PAC 750XL

Hamilton Airport, Private Bag HN3027, Hamilton, New Zealand
Telephone +64 7 843 6144 - Fax 0-7 843 6134
Email - pacific@aerospace.co.nz
Web site - www.aerospace.co.nz

PAC 750XL

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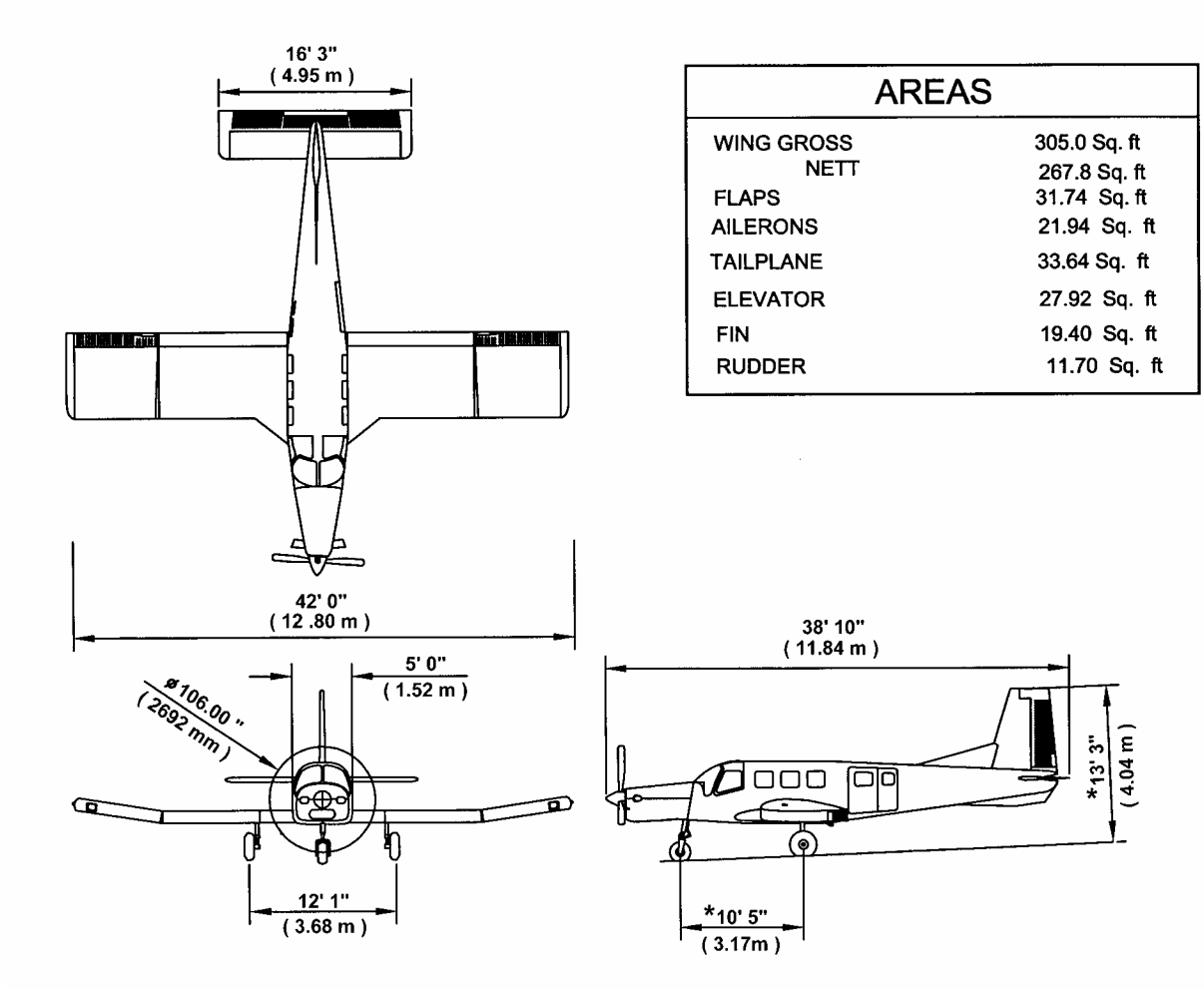
INTRODUCTION

The purpose of this specification is to provide general information about the PAC 750XL. Pacific Aerospace Corporation Limited reserves the right to revise the details of this specification as required to reflect changes in build standards and the availability of equipment. Detailed specific information can be obtained from:

Pacific Aerospace Corporation Limited
Private Bag 3027
Hamilton New Zealand

Telephone: 64 7 843 6144
Facsimile: 64 7 843 6134
www.aerospace.co.nz
Email: pacific@aerospace.co.nz

PRINCIPAL DIMENSIONS AND AREAS



AREAS	
WING GROSS	305.0 Sq. ft
NETT	267.8 Sq. ft
FLAPS	31.74 Sq. ft
AILERONS	21.94 Sq. ft
TAILPLANE	33.64 Sq. ft
ELEVATOR	27.92 Sq. ft
FIN	19.40 Sq. ft
RUDDER	11.70 Sq. ft

* Varies with aircraft loading (Figures assume mid weight and CG)

MINIMUM TURNING RADIUS: 40’ 3 ¼”

PROPELLER GROUND CLEARANCE: At normal operating weights, CG limits, tire inflation and oleo extension a minimum of 7”.

ENGINE

NUMBER OF ENGINES: 1

MANUFACTURER: Pratt & Whitney, Canada, Incorporated

ENGINE MODEL NUMBER: PT6A-34

ENGINE TYPE: Free turbine, propulsion engine incorporating a multi-stage compressor, single stage compressor turbine, and independent single stage power turbine driving the output shaft through integral planetary gearing. A singular annular combustion chamber, 14 simplex fuel nozzles and two igniter plugs comprise the combustion system. Engine accessories are grouped on the rear of the engine.

HORSEPOWER: 750 shaft horsepower

TIME BETWEEN OVERHAUL: 4000 hours (Hot Section Inspection interval 1500 hours)

PROPELLER

NUMBER OF PROPELLERS: 1

PROPELLER MANUFACTURER: Hartzell Propeller Incorporated

PROPELLER MODEL NUMBER: HC-B3TN-3D/T10282NS+4

NUMBER OF BLADES: 3

PROPELLER DIAMETER: Maximum 106 inches
Minimum 106 inches

PROPELLER TYPE: Constant speed, full feathering and reversible

PROPELLER ANGLES: Feathered 86.3^0
Low Pitch 18.5^0
Maximum Reverse -8.1^0

TIME BETWEEN OVERHAULS: 3000 hours or 5 years whichever occurs first

FUEL

FUEL CAPACITY

Total Capacity: 861 litres (227.4 U.S. gallons, 1512 lbs)
Total Useable: 841 litres (221 U.S. gallons, 1476 lbs)

