Inform the Air Traffic Control if time and conditions allow

5.1 Engine Failures

If an emergency arises, the basic guidelines described in this section should be considered and applied as necessary to correct the problem.

5.1.1 Engine Failures on Ground

5.1.1.1 ENGINE FAILURE DURING TAKEOFF RUN

Throttle:..... IDLE
Rudder:..... KEEP HEADING CONTROL
Brakes:..... APPLY AS NEEDED
Magnetos:..... OFF
Fuel selector valve:..... OFF
Electrical fuel pump: ..... OFF
Generator & Master switches: ..... OFF

5.1.2 Engine Failure during Flight

5.1.2.1 ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

Airspeed: ..... KEEP MINIMUM 50 KIAS (V_{50} ft)
Find a suitable place on the ground to land safely. The landing should be planned straight ahead with only small changes in directions not exceeding 45° to the left or 45° to the right
Flaps: ..... AS REQUIRED

At touch down
Throttle:..... IDLE
Magnetos:..... OFF
Fuel selector valve:..... OFF
Electrical fuel pump: ..... OFF
Generator & Master switches: ..... OFF

5.1.2.2 IRREGULAR ENGINE RPM

Throttle:..... CHECK
Engine gauges: ..... CHECK
Fuel quantity indicators:..... CHECK
If the engine continues to run irregularly:
Fuel selector valve:..... LEFT or RIGHT
If the engine continues to run irregularly:
Land as soon as possible applying forced landing procedure (See Para.5.5)

5.1.2.3 LOW FUEL PRESSURE

If the fuel pressure indicator falls below the 2.2 psi (0.15 bar):
Electric fuel pump:..... ON
Fuel selector valve:..... CHANGE THE FUEL FEEDING TANK
Check both fuel quantity indicators
If the fuel pressure does not build up:
Land as soon as possible monitoring fuel pressure
If engine stops:
Land as soon as possible applying forced landing procedure (See Para.5.5)

5.1.2.4 OIL PRESSURE LIMITS EXCEEDANCE

If oil pressure exceeds upper limit (7 bar):
Throttle Lever:..... REDUCE engine power as practical
Oil pressure and oil temperature: ..... CHECK within limits
Land as soon as practical

If oil pressure is under the lower limit (0.8 bar):
Throttle:..... REDUCE minimum practical
Land as soon as practical
If oil pressure continues to decrease:
Land as soon as possible applying forced landing procedure (See Para.5.5)

5.1.2.5 HIGH OIL TEMPERATURE

If oil pressure is low see para. 4.10.2.4 Low Oil Pressure

If oil pressure is within limits:
Throttle:..... REDUCE minimum practical
If oil temperature does not decrease:
Airspeed: ..... INCREASE
Land as soon as practical
If engine roughness, vibrations, erratic behavior, or high CHT is detected:
Land as soon as possible applying forced landing procedure (See Para.5.5)

5.1.2.6 CHT LIMITS EXCEEDANCE

If CHT is above 135°C:
Throttle:..... REDUCE minimum practical
Land as soon as practical
If CHT continues to rise and engine shows roughness or power loss:
Land as soon as possible applying forced landing procedure (See Para.5.5)

5.2 Engine Securing

Following procedure is applicable to shut-down the engine in flight:
Throttle:..... IDLE
Magnetos: ..... OFF
Fuel selector valve:..... OFF
Electrical fuel pump: ..... OFF
Generator switch: ..... OFF

5.3 In flight engine restart

Electrical fuel pump: ..... ON
Fuel quantity indicator: ..... CHECK
Fuel selector: ..... CHANGE THE FUEL FEEDING TANK
Magnetos:..... BOTH
Magnetos:..... START
Throttle:..... AS REQUIRED
In case of unsuccessful engine restart:
Engine: ..... SECURE (See Para.4.11)
Land as soon as possible applying forced landing procedure (See Para.5.5)

5.4 Smoke and Fire

5.4.1 Engine Fire while parked

Fuel selector valve:..... OFF
Electrical fuel pump ..... OFF
Magnetos:..... OFF
Throttle:..... FULL POWER
Cabin heat: ..... OFF
Generator & Master Switches: ..... OFF
Parking Brake:..... ENGAGED
Aircraft evacuation:..... CARRY OUT IMMEDIATELY

Without remove engine cowl, use a CO2 or dust extinguisher to extinguish fire, directing the extinguish jet toward the cowl air intakes
ATTENTION: DON'T USE WATER to extinguish fire and not open engine cowl until you are absolutely sure to have extinguished fire. If you not have a properly extinguisher you can always use, with engine cowl closed, a wool cover, sand or soil, to try to choke fire.

5.4.2 Engine Fire during Takeoff

Before rotation: abort take off
Throttle:..... IDLE
Rudder:..... KEEP HEADING CONTROL
Brakes:..... AS REQUIRED

With the airplane under control:
Fuel selector valve:..... OFF
Electrical fuel pump: ..... OFF
Magnetos:..... OFF
Cabin heat: ..... OFF
Generator & Master Switches: ..... OFF
Parking brake: ..... ENGAGED
Aircraft evacuation:..... CARRY OUY IMMEDIATELY

5.4.3 Engine Fire in-flight

Cabin heat: ..... OFF
Fuel selector valve:..... OFF
Electric fuel pump:..... OFF
Throttle:..... FULL FORWARD until the engine stops
Magnetos:..... OFF
Do not attempt an in-flight restart
Land as soon as possible applying forced landing procedure (See Para.5.5)

