TABLE OF CONTENTS

SECTION 7

DESCRIPTION AND OPERATION OF THE AIRPLANE AND ITS SYSTEMS

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SECTION 7

DESCRIPTION AND OPERATION OF THE AIRPLANE AND ITS SYSTEMS

7.1 THE AIRPLANE

The PA-28-181 ARCHER III is a single-engine, low-wing monoplane of all metal construction. It has four-place seating, two hundred pound baggage capacity, and a 180 horsepower engine.

7.3 AIRFRAME

The basic airframe, except for a tubular steel engine mount, steel landing gear struts, and other miscellaneous steel parts, is of aluminum alloy construction. The extremities - the wing tips, the cowling, the tail surfaces - are of fiberglass or ABS thermoplastic. Aerobatics are prohibited in this airplane since the structure is not designed for aerobatic loads.

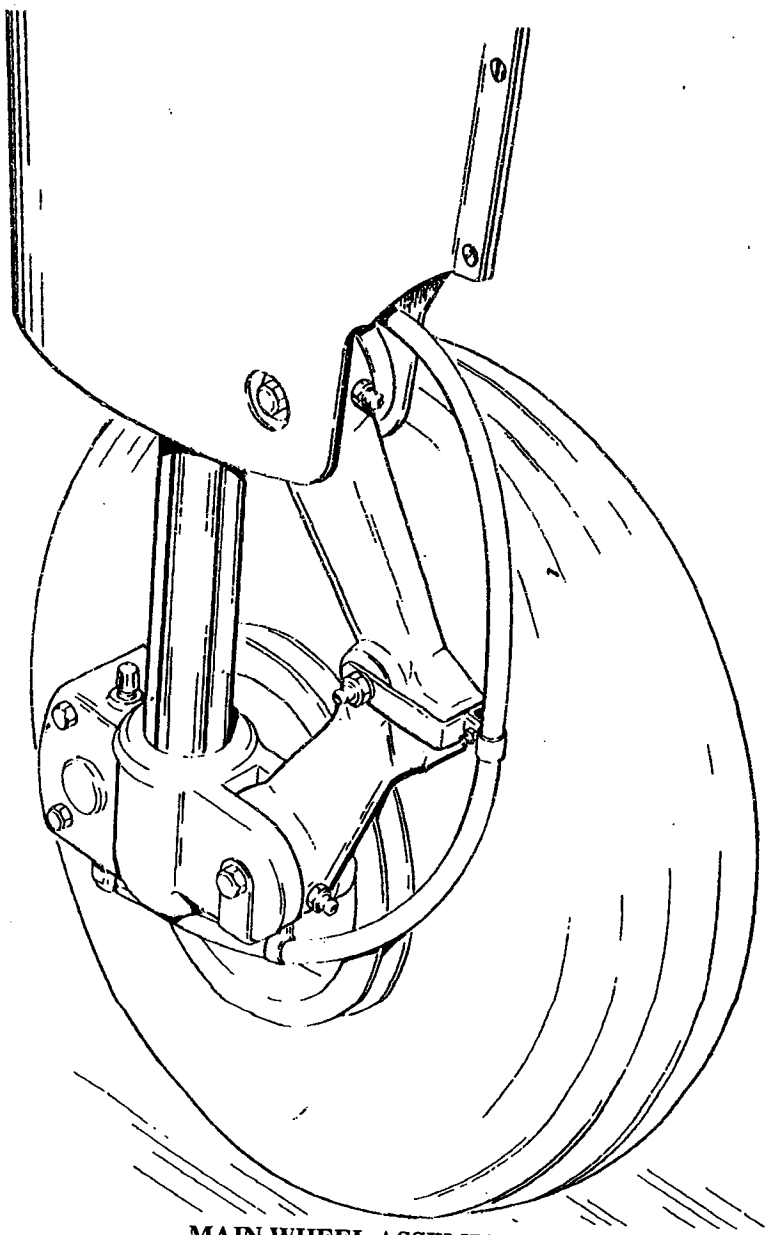
The semi-tapered wings have a laminar flow type NACA 652-415 airfoil. The wings are attached to each side of the fuselage by insertion of the butt ends of the respective main spars into a spar box carry-through which is an integral part of the fuselage structure, providing, in effect, a continuous main spar with splices at each side of the fuselage. There are also fore and aft attachments at the rear spar and at an auxiliary front spar.