TANK	TOTAL CAPACITY	UNUSABLE FUEL	USABLE
FRONT LEFT TANK *	284* litres, 499 lbs 75* U.S. gallons	10 litres, 18 lbs 3 U.S. gallons	274 litres, 481 lbs 72 U.S. gallons
FRONT RIGHT TANK	293 litres, 515 lbs 77 U.S. gallons	10 litres, 18 lbs 3 U.S. gallons	283 litres, 497 lbs 74 U.S. gallons
REAR LEFT TANK	142 litres, 249 lbs 37.5 U.S. gallons	0	142 litres, 249 lbs 37.5 U.S. gallons
REAR RIGHT TANK	142 litres, 249 lbs 37.5 U.S. gallons	0	142 litres, 249 lbs 37.5 U.S. gallons
TOTAL	861 litres, 1512 lbs 227 U.S. gallons	20 litres, 36 lbs 6 U.S. gallons	841 litres, 1476 lbs 221 U.S. gallons

* Includes 26 litres (6.8 U.S. gallons, 45 lbs) of fuel in sump tank

APPROVED FUELS*	
Jet A /A1 (ASTM D1655)	
Jet B (ASTM D1655)	
JP-4 (MIL-T-5624)	Contains fuel system ice inhibitor
JP-5 (MIL-T-5624)	Contains fuel system ice inhibitor
F-40 (NATO Code)	Contains fuel system ice inhibitor
F-34 (Nato Code)	Contains fuel system ice inhibitor
F-44 (Nato Code)	Contains fuel system ice inhibitor

* Refer to P&WC S.B. No. 1344 for specific details.

MAXIMUM CERTIFIED WEIGHTS

MAXIMUM CERTIFIED TAKEOFF WEIGHT: 7500 lbs (3410 kgs)

MAXIMUM CERTIFIED LANDING WEIGHT: 7125 lbs (3231 kgs)

TYPICAL AIRPLANE WEIGHTS

BASIC EMPTY WEIGHT: 3100 lbs (1405 kgs)

MAXIMUM USEFUL LOAD: 4400 lbs (1995 kgs)
(will vary with basic empty weights)

CABIN AND ENTRY DIMENSIONS

CABIN WIDTH: (maximum width)	54” (137.16 cm)
CABIN LENGTH: (measured from behind pilot’s seat to rear cabin bulkhead)	158” (401.32 cm)
CABIN HEIGHT: (maximum Height)	56” (142.24 cm)
ENTRY WIDTH: (varies depending on door type)	50”-48” (127 cm – 121.92 cm)
ENTRY HEIGHT:	47” – 45” (front of door frame) (119.38 cm – 114.3 cm) 41.3” – 39.3” (rear of door frame) (104.90 cm – 99.82 cm)
SILL HEIGHT: (oleos fully extended)	44” (111.76 cm)
CABIN VOLUME:	225 cubic ft (rear crew seats)
DISTANCE CARGO DOOR TO HORIZONTAL STABILISER:	121.75” (309.24cm)

SPECIFIC LOADINGS

WING LOADING:	24.59 lb/ft^2
POWER LOADING:	10 lbs/shp

WING

DIHEDRAL CENTRE WING:	0°
DIHEDRAL OUTER PANELS:	8°
INCIDENCE:	2°

LANDING GEAR

TYPE:	Non retracting, nose wheel steering
NOSE WHEEL STEERING RANGE:	20 degrees to the left and right of neutral
MAIN TIRES:	8.50 x 10”
NOSE TIRES:	8.50 x 6”

STANDARD EQUIPMENT

POWER PLANT

Pratt & Whitney PT6A-34, 750 SHP Engine
Oil Cooler
High Energy Ignition System
Chip Detector and Warning System
Washable Intake
Exhaust Covers
Engine Intake Blank
Cowls, Upper and Lower, Oil Access Panel
Inertial Particle Separator and Annunicator Light
Overspeed Governor
Fuel Environmental Collector Tank
Hartzell 3 Blade Propeller, Metal, Constant Speed, Fully Feathering and Reversing
Propeller Governor
Propeller Spinner and Backplate
Propeller Restraint

FUSELAGE

Aluminimum Alloy Frames, Longerons, Stringers and Skin Panels Riveted Together
External Lap Joints Sealed With PRC
Sound Proofing

WINGS

Alloy Construction
External Lap Joints Sealed with PRC
Single Element Spar, Life 52,000 hours, Doubler 39,000 Hour Life
Fibreglass Tip Fairings

FIN AND RUDDER

Alloy Structure
External Lap Joints Sealed With PRC

HORIZONTAL STABILIZER

Alloy Structure
External Lap Joints Sealed With PRC

FUEL SYSTEM

Four Integral Fuel Tanks, Fuel Cap Access On Each Tank
Capacitance Fuel Measuring System In Each Tank
Sump Tank
Tank Drains With Fuel Sampler Cup
Airframe Fuel Filter
Electric Fuel Pump
"Jet Pumps"
Fuel Shut Off Valve
Fuel Pressure Warning
Filter Restriction Warning System
Low Fuel Level Warning System

FLIGHT CONTROLS

Conventional Manually Operated Ailerons, Rudder and Elevator
Dual Control Columns – Right Control Column Removable
Control Lock
Elevator Trim, Electric With Manual Backup
Aileron Trim, Electric
Rudder Trim, Manual
Flaps, Single Slotted, Electric
Engine Controls – Power Lever, Propeller Lever, Fuel Condition Lever
Brakes, Hydraulic Wheel, Toe Operated
Park Brake

AVIONICS

Audio Panel – Garmin GMA 340
VHF Com/Nav/GPS – Garmin GNS 430
VHF Com/GPS – Garmin GNC 250XL
Transponder – Garmin GTX 327
Avionic Master Switch
Avionics Cooling Fan

FLIGHT INSTRUMENTS

Airspeed Indicator
Artificial Horizon, Electric
Altimeter
Turn and Bank Indicator
Directional Gyro, Electric
Vertical Speed Indicator
Course Direction Indicator
Clock, Digital, 2 Time Zones, Stop Watch, Warning Lights
Outside Air Temperature Indicator, Digital
Magnetic Compass
Pitot System, Heated
Static System and Alternate Static System

ENGINE INSTRUMENTS

Fuel Computer – Fuel Pressure, Fuel Flow, Fuel Remaining, Fuel Used, Time To Empty
Inter-Turbine Temperature Indicator, Digital/ Analogue
Gas Generator Indicator, Digital/Analogue, Flight Timer and Tach Timer
Propeller Speed Indicator, Digital/ Analogue, Flight Timer and Tach Timer
Oil Pressure and Temperature Indicator, Digital/Analogue
Torque Indicator, Digital/Analogue
Fuel Quantity Indicators, Digital/Analogue
Oil Pressure Warning Light

ELECTRICAL

Battery 24 Volt, 43 Amphere, Sealed Lead Acid
Volt/Ammeter, Digital, High Volts Warning, Discharge Warning
Master Switch
Generator Switch, Reset Function
Starter Generator
Generator Control Unit
Circuit Breakers and Combination Switch/Circuit Breakers
Ground Power Receptacle
Generator Warning System
Start Switch
Ignition Switch
Voltage Regulator

EXTERNAL LIGHTING

Landing/Taxi Lights (2), Wing Mounted
Navigation Lights, Wing Tip and Tail
Strobe Lights, Wing Tip

INTERNAL LIGHTING

Annunciator Panel
Dimming Controls
Internally Lit Instruments
Post Lights

ENVIRONMENTAL

Ventilation, Ram Air

INTERIOR

Adjustable Seats, Pilot, Two
Pilot Seat Belts and Shoulder Harness
First Aid Kit
Fire Extinguisher
Crash Axe
Cabin Windows
Seat Rails and Cargo Tie Down Points
Interior Linings
Emergency Locator Beacon

EXTERIOR

Crew Entry Doors
Cargo Doors, Side Hinged
Landing Gear, Nose and Mains, Fixed
Jacking Points.
Steerable Nose Wheel
Tires and Tubes 8.5 x 10” main, 8.5 x 6” nose
Stall Warning System
Tie Down Points, Wing and Tail
Towbar

PAINT

Exterior and Interior Primed
Exterior Painted, Standard Based on Base Colour and Two Colour Striping, Customer Preferences Available

OPTIONAL EQUIPMENT

AVIONICS

The following equipment is available in addition to the standard equipment avionics.