5.4.4 Cabin Fire / Electrical smoke in cabin during Flight

Cabin heat: ..... OFF
Doors:..... OPEN, if necessary
Try to choke the fire. Direct the fire extinguisher towards flame base
If smoke persists:
Generator & Master Switches: ..... OFF
Land as soon as possible applying forced landing procedure (See Para.5.5)

5.4.5 Electrical smoke/fire in cabin on the ground

Generator switch: ..... OFF
Throttle: ..... IDLE
Magnetos: ..... OFF
Fuel selector valve: ..... OFF
Master Switch: ..... OFF
Aircraft evacuation: ..... CARRY OUY IMMEDIATELY

5.5 Landing Emergency

FORCED LANDING WITHOUT ENGINE POWER

Flaps: ..... UP
Airspeed (Best glide speed): ..... 65 KIAS
Find a suitable place to land safely, plan to approach it upwind
Fuel selector valve: ..... OFF
Electrical fuel pump: ..... OFF
Magnetos: ..... OFF
Safety belts: ..... TIGHTEN
When certain to land
Flaps: ..... AS NECESSARY
Generator & Master Switches: ..... OFF

POWER-ON FORCED LANDING

Airspeed (Best glide speed): ..... 65 KIAS
Flaps: ..... UP
Locate the most suitable terrain for emergency landing, upwind if possible
Safety belts: ..... TIGHTEN
Doors: ..... CHECK LOCKED
When certain to land, right before touch down:
Flaps: ..... AS NECESSARY
Fuel selector valve: ..... OFF
Electrical fuel pump: ..... OFF
Magnetos: ..... OFF
Generator & Master Switches: ..... OFF

5.6 Stall Recovery

At the first indication of stall, for example, uncontrolled lateral departure, pitch down:
Pitch nose down: ..... APPLY
Wings level: ..... OBTAIN AND MAINTAIN
Power: ..... AS REQUIRED
Return to the desired flight path being careful to avoid a secondary stall

5.7 Recovery from Unintentional Spin

If unintentional spin occurs, the following recovery procedure should be used:
Throttle:..... IDLE
Flap:..... UP
Rudder:..... FULL, IN THE OPPOSITE DIRECTION OF THE SPIN
Stick: ..... FORWARD
As the spin stops:
Rudder:..... SET NEUTRAL
Attitude:..... SMOOTLHY RECOVER AVERTING SPEEDS IN EXCESS OF VNE AND MAXIMUM LOAD FACTOR (n=+3.8)
Throttle:..... AS REQUIRED

NOTE
Use elevator control to recover to straight and level or a climbing attitude

5.8 Airplane Alerts

The annunciations colors located on the annunciator panel can be:

GREEN: to indicate a SAFE OPERATION
RED: to indicate a FUTURE CORRECTIVE ACTION must be performed

5.8.1 Alternator failure

The annunciation (ALT) located on the annunciator panel may activated when a fault is detected on alternator or the alternator is disconnected.

Generator switch: ..... OFF
Master switch: ..... OFF
Generator switch: ..... ON
Master switch: ..... ON
If the problem persists:
Generator switch: ..... OFF
Non-vital electric equipment: ..... SHED

5.8.2 Electrical fuel pump failure

If the annunciation FUEL PUMP ON located on the annunciator panel is deactivated, apply the following procedure:
Electrical fuel pump switch:..... OFF
Electrical fuel pump switch:..... ON
Fuel pressure: ..... CHECK RAISE

If fuel pressure does not build up:
Land as soon as possible monitoring fuel pressure

5.9 Trim System Failure

5.9.1 LOCKED CONTROL

Should trim control be inoperative, act as follows:

Breakers..... CHECK
Trim switch LH/RH ..... CHECK FOR CORRECT POSITION
Speed..... ADJUST SPEED TO CONTROL AIRCRAFT WITHOUT EXCESSIVE STICK FORCE

Land aircraft as soon as possible

5.9.2 RUNAWAY

In event of trim runaway, act as follows:

Pull TRIM breaker as soon as possible
Speed..... ADJUST SPEED TO CONTROL AIRCRAFT WITHOUT EXCESSIVE STICK FORCE

Land aircraft as soon as possible

5.10 Airplane Evacuation

With the engine secured and propeller stopped (if practical):

Parking brake: ..... ON
Seat belts: ..... UNSTRAP COMPLETELY
Headphones:..... REMOVE
Door: ..... OPEN
If door is locked or doesn't open:..... BREAK USING THE HAMMER (IF AVAILABLE)
Escape away from flames/ hot engine compartment/ spilling fuel tanks.

5.11 Other Emergencies

5.11.1 UNINTENTIONAL FLIGHT INTO ICING CONDITIONS

Get away from icing conditions by changing altitude or direction of flight in order to reach an area with warmer external temperature.

Control surfaces: ..... CONTINUE TO MOVE TO MAINTAIN THEIR MOVABILITY

Increase rpm to avoid ice formation on propeller blades.

Cabin heat: ..... ON

WARNING

In case of ice formation on wing leading edge, stall speed may increase.

SECTION 6
NORMAL PROCEDURES

Section 6 contains checklists and the procedures for normal operation.

6.1 Checklist Procedures

6.1.1 Pre-Flight Inspection

Before each flight, it is necessary to carry out a complete inspection of the aircraft starting with an external inspection followed by an internal inspection.