7.5 ENGINE AND PROPELLER

The ARCHER III is powered by a four cylinder, direct drive, horizontally opposed engine rated at 180 horsepower at 2700 rpm. It is furnished with a starter, a 70 ampere, 28 volt alternator, a shielded ignition, vacuum pump drive, a fuel pump, and a dry, automotive type carburetor air filter.

The exhaust system is made entirely from stainless steel and is equipped with a single dual muffler. A heater shroud around the muffler is provided to supply heat for the cabin and windshield defrosting.

The fixed-pitch propeller is made from a one-piece alloy forging.



MAIN WHEEL ASSEMBLY
Figure 7-1
(Wheel fairing removed for clarity.)

7.7 LANDING GEAR

The three landing gears use Cleveland 6.00 x 6 wheels, the main gear wheels (Figure 7-1) being provided with brake drums and Cleveland single disc hydraulic brake assemblies. All three wheels use 6.00 x 6, four-ply rating, Type III tires with tubes.

A spring device is incorporated in the rudder pedal torque tube assembly to provide rudder trim. A bungee in the nose gear steering mechanism reduces steering effort and dampens bumps and shocks during taxiing. By using the rudder pedals and brakes the nose gear is steerable through a 30 degree arc each side of center. Later aircraft have the bungee removed from the nose gear steering mechanism and are steerable through a 20 degree arc each side of center. A shimmy dampener is also included in the nose gear.

The three struts are of the air-oil type, with a normal extension of 3.25 inches for the nose gear and 4.50 inches for the main gear.

The standard brake system consists of dual toe brakes attached to the rudder pedals and a hand lever and master cylinder located below and behind the left center of the instrument sub-panel. The toe brakes and the hand brake have their own brake cylinders, but they share a common reservoir. The brake fluid reservoir is installed on the top left front face of the fire wall. The parking brake is incorporated in the master cylinder and is actuated by pulling back on the brake lever, depressing the knob attached to the left side of the handle, and releasing the brake lever. To release the parking brake, pull back on the brake lever to disengage the catch mechanism and allow the handle to swing forward (refer to Figure 7-5).

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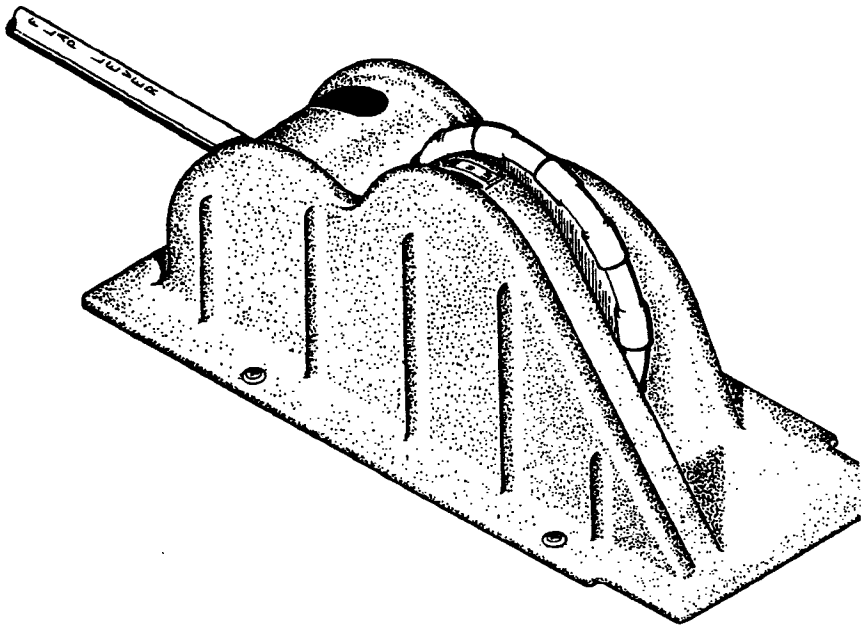