VHF Com/Nav/GPS – One Fitted As Standard, Second Available
ADF, Bendix/King KR87 With KI 229 or KI 227 Indicator
DME, Bendix/King KN62
Weather Radar
TCAD, Ryan 9900 or 9900A/B
Stereo Player (through audio panel or speakers)
MD41 Annunciator
Press To Talk For Right Seat On Instrument Panel

FLIGHT INSTRUMENTS (LEFT PANEL)

HSI, Bendix/King KCS 55A Compass System, Instead of Directional Gyro
Radar Altimeter
Artificial Horizon, Standby, Electric Or Vacuum
Vacuum System
Assigned Altitude Indicator

FLIGHT INSTRUMENTS (RIGHT PANEL)

Airspeed Indicator
Artificial Horizon, Electric or Vacuum
Altimeter
Turn and Bank Indicator
Directional Gyro, Electric or Vacuum
Vertical Speed Indicator
Independent Pitot Static System

ENVIRONMENTAL

Heater
Air-Conditioning
Passenger Oxygen

ENGINE TREND MONITORING

Shadin Trend Monitoring

SKYDIVING

External Step
Sliding Door, Lexan
External Grab Rail
Spotting/Jump Lights
Static Line Hardpoints
Internal Grab Rails
Lap Belts for Skydivers
Mic Jack Point Adjacent To Rear Door

PASSENGER

Passenger Seats, Accommodate Up To 9 Persons Plus Pilot In Cabin

AUTO PILOT

STEC 55

GENERAL

Nosewheel Mudguard
Wander Light
Handheld Mic Jack
PA System

PERFORMANCE

MAXIMUM OPERATING ALTITUDE	20,000 ft. (6095 m)
STALL SPEEDS, IAS AT 7500 LBS	
Flaps up, power idle	69 kts.
Flaps landing, power idle	58 kts.
TAKEOFF Sea level, 7500 lbs (3405 kgs) MTOW, carrying useful load of 4400 lbs (1997 kgs)	
Ground roll	1244 ft. (379 m)
Total distance over 50 ft. (15 m) obstacle	1695 ft. (516 m)
CLIMB PEFORMANCE Sea level, 7500 lbs (3405 kgs) MTOW, carrying useful load of 4400 lbs (1997 kgs) using maximum continuous power	
Climb to 12,000 ft. (3657 m) from brakes release	12 minutes
LANDING PERFORMANCE Maximum landing weight, carrying useful load of 4025 lbs (1827 kgs) 3 degree glidepath, over 50 ft (15 m) obstacle, no reverse (FAR 23.75 (a))	2016 ft (614 m)
CRUISE 10,000 ft, ISA + 20 10,000 ft, ISA	 169 kts 168 kts
RANGE 7500 lbs (3405 kgs) MTOW, carrying useful load of 4400 lbs (1997 kgs), includes fuel for start, taxi, takeoff, climb, descent and 45 minutes reserve remaining after landing	582 nautical miles
ENDURANCE 7500 lbs (3405 kgs) MTOW, carrying useful load of 4400 lbs (1997 kgs), includes fuel for start, taxi, takeoff, climb, descent and 45 minutes reserve remaining after landing	5 hours
BEST RATE OF CLIMB	95 KIAS
BEST ANGLE OF CLIMB	85 KIAS
MAXIMUM DEMONSTRATED CROSSWIND	14 kts

DESIGN

The PAC 750XL is certified to FAR Part 23 in the Normal Category.

MAXIMUM OPERATING SPEED 170 KIAS

MANEUVRING SPEED 131 KIAS

FLAP SPEEDS

0-20 degrees	120 KIAS
21-40 degrees	110 KIAS

FLIGHT LOAD FACTOR LIMITS

	g	g
FLAPS UP:	+3.47	-1.39
FLAPS TAKE OFF:	+3.0	-0
FLAPS LANDING:	+3.0	-0

AIRCRAFT DESCRIPTION

AIRFRAME

The simplicity and robust nature of the PAC 750XL structure results in unequalled reliability and maintenance down time.

The PAC 750XL is an all metal, riveted, stressed skin construction with a single cantilever low wing and tricycle undercarriage. The single engine is attached to a welded tubular steel mount. Immediately aft of the firewall is the cockpit section designed to accommodate up to two pilots side-by- side with access via hinged doors on either side of the cockpit.

Aft of the cockpit the semi- monocoque construction fuselage provides a main cargo area. The fuselage structure comprises aluminium alloy frames, longerons, stringers and skin panels riveted together to form the monocoque structure.

The empennage comprises a vertical fin, rudder, manually operated rudder trim, horizontal stabilizer, elevator, electrically operated elevator trim with a manual over-ride , dorsal fin and ventral fin.

The wing comprises a centre wing with left hand and right hand outer panels. The wing is a high lift wing with a constant chord and a constant aerofoil section, excluding the root extension. The centre wing has no dihedral whilst the outer panels have a dihedral angle of 8º. An incidence angle of 2º is maintained throughout the span. The centre wing houses the four fuel system storage tanks which are integral with the structure. Mating of the centre wing to fuselage is at the one piece main beam and the split rear beam. The outer panels are attached fore and aft to the centre wing and are terminated at their extremities with fibreglass tips which contain the navigation and strobe lights.

Single slotted flaps are fitted at the trailing edge of the centre wing span. Conventional ailerons with balance tabs on both ailerons and an electrically operated trim on the left hand aileron are attached to the outer panels.