6.1.1.1 Cabin Inspection

All required paperwork: ..... ONBOARD
Weight and balance: ..... CHECK
Safety belts used to lock controls: ..... CONNECTED TO HARD POINTS, CHECK CONDITION
Parking brake: ..... SET
Magnetos: ..... OFF
Master switch: ..... ON
Push to test on annunciator panel in order to verify all light are on
Navigation lights and strobe light: ..... CHECK

NOTE
Strobe lights won't work without the engine running

Landing light: ..... CHECK
Fuel Tank levels: ..... CHECK
Master switch: ..... OFF
Baggage: ..... CHECK LUGGAGE FASTENED WITH RESTRAINT NET

WARNING
Fuel level indicated by the fuel quantity indicators (on the instrument panel) is only indicative. For flight safety, pilot should verify actual fuel quantity visually in tanks before takeoff.

6.1.1.2 External Inspection

It is best to follow the external inspection in the station order outlined in fig. 6-1 so nothing is missed.
Visual inspection is defined as follows: check for defects, cracks, detachments, excessive play, and unsafe or improper installation as well as for general condition. For control surfaces, visual inspection also involves additional checks for freedom of movement and security.

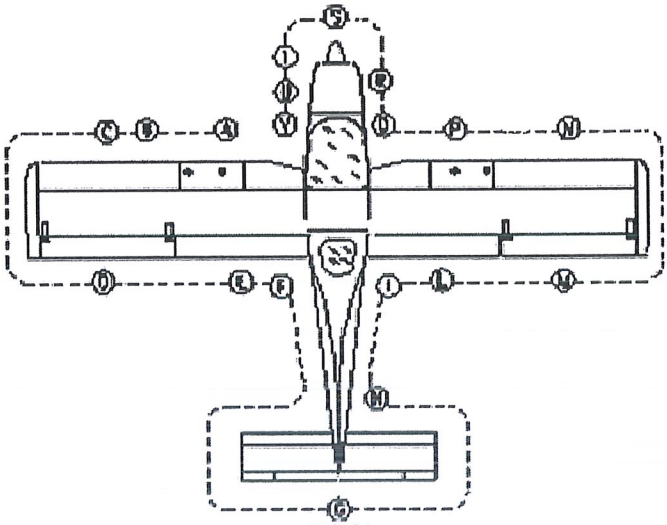


FIG. 6-1

A Left hand fuel filler cap: check visually for desired fuel level and secure. Left tank vent: check for obstructions.

B Remove protection cap and check pitot mounted on left strut is unobstructed, do not blow inside vents, place protection cap inside aircraft.

C Left side leading edge and wing skin: visual inspection

D Left aileron: visual inspection

E Left flap and hinges: visual inspection

F Left main landing gear; check inflation 14 psi (1.0 bar) or 40 psi (2.8 bar) , tire condition, alignment, fuselage skin condition.

G Horizontal tail and tab: visual inspection.

H Vertical tail and rudder: visual inspection.

I Right side main landing gear; check inflation 14 psi (1.0 bar) or 40 psi (2.8 bar), tire condition, alignment, fuselage skin condition.

L Right flap and hinges: visual inspection.

M Right aileron: visual inspection.

N Right leading edge and wing skin: visual inspection.

P Right side fuel filler cap: check visually for desired fuel level and secure. Right side tank vent: check for obstructions.

Q Right side static port: check for obstructions, do not blow inside vents (read note).

R Nose wheel strut and tire: check inflation 11 psi (0.8 bar), tire condition and condition of rubber shock absorber discs.

S Propeller and spinner condition: check for nicks and security.

T Open engine cowling and perform the following checklist:

I. Check no foreign objects are present.

II. Check the cooling circuit for losses, check coolant reservoir level, insure radiator honeycomb is unobstructed.

III. Check lubrication circuit for losses, check oil reservoir level, insure radiator honeycomb is unobstructed.

IV. Open both fuel shutoff valves, inspect fuel circuit for losses, check integrity of fireproof protection braids, drain circuit using a cup to collect fuel by opening the specific drainage valve located on the firewall, close shutoff fuel valves. Check for water or other contaminants.

U Nose wheel strut and tire: check tire condition and condition of rubber shock absorber discs.

V Left side static port: check for obstructions, do not blow inside vents (read note).

WARNING
Drain fuel with aircraft parked on level surface

6.1.1.3 BEFORE START

Seat position and safety belts: ..... ADJUST
Flight controls: ..... CHECK
Parking brake: ..... ENGAGE
Throttle friction: ..... ADJUST
Circuit breakers: ..... CHECK ALL IN
Master switch: ..... ON, (check the red light *ALT* on the annunciator panel is activated)
Electric fuel pump: ..... ON (check for audible pump noise and fuel pressure build up)
Electric fuel pump: ..... OFF
Avionic master switch: ..... ON (instruments check, then set in OFF)
Flap control: ..... CYCLE FULLY UP EXTENDED AND THEN SET T/O
Pitch trim: ..... CYCLE FULLY UP AND DOWN, FROM BOTH LEFT AND RIGHT CONTROLS.
Pitch trim: ..... SET NEUTRAL
Nav light and strobe light: ..... ON
Fuel quantity: ..... CHECK

NOTE
Compare the fuel levels read by the fuel quantity indicators with the quantity present in the tanks

WARNING
Be sure that the fuel valve is NOT in OFF position

Seat position and safety belts: ..... ADJUST
Doors: ..... CLOSED AND LOCKED

6.1.1.4 STARTING ENGINE

Throttle:..... IDLE
Choke:..... AS NEEDED
Fuel selector valve:..... SELECT THE TANK WITH LESS FUEL
Electric fuel pump:..... ON
Check the green light FUEL PUMP ON is activated on the annunciator panel
Propeller area:..... CALL FOR CLEAR AND VISUALLY CHECK