FLIGHT CONTROLS

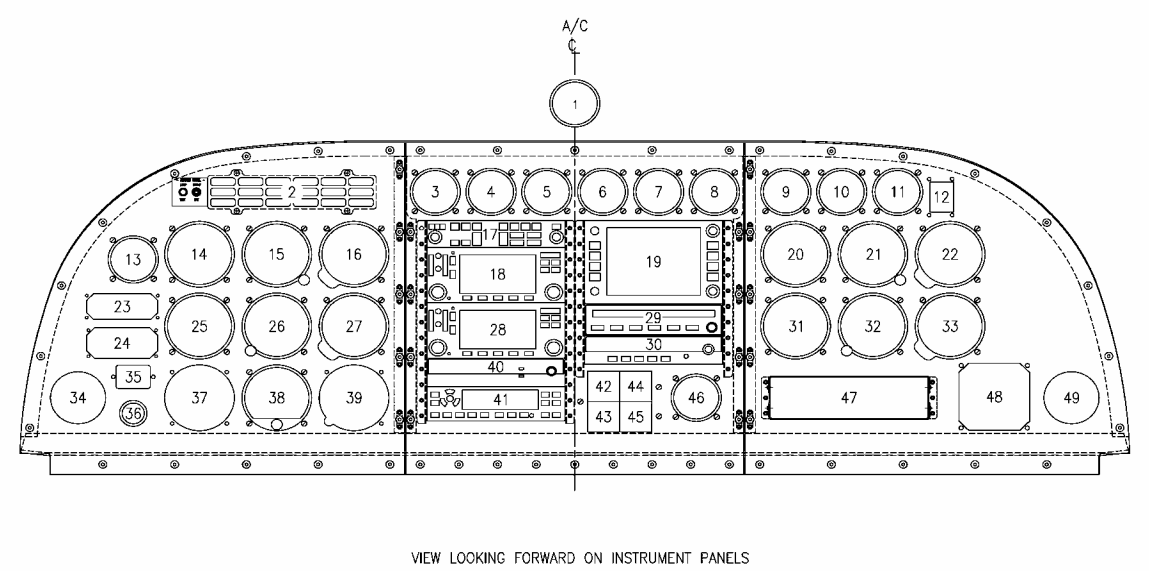
Conventional manually operated flight controls comprising rudder, elevator and ailerons are fitted to the PAC 750XL. Flight control movement is achieved through movement of a control column in either the left or right pilot position. The right hand control column is removable. There is a rudder/aileron interconnect comprising a spring connecting the rudder steering torque tube and control column.

The aileron system comprises cables, quadrants, push rods and torque tubes. Primary stops are located on the wing and secondary stops on the base of the control column. The ailerons are fitted with balance tabs. An electrically operated trim tab is fitted to the left hand aileron and is operated by left and right movement of a switch on the control column. The trim position is indicated in an instrument in the centre of the instrument panel.

The elevator is controlled by fore and aft movement of the control column. Movement of the control column operates the elevator bellcrank by means of tensioned cables running in pulleys. Travel limits are determined by adjustable stops. The primary stops are located in the right hand side of the cockpit wall. The secondary stops are located in the tailcone. An electric trim tab is fitted on the trailing edge of the elevator and is controlled by fore and aft movement of a switch on top of the control column. A manually operated over-ride trim is provided and is operated by a handle mounted above the pilot's seat position. The trim position is indicated in an instrument in the centre of the instrument panel. A trim interrupt switch is located in the pedestal in the centre of the cockpit. The red coloured switch when moved forward will isolate electrical power to the elevator trim in the event of an uncommanded movement of the elevator trim.

The rudder and nose wheel steering control are linked together at the nose wheel steering tube which is connected to the "pendulum" mounted pedals by adjustable push rods and to the rudder torque tube by tensioned cables. Travel limits are determined by adjustable stops which contact the rudder aft bellcrank and fixed stops on the rudder pedals. The geometry of the nose wheel steering linkage ensures that the rudder and nose wheel steering are only connected when the aircraft is on the ground, i.e. when the nose leg is wholly or partially compressed. As the nose leg extends the steering is progressively reduced, when full extension is reached the nose wheel locks in the centred position and the pedals control the rudder. A manual rudder trim is fitted and is controlled by movement of a wheel located in the overhead panel above the pilot's seat position. The trim position is indicated in an instrument in the centre of the instrument panel.

INSTRUMENT PANEL



VIEW LOOKING FORWARD ON INSTRUMENT PANELS

KEY					
1	Compass	18	GPS VHF NAV/COMM	35	HSI Slaving Control
2	Annunciator Panel	19	Radar	36	Vacuum Gauge
3	Torque Indicator	20	Airspeed Indicator	37	Radio Magnetic Indicator
4	Np Indicator	21	Artificial Horizon	38	Artificial Horizon
5	ITT Indicator	22	Altimeter	39	Radar Altimeter
6	Ng Indicator	23	GPS Annunciator	40	Distance Measuring Equipment
7	Oil Temperature/Pressure Indicator	24	Auto Pilot Annunciator	41	Transponder
8	Fuel Pressure/Flow Indicator	25	Turn and Bank	42	Aileron Trim Indicator
9	Fuel Contents Indicator Front Tanks	26	Directional Gyro	43	Rudder Trim Indicator
10	Fuel Contents Indicator Rear Tanks	27	Vertical Speed Indicator	44	Elevator Trim Indicator
11	Outside Air Temperature Indicator	28	GPS VHF NAV/COMM	45	Flap Indicator
12	Emergency Locator Beacon Switch	29	Auto Pilot	46	Volt/Ammeter
13	Clock	30	Automatic Direction Finder	47	Stereo
14	Airspeed Indicator	31	Turn and Bank	48	Engine Condition Trend Monitoring
15	Artificial Horizon	32	Directional Gyro	49	Cabin Air Vent
16	Altimeter	33	Vertical Speed Indicator		
17	Audio Panel	34	Cabin Air Vent		

The instrument panel as shown above is divided into four general areas; left hand flight panel, right hand flight panel, avionics panel and engine and fuel systems instrument/annunciator panel. The instrument panel includes both standard and optional equipment. The left hand panel contains the minimum flight instruments required for flight with space to accommodate

additional optional instruments and equipment. The avionics panel contains the minimum avionics equipment required for flight with space to fit additional optional equipment. The right hand flight panel is available for fitment of optional flight instruments and equipment.

The annunciator panel is mounted in the instrument panel and provides an indication to the pilot of the status of various aircraft systems. The annunciator panel is fitted with a day/night dimming capability and a press to test facility.

FLIGHT INSTRUMENTS

The following instruments are located in the instrument panel and fitted as standard equipment:

Airspeed Indicator
Artificial Horizon
Altimeter
Turn and Bank Indicator
Directional Gyro
Vertical Speed Indicator
Course Direction Indicator
Clock
Outside Air Temperature Indicator

GROUND CONTROL

Ground control is achieved using the rudder pedals which are connected to the nose wheel. Moving the rudder pedals left and right will turn the nose wheel in the natural sense.

WING FLAPS

The single slotted flaps, which span the centre wing either side of the fuselage are electrically operated and driven. The flaps are extended and retracted by positioning the flap control lever located in the centre pedestal. The selector has a 20^0 and 40^0 position. An indicator located in the centre of the instrument panel indicates the flap position. The flaps electrical system is protected by a circuit breaker. A red warning light will illuminate in the annunicator panel when the electrical power supply to the flaps fails. There is a micro- switch in the flap system to detect any flap asymmetry situation. The micro-switch will disconnect power from the flap system to prevent flap asymmetry in the event of a mechanical failure in the flap system.

LANDING GEAR

The fixed tricycle landing gear comprises two main assemblies attached to the centre wing and a steerable nose assembly attached to the firewall. A shimmy damper is fitted to the nose undercarriage. All units incorporate an oleo pneumatic shock strut. Brakes are fitted to the main assemblies only.

The main landing gear shock struts are attached to heavy duty castings forming part of the centre wing structure at the intermediate rib positions. The strut charging valves pass through the upper skin panels and are accessible from the top of the wing. Shock strut cylinders are

divided into two chambers, the lower chamber in which the piston operates is separated from the upper chamber by a baffle with a metered orifice to control the fluid displaced by the piston movement thus providing the damping effect. A detachable bearing with inner and outer 'O' ring seals and a scraper ring is located in the base of the lower chamber to act as a guide and provide external sealing for the piston. The scraper ring protects the piston seal from damage that could be caused by foreign material adhering to the exposed portion of the piston. Steel sockets at the lower end of the pistons provide attachment for the wheel axles and brake anchor plates. The lower arms of the torque links are bolted by brackets to the sockets whilst the upper arms are attached to alloy lugs at the base of the cylinders. A nylon bumper pad is set into each of the upper arms to contact the pistons and limit their extension when the wheels are clear of the ground.

The nose landing gear is located between two reinforcing angles on the forward face of the firewall. The steerable nose wheel is actuated by a steering post and mechanical linkage attached to the piston. With weight on the nose wheel the linkage assumes a geometric configuration through which direct control of the nose wheel is achieved by rotating the steering post by means of pushrods connected to the rudder pedals. When weight is removed, as in flight, the linkage extends disengaging the steering, locking the wheel in a line of flight position and freeing the rudder pedal for control of the rudder only. Bolted to an alloy socket at the base of the piston are the nose wheel fork and the lower portion of the steering linkage, the upper portion of the linkage connects to the steering post which in turn is supported at its lower end to the shock strut cylinder in a trunnion type bearing. The top of the steering post is located in a bearing attached to the rear face of the firewall. A nylon bumper pad is set in the lower portion of the linkage to limit the extension of the piston when the wheel is clear of the ground, in addition as a safety feature in the event of a linkage failure, two cables are connected between the cylinder and the nose wheel fork to prevent the nose wheel separating from the aircraft.

Brakes fitted to the main gear are hydraulically operated by applying toe pressure to the brake pedals incorporated in the top portion of the rudder pedal assembly. Rotation of either pedal actuates a master brake cylinder resulting in braking action to the disc brake unit on the corresponding wheel. Differential or simultaneous braking action can be achieved as desired.

A parking brake control knob is located in the pedestal in the centre of the cockpit. The parking brake is set by simultaneously depressing both the brake pedals, pulling and holding out the park brake knob, then releasing the brake pedals. The parking brake is released by depressing both toe brake pedals and pushing the parking brake control knob fully in.

CARGO COMPARTMENT

The baggage/cargo compartment extends from the area immediately behind the pilot and front passenger seats to the rear bulkhead aft of the cargo door. The baggage/cargo compartment floor has provision for passenger seats and cargo tie down points. There are three windows on each side of the baggage/cargo compartment. Access to the baggage/cargo compartment is via the entry door on the left hand side of the fuselage behind the trailing edge of the wing.

SEATS, SEAT BELTS AND HARNESSES

The pilot and front passenger seat may be moved fore and aft.

The pilot and front passenger seats are equipped with lap seat belts and shoulder harnesses which are mounted directly on to the seat. The shoulder harness is fitted to an inertia reel unit.

DOORS, WINDOWS AND EXITS

The passenger/cargo door is located on the left hand side of the fuselage behind the wing trailing edge. The door is approximately 50" wide and 47" high at the front and 41.3" high at the rear. The door may be locked, unlocked, opened and closed from both inside and outside.

A sliding parachute door is available. The door can be opened and closed in flight.

The PAC 750XL is fitted with two "gull wing" crew entry doors adjacent to the pilot and front passenger seats. These doors are also emergency exit doors. The doors open upwards with assistance of gas filled struts. Both doors pivot on bearing blocks attached to the cockpit closure. To doors can be opened, closed, locked and unlocked from inside and outside the aircraft.

Two blow formed acrylic windscreens are attached to the centre pillar and cockpit composite structure by adhesive and locating screws.

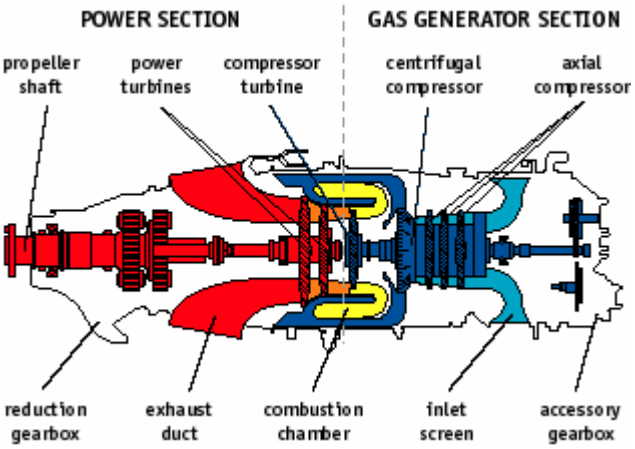
Windows are mounted in the crew entry doors and there are three windows on each side of the baggage/cargo compartment. All are made from acrylic sheet attached to the structure by adhesive and locating screws.

CONTROL LOCK

A control lock capability is provided. The control column lock fits to the left hand control column and lower switch panel and when in place it covers the aircraft MASTER switch preventing aircraft operation. The control lock is removed and stowed when not in use.

ENGINE

The airplane is powered by a Pratt & Whitney Canada PT6A-34 750 shaft horsepower free turbine engine, utilizing two independent turbine sections: one driving the compressor in the gas generator section and the second driving the propeller shaft through a reduction gear box.



The air enters the engine through the inlet screen; it is then compressed by a multi-stage compressor and fed to the combustion chamber where it is mixed with fuel and ignited. The hot gas expands through two turbine stages; the first drives the compressor and the accessories; the second, mechanically independent from the first, drives the propeller shaft by means of a reduction gearbox. Finally, the hot gas is discharged through the exhaust ducts. The engine is self sufficient since the gas generator driven oil system provides lubrication for all areas of the engine, pressure for the torquemeter and power for the propeller pitch control. Three isolators or shock mounts attach the engine to a tubular steel engine mount assembly which is bolted to the firewall. The engine is enclosed by detachable upper and lower cowls which are cut-away on the joint line (both sides) to provide clearance for the exhausts. The upper cowl has a panel which provides access to the oil dipstick and filler. The lower cowl contains an engine air intake and inertial separator at the front of the cowl and NACA ducts for the oil cooler (right hand side rear), ambient air supply to cockpit (ducts left and right forward of the exhaust pipes) and for accessories cooling (left hand side behind exhaust pipe). The cowl halves are held together by 8 lever cowl fasteners. Vents and drains for components of the engine are provided by pipes and hoses routed overboard from the engine compartment. The 6 pipes are located on the firewall behind the nose wheel.