WARNING

Check to insure no person or object is present in the area close to propeller

Magnetos:..... BOTH
Magnetos:..... START
Check oil pressure rise within 10 sec. (maximum cold value 7 bar)
Generator Switch:..... ON (check the red light *ALT* on the annunciator panel is OFF)
Voltmeter:..... CHECK more than 14V
Engine parameters:..... CHECK
Choke:..... OFF
Engine rpm:..... 2430-2915 rpm
Electric fuel pump:..... OFF
Fuel pressure:..... CHECK (min. 2.2 psi)

6.1.1.5 BEFORE TAXI

Radio and Avionics:..... ON
Altimeter:..... SET
Parking brake: OFF and taxi

6.1.1.6 TAXI

Brakes:..... CHECK
Flight instruments:..... CHECK

6.1.1.7 BEFORE TAKE-OFF

Parking brake:..... ON
Engine parameters:..... CHECK WITHIN LIMITS
- Oil pressure: 2 - 5 bar (above 3500 rpm); 0.8 bar (below 3500 rpm)

Check the red light *ALT* on the annunciator panel is OFF
Electric fuel pump:..... ON
Fuel selector valve:..... SELECT THE FULLEST TANK
Fuel pressure:..... CHECK
Throttle:..... ADVANCE TO 4000 RPM
- Ignition magnetos test: select LEFT, check RPM drop within 315 rpm;
- Select BOTH: check engine speed 4000 rpm;
- Select RIGHT: check RPM drop within 315 rpm;
- Maximum difference of speed between LEFT and RIGHT 120 rpm,
- Select BOTH: check engine speed 4000 rpm.

Flaps:..... SET T/O (15°)
Pitch trim:..... CHECK NEUTRAL
Flight controls:..... CHECK FREE
Seat belts:..... CHECK FASTENED
Doors:..... CHECK CLOSED AND LOCKED

6.1.1.8 TAKEOFF AND CLIMB

Parking brake: ..... OFF
Throttle: ..... FULL FORWARD
Engine parameters: ..... CHECK
Vr (Rotation speed): ..... 45 KIAS

At a safe altitude:
Flaps: ..... RETRACT
Establish Vy clean: ..... 65 KIAS
Electric fuel pump: ..... OFF
Fuel pressure: ..... CHECK GREEN ARC
Engine speed: ..... REDUCE AT OR BELOW 5500 RPM

6.1.1.9 CRUISE

Power as for required performance: ..... SET
Engine parameters within limits: ..... CHECK

CAUTION

Monitor and manually compensate asymmetrical fuel consumption by switching fuel selector valve. Switch on the electric fuel pump prior to swap the fuel feeding from one tank to another.

6.1.1.10 BEFORE LANDING

Electric fuel pump: ..... ON
Fuel selector valve: ..... SELECT THE FULLEST TANK
Landing light: ..... ON
On downwind, leg abeam touch down point: ..... SET FLAP T/O (Approach Speed 54 KIAS)
On final leg: ..... SET FLAP LAND (Final Approach Speed 50 KIAS)
Optimal touchdown speed: ..... 43 KIAS

6.1.1.11 BALKED LANDING

Throttle: ..... FULL FORWARD
Speed: ..... CLIMB to Vy or Vx AS APPLICABLE
Flaps: ..... TAKE-OFF
Electric fuel pump: ..... ON

6.1.1.12 AFTER LANDING

Flaps: ..... UP
Electric fuel pump: ..... OFF
Landing light: ..... OFF

6.1.1.13 ENGINE SHUT DOWN

Parking brake: ..... ENGAGE
Keep engine running at about 2900 rpm for about one minute in order to reduce latent heat
Avionic master switch: ..... OFF
Magnetos: ..... OFF
Nav and Strobe lights: ..... OFF
Master and Generator switches: ..... OFF
Fuel selector valve: ..... OFF

6.1.1.14 POSTFLIGHT CHECK

Flight controls/Surfaces:..... LOCK BY MEANS OF GUST LOCK (IF AVAILABLE)
Wheel chocks and wing mooring lines:..... SET (IF AVAILABLE)
Parking brake: ..... RELEASE
Doors:..... CLOSE AND LOCK
Protection covers:..... INSTALL

SECTION 7
GROUND HANDLING & SERVICE

This section contains factory-recommended procedures for proper ground handling and routine care and servicing. It also identifies certain inspection and maintenance requirements, which must be followed if the aircraft is to retain its new-plane performance and dependability. It is recommended to follow a planned schedule of lubrication and preventive maintenance based on climatic and flying conditions encountered locally.

7.1 Aircraft Inspection Periods

Inspection intervals occur at 100 hours and in accordance with special inspection schedules, which are added to regularly, scheduled inspections. Correct maintenance procedures are described in the aircraft's Service Manual or in the engine's Line Maintenance Manual.

7.2 Aircraft Alterations or Repairs

For repairs, refer to aircraft's Line Maintenance Manual.

7.3 Ground Handling

7.3.1 Towing

The use of a towbar is recommended. But, pulling on the propeller near the axle you can safely maneuver the aircraft. Aircraft may be steered by turning rudder or, for steep turns, by pushing lightly on tailcone to lift nose wheel.

7.3.2 Parking and Tiedown

When parking airplane outdoors, head it into the wind and set the parking brake. It is preferable to use chocks if available. Tie the airplane down in severe weather and high wind conditions. Tie-down ropes shall be fastened to the wing attachments and anchoring shall be provided by ramp tie-downs. Nose gear fork can be used for front tie-down location or the tail can be tied down with the optional Tiedown point.
Secure the flight controls to avoid possible weathervane damage to moving surfaces. Seatbelts may be used to latch control stick to prevent its movement.