The engine fuel system comprises an oil-to-fuel heater, fuel pump, fuel control unit, flow divider and dump valve, dual fuel manifold with 14 simplex nozzles, fuel drain valves and interconnecting pneumatic sense lines. In normal operation fuel from the aircraft tanks is drawn to the oil-to-fuel heater by the engine driven fuel pump. Heated fuel then flows to the engine driven fuel pump. The fuel pump delivers high pressure fuel to the fuel control unit. The fuel control unit determines the correct fuel schedule for engine steady state operation and acceleration and returns the unused fuel to the pump inlet. Metered fuel exiting the fuel control unit flows to the flow divider which supplies the metered fuel to the primary and secondary manifolds as required. Fuel is then atomized by the 14 simplex nozzles.

An environmental fuel container is mounted on the firewall and collects fuel drained from the compressor and combustion sections. A valve in the bottom of the container allows the container to be emptied. If the container is not emptied an overflow pipe allows fuel to drain on to the ground.

The engine lubrication system comprises an oil pump, integrally formed oil tank with the filler cap incorporating a dipstick, ports for the temperature and pressure sensing probes, an oil filter, chip detector and warning system, together with an airframe mounted oil cooler. The lubrication system provides a constant supply of clean oil to the engine bearings, reduction gears,

accessory drives, torquemeter and propeller governor. The oil tank is integrated in the engine air inlet casing. The oil lubricates and cools the bearings and carries extraneous matter to the oil filter where it is precluded from further circulation. The oil is also an anti corrosion agent for the steel bearings and gears. A chip detector is located in the reduction gear box to detect metal particles and warn of metal contamination.

The engine air inlet is located at the front of the engine nacelle below the propeller spinner. Ram air entering the inlet flows through ducting and an inertial separator system and then enters the engine through a circular plenum chamber where it is directed to the compressor by guide vanes. The compressor air inlet incorporates a screen which will prevent entry of large articles, but does not filter the inlet air.

The inertial separator system in the engine air inlet duct prevents moisture particles from entering the compressor air inlet plenum when in bypass mode. The inertial separator comprises two movable vanes and a fixed airfoil which, during normal operation, route the inlet air through a gentle turn into the compressor air inlet plenum. When separation of moisture particles is desired, the vanes are positioned so that the inlet air is forced to execute a sharp turn in order to enter the inlet plenum. This sharp turn causes any moisture particles to separate from the inlet air and discharge overboard through the inertial separator outlet in the lower cowling.

The single quadrant housing the engine controls is located in the centre of the aircraft cockpit under the instrument panel and is accessible from the left and right seats. The power lever and fuel condition lever control the engine and the propeller lever controls propeller speed and feathering. The levers are provided with an adjustable friction damper and are connected by push-pull cables to their respective engine components.

Engine indications are provided by a torque indicator, fuel computer, gas generator speed indicator, oil temperature and pressure indicator and inter-turbine temperature indicator. The indicators are digital with additional features such as flight timers, maximum indications held in memory and pilot programmable warning systems.

The ignition system comprises an ignition exciter box, two high tension leads, two spark igniters, an ignition monitor light in the annunciator panel, an ignition switch and a starter switch. Electrical energy from the exciter box, mounted on the left engine mount truss, is transmitted via two high tension leads to two igniters, at four and nine o'clock positions on the gas generator case adjacent to the fuel manifold. The ignition system is normally energized only during engine start. Ignition is controlled by one switch, located on the switch and circuit breaker panel.

The exhaust system provides the means of ducting the jet efflux to atmosphere clear of the engine compartment. The exhaust assembly comprises two stub pipes welded to two flanges and the assemblies are secured to the engine exhaust flanges by 6 corrosion resistant nuts and bolts to each assembly.

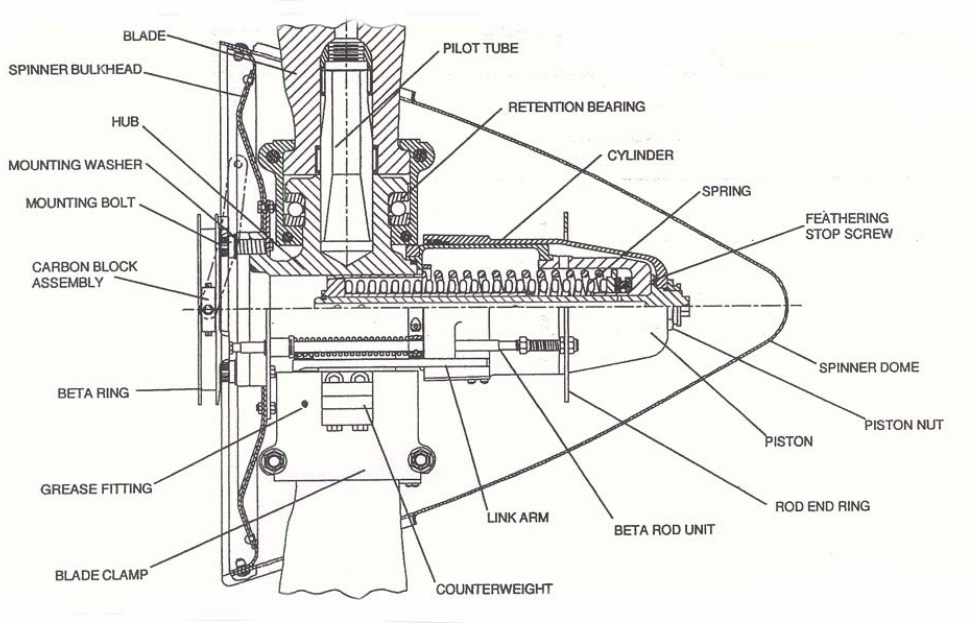
The engine starting system comprises a starter generator, a start switch, a start circuit breaker, a starter relay, a warning light and associated wiring.

PROPELLER

The PAC 750XL is equipped with a three blade, Hartzell, constant speed, feathering and reversible pitch propeller, model HC-B3TN-3D/T10282NS+4. The propeller uses a single oil supply from a governing device to hydraulically actuate a change in blade angle. The propeller blade angles are : -

Fine	:	18.3^0
Feather	:	86.5^0
Reverse Pitch	:	-8.1^0

While the propeller is operating, the following forces are constantly present: spring force, counterweight force, centrifugal twisting moment of each blade, and blade aerodynamic twisting forces. The spring and counterweight forces attempt to rotate the blades to higher blade angle, while the centrifugal twisting moment of each blade is generally acting toward lower blade angle. Blade aerodynamic twisting force is usually very small in relation to the other forces and will attempt to increase or decrease blade angle.