7.3.3 Jacking

Given the light empty weight of the aircraft, lifting one of the main wheels can easily be accomplished even without the use of hydraulic jacks. For an acceptable procedure please refer to the Line Maintenance Manual.

7.3.4 Leveling

Aircraft leveling may become necessary to check wing incidence, dihedral or the exact location of CG. Longitudinal leveling verification is obtained by placing a level longitudinally, over the aft part of the baggage compartment floor. See maintenance manual for instructions.

7.3.5 Road Transport

It is recommended to secure tightly all aircraft components onto the cart to avoid damage during transport. Minimum cart size is 7x2.5 meters. It is suggested to place wings under the aircraft's bottom, secured by specific clamps. Secondary components such as stabilator and struts shall be protected from accidental hits using plastic or other material. For correct rigging and de-rigging procedure, refer to the Line Maintenance Manual.

7.3.6 Cleaning and Care

To clean painted surfaces, use a mild detergent such as shampoo normally used for car finish; use a soft cloth for drying.
The plastic windshield and windows should never be dusted when dry; use lukewarm soapy water and dry using chamois only. It is possible to use special glass detergents but, in any case, never use products such as gasoline, alcohol, acetone or other solvents.
To clean cabin interior, seats, upholstery and carpet, it is generally recommended to use foam-type detergents.

Section 8
PLACARDS & MARKINGS

8.1.1 Magnetic compass compensation table

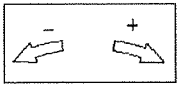
To compensate the deviation errors of the magnetic compass, the following correction table is located just below the compass:

For	N	30	60	E	120	150
Steer						
For	S	210	240	W	300	330
Steer						

DATE RADIO ON AIRPATH

8.1.2 Engine throttle friction

A throttle friction lock is located on the instrument panel to keep the desired throttle setting. The following placard is positioned near the friction lock knob.



THROTTLE
LOCK

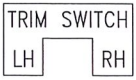
8.1.3 Cabin heat

The cabin heat control knob is located at the bottom right of instrument panel. The cabin's heat control is marked with the following placard.

OR

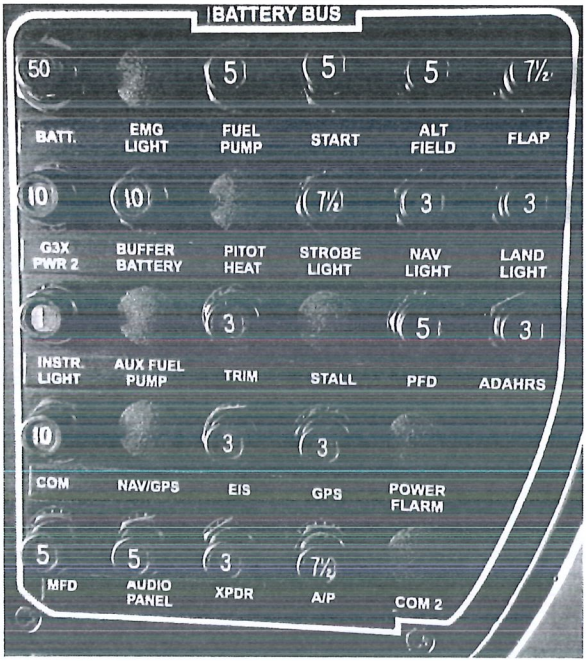
8.1.4 Trim switch

The trim switch control is located on the right area of the annunciator panel. The following placard is positioned just above of it.



8.1.5 Breakers

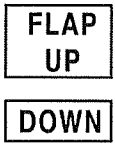
Breakers are located on the right side of the instrument panel and each breaker is individually marked as follows:



Depending on the specific equipment installed on the a/c, the type and position of the breakers could vary from the above shown.

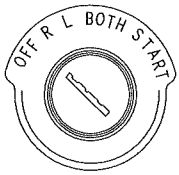
8.1.6 Flaps

The flap control switch is located on the lower portion of the instrument panel. The following placards are just next to it.

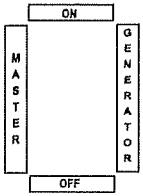


8.1.7 Generator, Master, Starter

On the lower left part of the instrument panel are located, in order:
The starter, marked with a placard:



For the generator and master switches:



8.1.8 Choke

Located above the choke lever:

OR

8.1.9 Generator light

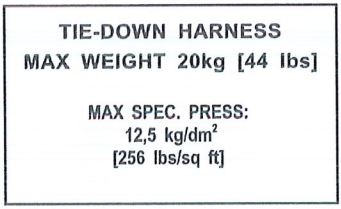
A generator warning light is located on the upper/right side of the instrument panel and it is marked with the following label.

8.1.10 Fuel selector valve

Fuel shutoff valve is located on central section of cockpit panel. It controls the fuel coming from the tanks making the pilot able to switch LEFT TANK, RIGHT TANK and OFF.

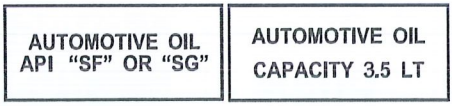
8.1.11 Baggage compartment

A placard indicating the maximum weight and the maximum pressure of the baggage's retain harnesses is present into the baggage compartment.



8.1.12 Oil tank reservoir

The oil tank reservoir is equipped with the following two placards indicating the type and quantity of engine's oil stored



8.1.13 Identification plate

The following placards, made of stainless steel, are located on the pilot side of the empennage forward of the stabilator (1) and on the fire wall (2).