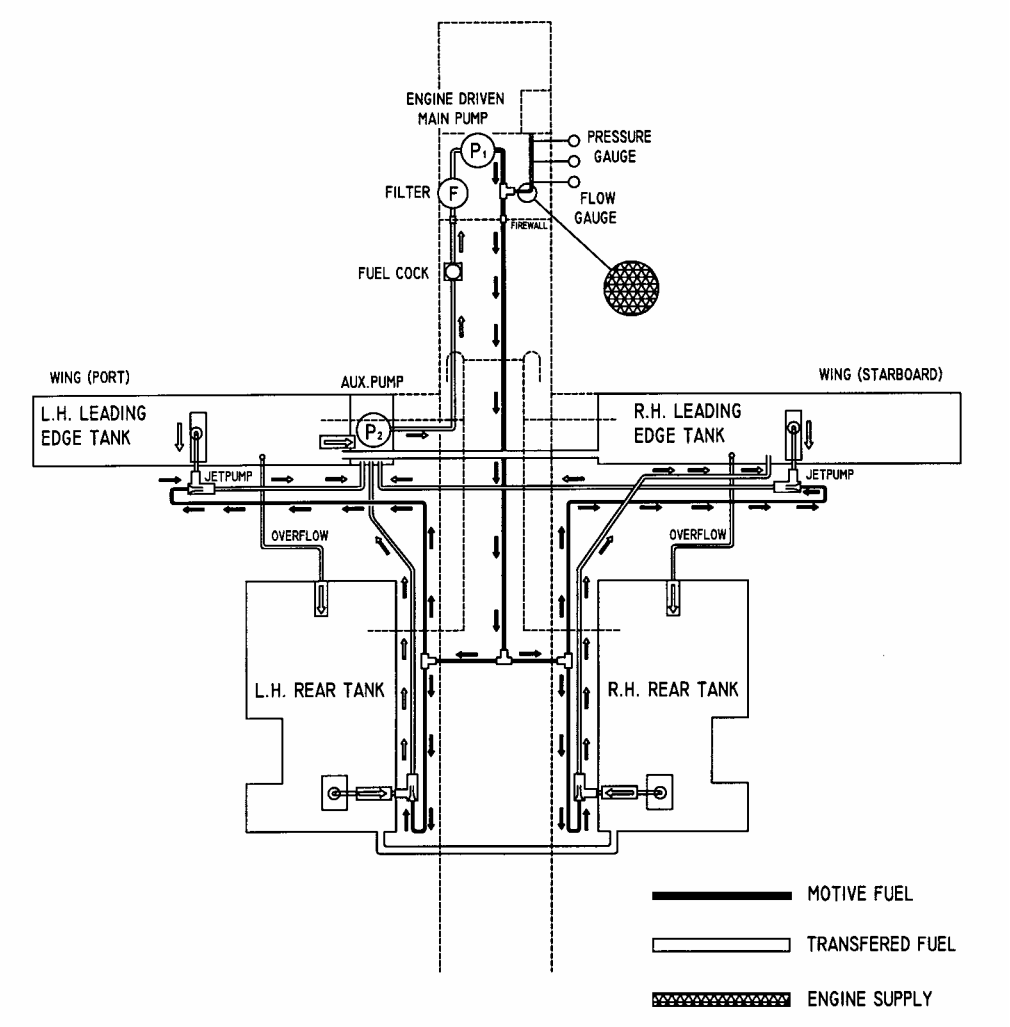


The propeller indicating system comprises an indicator, a circuit breaker, a tachometer generator and associated wiring. The propeller speed indicator is graduated as a percentage of the power turbine speed and it is located in the centre of the instrument panel.

FUEL SYSTEM

The PAC 750XL fuel system is extremely simple. The system may be considered as two discrete systems integrated at the front sump tank. The design of the system is such that the front wing tanks are the primary tanks and the rear wing tanks the secondary. The system includes the following components:

Left and right hand front and rear wing storage tanks
Front sump tank incorporated in left front wing storage tank,
One fuel filter
Fuel shut off valve
Electric fuel pump
"Jet Pumps"
Fuel pressure warning and filter restriction warning system
Fuel quantity indicating system
Associated delivery/vent piping



Fuel is drawn from a 26 litre (6.8 U.S. gallon sump tank incorporated into the left forward tank. During normal operations fuel is drawn from the tanks by a pump driven by the engine. During starting and emergency operation an electric auxiliary pump mounted in the sump tank provides fuel motive force. The quantity of fuel pumped is in excess of that required for engine operation. Fuel not required by the engine is circulated to each tank where it passes through "jet pumps" which uplift more fuel by venturi-action. Fuel from each rear tank is fed forward to its corresponding side front tank where "jet pumps" draw fuel and deliver to the sump tank. Operation of the fuel system is monitored by three warning systems. A red warning light marked in the annunciator lights panel which will illuminate should the system pressure fall to 2 psi $\pm$ 10% psi. An amber warning light in the annunicator panel will illuminate should the pressure differential across the inlet and outlet ports of the fuel filter rise above 2.5 psi $\pm$ 0.20 psi. A low fuel quantity light is also fitted. The system is vented by two pipes which connect front and rear tanks respectively before venting overboard through the fuselage lower surface under the cabin.

The contents of each wing tank is measured by a capacitance sensor and indicated on dual digital indicators in the instrument panel.

The wing fuel storage tanks comprise front and rear cells fabricated in the centre wing structure on the left and right hand sides of the fuselage. Each front tank is equipped on the upper surface with a filler aperture and cap and a quantity sensor, in the lower surface access panels, and drain points. Each rear tank is equipped on the upper surface with three access panels one of which incorporates the filler aperture and cap, in the lower surface are two drain points. A quantity sensor is mounted diagonally across the tank.

The fuel shut-off valve is located under the floor of the cockpit on the fuselage left side between the sump tank and the fuel filter. It is operated from a simple ON/OFF push/pull lever mounted on the control centre console.

ELECTRICAL SYSTEM

The electrical system is a 28 V DC single wire negative earth return system. Power is provided from two internal sources. The generator system, as a main source under normal conditions, and the battery system which is employed for engine starting and system operation when generator power is not available (engine not running or generator is off line). Both systems feed a common bus bar. Control and monitoring of power from the two systems is by a MASTER switch, voltmeter and ammeter respectively. All circuits are protected by circuit breakers or fuses. Wiring is installed in open looms supported by clips and protected with sleeving where necessary. Wiring routed to the forward part of the engine compartment passes through stainless steel ducts to protect it from heat. Disconnect points are provided for the removal of all major components.

The battery system comprises a 24 V 43 amphere battery, a master relay and associated wiring. The system supplies power for engine start and operation of the electrical system when the generator is not running or has failed. The battery is isolated from the bus bar by the master relay (de-energised).

The generator system comprises a starter generator, a Generator Control Unit (GCU), a relay, a GCU control switch marked GENERATOR, a circuit breaker, a generator warning light, associated wiring and terminal blocks. The GCU provides output voltage control, system over voltage protection and reverse current protection for the generator.

A starter / generator rated at 30 V DC - 200 amps is mounted on the engine accessory / reduction gear box module. It is a conventional four-pole shunt-field generator with interpoles and series auxiliary starting windings. The unit is cooled by a built-in fan.

A generator warning light is contained in the annunciator panel. The light is connected to both battery and generator systems and will illuminate when the generator is off line.

A combined volt/ammeter is located in the centre of the instrument panel. The instrument comprises a HIGH VOLTS warning light, a DISCHARGE warning light, a mode switch and a digital display.

Ground power can be connected to the aircraft using the socket located on the left hand rear fuselage.

LIGHTING SYSTEMS

The combination navigation/strobe beacon system comprises two wing tip light units, two fuselage strobe lights, a power supply unit, a navigation lights switch circuit breaker, a strobe lights switch circuit breaker and associated wiring. The left hand and right hand wing tip mounted light units combine the conventional red/green wing lights with flash tubes for the strobe lighting. A white navigation light is mounted on the tail of the aircraft. The navigation and strobe lights are controlled by using switches in the switch panel.

The landing light system comprises two 28 V 250 watt sealed beam lights, a switch/circuit breaker and associated wiring. The landing lights are located in the wing leading edge, inboard of the wing tip. The light assemblies are secured at three points by spring loaded screws which also provide angular adjustment. A pre formed plexiglass cover is fitted over the unit.

The PAC 750XL is equipped with lighting for the instrument panel and pedestal. Lighting is controlled using a switch in the switch panel. Lighting intensity is controlled by the four knobs located on the pedestal.

CABIN VENTILATION

Ambient air is ducted from two NACA ducts located immediately forward of the right and left hand exhaust pipes. The air is directed through separate flexible ducts to the cockpit vents. The flow is controlled using either one or both of the cockpit ventilation controls located either side of the pedestal in the cockpit. Pulling the lever opens an aperture on the firewall which allows the air to flow into the cockpit through the vent.

OXYGEN SYSTEM

A Scott Mark II, 22 cubic feet (14 lbs), portable oxygen system is provided as optional equipment for the pilot. The system provides a manually variable flow of oxygen for two users to 16,500 feet or to 20,000 feet with optional accessories. The unit is mounted on the left cabin side wall just behind the pilot's seat.

PITOT STATIC SYSTEM

The pitot static system comprises a pitot head with pitot heat, mounted on the right hand wing tip, flush mounted static ports on either side of the rear fuselage and drains located on the underside of the rear fuselage. The pitot static system supplies ram air pressure to the airspeed indicator and static pressure to the airspeed indicator, vertical speed indicator and altimeter.
The pitot heating system comprises an electric heating element, which is an integral part of the pitot tube and head assembly mounted on the right hand wing tip, and a switch/circuit breaker located in the switch panel in the cockpit, a warning light in the annunciator panel and associated wiring.

STALL WARNING SYSTEM

The lift detector vane/switch, located in the right hand leading edge of the centre wing, operates the stall warning system to provide audible warning to the pilot of impending stall. The warning horn will sound approximately 5 -10 knots above stalling speed. The horn is located in the overhead panel adjacent to the pilot's seat.

AVIONICS

The PAC 750XL can be configured with a wide range of avionics equipment. Crew intercommunication is through an audio panel and intercommunication unit with two sets of headphone jacks. A press to transmit switch is located on the control column. An optional fit comprises mounting the right hand press to talk on the instrument panel. An avionics master switch on the switch panel controls power to the radios.

CABIN FEATURES

A 0.9 KG (1.98 lbs) portable fire extinguisher, axe and first aid kit is located between the pilot and front passenger seat.

EMERGENCY LOCATOR BEACON

An ARTEX emergency locator beacon is fitted to the aircraft. The system comprises a control unit located in the rear fuselage adjacent to the aircraft battery, an externally mounted antenna and an ON/ARM switch on the instrument panel.

TECHNICAL PUBLICATIONS

- Maintenance Manual
- Pilot Operating Handbook
- Illustrated Parts Manual

WARRANTY

(1) In the event of any defect in any part fitted by Pacific Aerospace Corporation Limited in any of the products (other than any part specified in sub clause 2 hereof) being discovered within the period of twenty four (24) months after the relevant date of acceptance delivery date or before the expiration of five hundred (500) hours flying time whichever is the less and in the event of that defect being proved to be due to defective material or workmanship Pacific Aerospace Corporation Limited shall subject to the conditions hereinafter specified as expeditiously as is reasonably possible repair the defective part or at the option of Pacific Aerospace Corporation Limited supply a new part in place thereof, in either case free of charge to the Purchaser but Pacific Aerospace Corporation Limited shall not be liable for any direct or indirect loss or damage or any other claims howsoever arising out of any defect.

If any such part is of an expendable nature with a normal warranty of less than twenty four (24) months the period of warranty for such part shall be the normal one to that part.

(2) Pacific Aerospace Corporation Limited gives no warranty in relation to any of the products or parts of products not manufactured by the Pacific Aerospace Corporation Limited except to the extent that a warranty is granted to the Pacific Aerospace Corporation Limited by the manufacturer of the product.

So far as is practicable Pacific Aerospace Corporation Limited undertakes to procure the assignment to the purchaser of the benefit of any rights which Pacific Aerospace Corporation Limited may have against the manufacturer of products or parts of products not manufactured by Pacific Aerospace Corporation Limited

(3) Warranty shall apply only to the defects notified to Pacific Aerospace Corporation Limited within thirty (30) days after discovery and are subject to the aircraft spares, supplies and parts having been used, handled, stored, maintained and operated in accordance with sound aviation practice, the limitations imposed by the flight performance envelope and the instructions issued by Pacific Aerospace Corporation Limited.

(3) Warranty shall not extend to:

Any aircraft or part which has been altered after delivery otherwise than by the Pacific Aerospace Corporation Limited or with its written approval

Any part from which Pacific Aerospace Corporation Limited trademark or name or serial number has been removed

Wear and tear or any defect caused by negligence or misuse

Accessories supplied by the Purchaser

(5) For the purpose of this warranty a part of an aircraft shall not be regarded as defective because subsequent to delivery of the aircraft some modification or alteration thereof is required to be made by an Airworthiness Authority.

(6) Notice of any alleged defect shall be given in writing to Pacific Aerospace Corporation Limited within thirty (30) days after discovery thereof and such notice shall contain detailed particulars setting out the nature and ground of claim.

If so required by Pacific Aerospace Corporation Limited the Purchaser shall forthwith send to Pacific Aerospace Corporation Limited's factory the part alleged to be defective. Any part so sent shall be properly packed and marked with the name and full address of the Purchaser and Serial Number of the aircraft from which it is taken. Transportation costs of any such part shall be prepaid by the Purchaser and reimbursed by Pacific Aerospace Corporation Limited if such part is proven to be defective and so admitted by Pacific Aerospace Corporation Limited.

(7) If any part is replaced by Pacific Aerospace Corporation Limited the original part shall become the property of Pacific Aerospace Corporation Limited.

(8) Warranty is restricted to the original Purchaser and shall not be assigned unless Pacific Aerospace Corporation Limited expressly consents in writing thereto.

(9) Except for the warranty contained in sub-clause (1) of this clause all express or implied statutory or other warranties conditions or liabilities whether as to fitness or otherwise relating to the Products or any part thereof and whether arising in contract or by reason of negligence are hereby excluded for all time and the provisions hereof shall override any alleged representation or collateral agreement to the contrary except an agreement in writing signed by an authorised representative of each party hereto, provided that in the event that the aforesaid provision relieving the Company from liability for negligence should for any reason be held ineffective the remainder of this sub-clause and this Clause 9 shall remain in full force and effect.

MAINTENANCE

The PAC 750XL is designed and manufactured with ease of maintenance in mind. The PAC 750XL maintenance cycle is every 150 hours or 1500 landings, whichever occurs first. Thirty five manhours is the average estimated time to complete a 150 hour check.