(1)

SERIAL NUMBER _____
MODEL _____
DATE ___/___/_____
ENGINE _____
CERTIFICATE N. _____

(2)

8.1.14 Fuel Tank

Next each fuel tank, the following placard is present.

AUTOMOTIVE FUEL
LEADED OR UNLEADED

AVGAS 100 LL

CAPACITY - 45 LT (11,9 US Gallon)

8.1.15 Limitation Placards

The following placard is located on the central section of cockpit panel, just below the fuel shutoff valve

MANEUVERING SPEED V_A = 98 KIAS

This aircraft was manufactured in accordance with Light Sport Aircraft airworthiness standars and does not conform to standard category airworthiness requirements.
NO INTENTIONAL SPINS.
For operational limitations refer to THE FLIGHT MANUAL .

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Section 9
SUPPLEMENT LIST

9.1 Introduction

This Section concerns the supplemental manuals of additional (or optional) instrumentation equipping the *P92* and/or information and limitations related to installed equipment configuration or needed to fit local national rules.

9.2 Supplements list

Aircraft S/N: 1537 Registration marks: Date: 05/11/2021

SUPPLEMENTS LIST

Sup. No.	Title	Rev. no.	Date	APPLICABLE: YES	APPLICABLE: NO
S1	Analogic Version	0	31/07/2020	☒	☐
S2	Garmin G3X touch + Analogic Engine Instruments	0	18/06/2021	☐	☒
S3	BRS – 6 Rescue Parachute	0	18/06/2021	☐	☒
S4	Garmin Automatic Flight Control System	0	18/06/2021	☐	☒

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SUPPLEMENT No. S1

Analogic Version

Record of Revisions

Any revisions to the present Supplements, except actual weighing data, must be recorded in the following table.
New or amended text in the revised pages will be indicated by a black vertical line in the left-hand margin;

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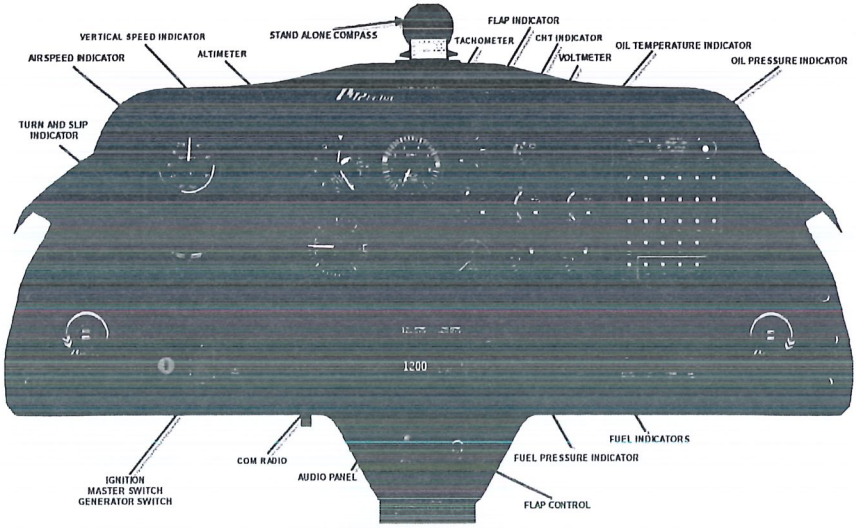
Introduction

This Supplement contains supplemental information to operate the aircraft in a safe and efficient manner when equipped with analogic version of instrument panel.

General

Instrument Panel

The instrument panel is of conventional type, allowing space for a broad range of equipment.



Operating Limitations

Refer to Section 2 of this POH

Weight & Balance

Refer to Section 3 of this POH

Performance

Refer to Section 4 of this POH

Emergency Procedures

Refer to Section 5 of this POH

Normal Procedures

Refer to Section 6 of this POH

Ground Handling & Service

Refer to Section 7 of this POH

Placard and Markings

Refer to Section 8 of this POH

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SUPPLEMENT No. S2

Garmin G3X Touch + Analogic Engine Instruments

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Introduction

This Supplement contains supplemental information to operate the aircraft in a safe and efficient manner when equipped with Garmin G3X Touch and analogical engine instruments.

Section 1 - General

1.1. Instrument Panel

The aircraft is equipped with a Garmin G3X Touch screen (GDU 460) which provides the information and parameters of the flight. The system obtains the necessary data through the GSU 25 ADHARS, the GMU 11 or GMU 22 Magnetometer and the OAT probe, GTP 59. The G3X system also incorporates a GPS receiver.
Engine information is provided to the pilot through conventional instruments. These provide information on RPM, flap angle, voltimeter, coolant temperature, oil temperature and pressure, and fuel quantity indicators for each tank, left and right.
A pair of instrument lights (if installed) are fixed on the sides of the instrument panel, equipped with flexible struts, they can be adapted to illuminate the instrument panel, according to the needs of the pilot. A dimming device, if installed, is located in the upper area of the central instrument panel, allowing the brightness of the instrument lights to be adjusted.
In addition, a map light (dimmable) and two hazard lights are provided on the roof of the cabin.
A magnetic compass is installed for additional heading information.

The left area holds:

- (Pitch) Trim switch
- PFD Garmin GDU 460
- Fuel Pump switch
- AP Master switch (if installed)
- Ignition key
- Master and Generator switches
- Autopilot control panel (if installed).
- Choke Push

The central area holds:

- Audio panel (if installed)
- Radio VHF/COM/NAV
- Fuel selector
- Flap control switch
- Day/ Night switch (if installed)
- Instrument dimmer (if installed)
- Throttle friction knob.
- Backup instruments (if installed)

- Altimeter and airspeed indicators (if installed)

The right area holds:

- ELT
- External lights switches: Landing light, Strobe lights, Nav lights
- Breakers panel (on right side)
- Engine instrument: RPM, flap angle, voltimeter, coolant temperature, oil temperature and pressure, and fuel quantity indicators.
- Avionic Master switch
- Cabin heat knob.

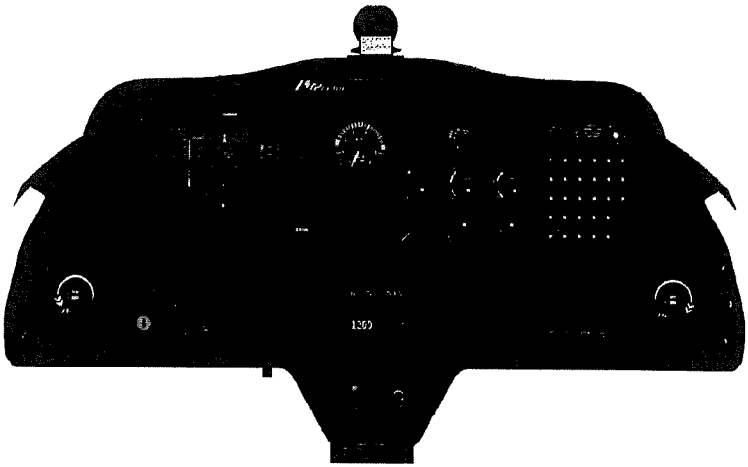

Figure 1 - Instrument Panel

Section 2 - Operating Limitations

Refer to Section 2 of this POH

Section 3 - Weight & Balance

Refer to Section 3 of this POH

Section 4 - Performance

Refer to Section 4 of this POH

Section 5 - Emergency Procedures

The following emergency procedure is added to those reported in the basic POH.

5.1. G3X Touch Failure

In the event of a display failure, flight and navigation data are obtained from the magnetic compass and, if installed, the altimeter and airspeed indicator.

CAUTION

If altimeter and air speed indicator are not installed, use stall warning for airspeed reference and external reference for altitude.

In case of no altimeter and air speed data, Land as soon as practical.

Section 6 - Normal Procedures

Refer to Section 6 of this POH

Section 7 - Ground Handling & Service

Refer to Section 7 of this POH

Section 8 - Placard and Markings

Refer to Section 8 of this POH

SUPPLEMENT No. S3

BRS - 6 Ballistic Recovery Parachute

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5	18/06/2021
6	18/06/2021

Introduction

This Supplement contains supplemental information to operate the aircraft in a safe and efficient manner when equipped with BRS – 6 Rescue Ballistic Parachute Type 1050.

Section 1 - General

The BRS Rocket Charged Parachute Rescue System gives you the opportunity to rescue yourself and the aircraft regardless of height, speed and nose position.

The BRS system consists of a parachute, a solid propellant rocket to deploy the parachute, a rocket activation handle, a container, and a harness that connects the parachute to the structure of the aircraft. One box contains the parachute and the solid propellant rocket, this box is mounted on the aircraft frame .

The parachute system is activated by an activation handle, located between the occupant seats under the fuel tank selector. Pulling the activation handle ignites a rocket that exits the fuselage through an exit panel behind the canopy of the aircraft and is indicated externally. The rocket pulls the entire parachute package out of its container at once.

WARNING

For the owner of aircraft equipped with a BRS system it is mandatory to refer to BALLISTIC RECOVERY SYSTEMS, General Installation Guide for BRS-6 Emergency Parachute Recovery Systems (P/N 020001-03 Last Revision). Failure to maintain and/or use the BRS could result in personal injury or even death to you or your passengers, and damage to your aircraft.

Section 2 - Operating Limitations

Refer to Section 2 of this POH

Section 3 - Weight & Balance

Refer to Section 3 of this POH

Section 4 - Performance

Refer to Section 4 of this POH

Section 5 - Emergency Procedures

The following emergency checklists **are added** to those reported in the basic POH.

5.1 Rescue System Deployment

Rescue system should be deployed in the event of a life-threating emergency where parachute activation is determined to be safer than continued flight and landing.


CAUTION

Rescue system should only be activated when any other means of handling the emergency would not protect the occupants from serious injury.


CAUTION

Successful deployment depends on aircraft attitude and airspeed: greater deployment altitude yields better chances for successful deployment

Shown below the procedure to be followed:

Airspeed	**MINUM POSSIBLE** (Max 137 KIAS)
Magnetos:	**OFF**

Pull activation handle firmly and to end-travel

After deployment

Fuel selector:	**OFF**
Master Switch:	**OFF**
Seat Belts and Harnesses:	**TIGHTEN**

Before impact

Assume emergency landing body position

The emergency landing body position is assumed by placing both hands on the lap, clasping one wrist with the opposite hand, and holding the upper torso erect and against the seat backs.

After the airplane comes to a complete stop, evacuate quickly and move upwind


CAUTION

In case of low altitude emergency where parachute activation is required, the engine can be shut down after rescue system activation.

Section 6 - Normal Procedures

The following normal procedures **are added** to those reported in the basic POH.

6.1 Cabin Inspection

Emergency parachute release handle	Safety pin removed
Emergency parachute release handle access is provided	Make sure unobstructed

6.2 Starting Engine

Emergency parachute release handle	Check Safety Pin removed

6.3 Post-Flight Check

Emergency parachute release handle	Safety Pin inserted

Section 7 - Ground Handling & Service

Refer to Section 7 of this POH

Section 8 - Placard and Markings

The following Marking and Placards **are added** to those reported in the basic POH.

Emergency Parachute:

On the cover of the emergency parachute, install:

On the aircraft adjacent to the doors or places where the occupants enter the aircraft or where rescue personnel can readily see it, install:

Above the emergency parachute activation handle, install:

SUPPLEMENT No. S4

Garmin Automatic Flight Control System

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Introduction

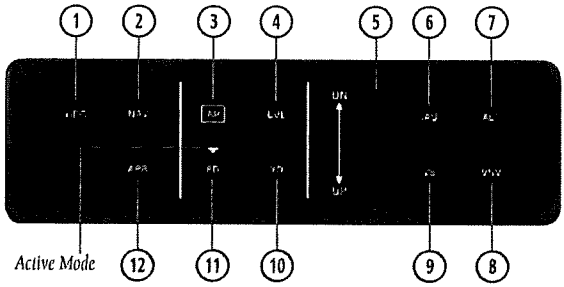
This Supplement shows the main features, characteristics and procedures to operate the Garmin AFCS. The operator must be fully aware of all the official documentation provided by GARMIN concerning the autopilot system.

Section 1 - General

An Automatic Flight Control System (AFCS) is typically comprised of two major components: A Flight Director (FD) and Autopilot servos. The Flight Director provides pitch and roll commands to the autopilot servos. These pitch and rolls commands are displayed on the PFD as Command Bars. When the Flight Director is active the pitch and roll commands can be hand-flown by the pilot or when coupled with the autopilot, the autopilot servos drive the flight controls to follow the commands issued by the Flight Director. The Flight Director operates independently of the autopilot servos, but in most cases the autopilot servos can not operate independent of the Flight Director. On G3X installations that do not have a separate and independent Flight Director, the Flight Director is always coupled to the autopilot. As shown, the main autopilot components are the G3X displays, the GMC305 mode controller, the elevator servo GSA28 and roll servo GSA 28. The Tecnam P92MKII also includes the interface components such as A/P Master Switch, control rods and related components. The Tecnam P92MKII is equipped with an AP MASTER switch. It is not provided with T/O - GO AROUND mode switch. This must be taken into account when performing the procedures described in the Garmin Pilot's guide. G3X can communicate with Garmin AFCS. On Tecnam P92 MKII, the GMC305 mode controlled is installed to provide the most flexible way to control the autopilot modes and functions.

The main control button functions of GMC305 are:

1) Heading Select Mode;
2) Navigation Mode;
3) AP engage/disengage;
4) LEVEL mode;
5) Nose UP/DN wheel to adjust the mode reference in pitch hold, vertical speed, indicated airspeed, and altitude hold;
6) IAS Mode select/deselect;
7) ALT Mode select/deselect;
8) VNV Mode select/deselect;
9) VS Mode select/deselect;
10) YAW DAMPER - NOT ACTIVE;
11) Flight Director Mode select/deselect;
12) APR Mode select/deselect;



The GMC305 is installed on the lower central panel section .
Tecnam P92 MKII installation provides the installation of pitch and roll servos are connected to the control system through rigid rods. No pulleys or cable are installed so that the maintenance is easier and inspections immediate.

Section 2 - Operating Limitations

The following limitation shall apply when the Tecnam P92MKII is equipped with Garmin AFCS, in addition to the standard POH Section 2:

1) The autopilot must not be used for final approach procedure. In order to know more about the APR modes for LOC/ILS approaches refer to the latest Garmin Pilot's Guide;
2) During autopilot operations the pilot must remain seated on its place with safety belts secured, continuously monitoring the flight instruments;
3) The use of autopilot with flap extended more than T/O position is forbidden;
4) A/P Master Switch must be OFF during Takeoff and final approach (decision height 200'AGL);
5) Autopilot must be operated during normal cruise and descent only above 1.000ft
6) Do not set parameters in terms of vertical speed which go above the climb rates shown in the Section 4.

Section 3 - Weight & Balance

Refer to Section 3 of this POH

Section 4 - Performance

Refer to Section 4 of this POH

Section 5 - Emergency Procedures

The following emergency procedures shall apply when the tecnam P92MKII is equipped with Garmin AFCS, in addition to the standard POH Section 5:

CAUTION

In event of autopilot malfunction, or when the system is not performing as expected or commanded, take immediately the aircraft control disconnecting the autopilot which must be set inoperative until the failure has been identified and corrected.

5.1. Failure to hold selected function

- Control Stick	Grasp firmly to override the A/P servos
- A/P Master Switch	OFF
- Aircraft Control	Establish
- Appropriate Circuit Braker	PULL

Section 6 - Normal Procedures

The following normal procedures shall apply when the Tecnam P92 MKII is equipped with Garmin AFCS, in addition to the standard POH:

6.1 Before Take-off checklist

1) Autopilot	ENGAGE (using AP/CWS button, or AP button on mode controller)
2) Flight controls	CHECK (verify autopilot can be overpowered in both pitch and roll)
3) A/P Master Switch	OFF (verify autopilot disengages)
4) Yaw damper	OFF (if installed) (verify yaw damper disengages and audio alert is heard)
5) Flight director	SET FOR TAKEOFF (select VS mode or push FD Button to turn off the Flight Director)
6) Flight controls	CHECK (verify autopilot servos are disengaged from pitch, roll, and yaw controls, and all controls move freely)
7) Elevator trim control	SET FOR TAKEOFF

Section 7 - Ground Handling & Service

Refer to Section 7 of this POH

Section 8 - Placard and Markings

Refer to Section 8 of this POH

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