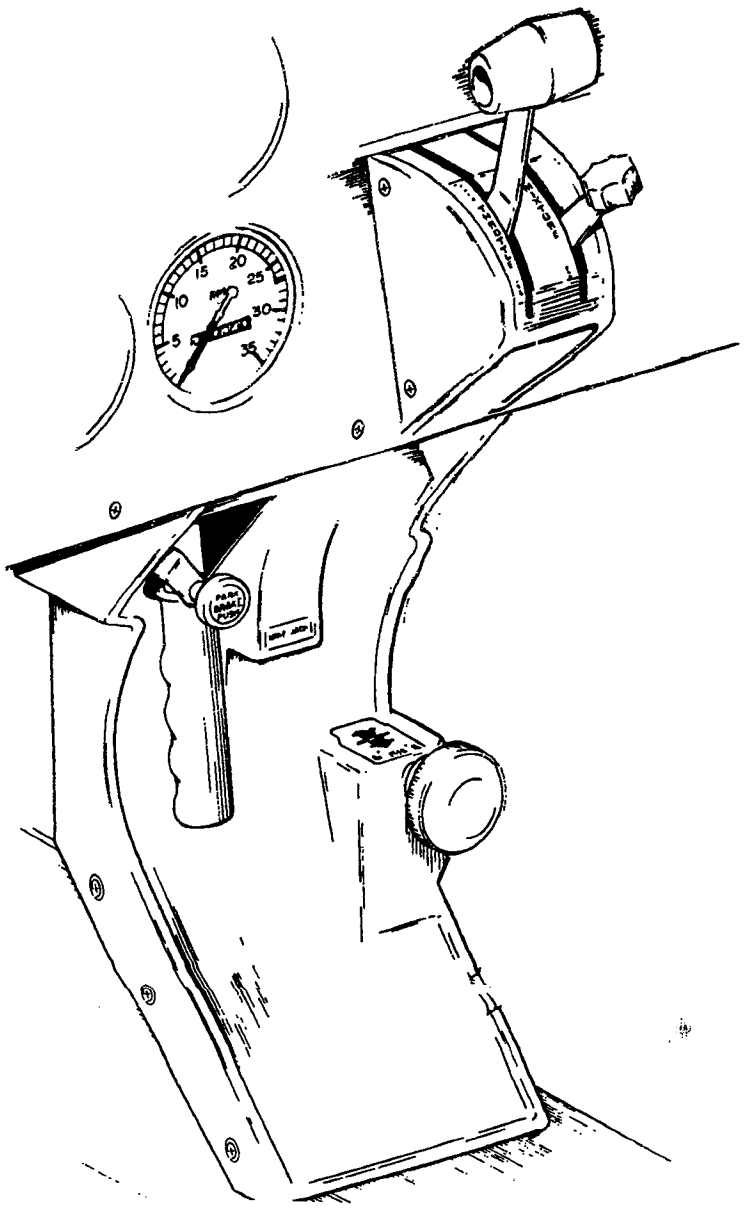
FLIGHT CONTROL CONSOLE
Figure 7-3

7.9 FLIGHT CONTROLS

Dual controls are provided as standard equipment, with a cable system used between the controls and the surfaces. The horizontal tail (stabilator) is of the all-movable slab type with a trim tab mounted on the trailing edge of the stabilator to reduce the control system forces. This tab is actuated by a control wheel on the floor between the front seats (Figure 7-3).

A rudder trim adjustment is mounted on the right side of the pedestal below the throttle quadrant and permits directional trim as needed in flight (refer to Figure 7-5).

The flaps are manually operated and spring-loaded to return to the up position. A past-center lock incorporated in the actuating linkage holds the flap when it is in the up position so that it may be used as a step on the right side. The flap will not support a step load except when in the full up position, so it must be completely retracted when used as a step. The flaps have three extended positions, 10, 25 and 40 degrees.



CONTROL QUADRANT AND CONSOLE
Figure 7-5

7.11 ENGINE CONTROLS

Engine controls consist of a throttle control and a mixture control lever. These controls are located on the control quadrant on the lower center of the instrument panel (Figure 7-5) where they are accessible to both the pilot and the copilot. The controls utilize teflon-lined control cables to reduce friction and binding.

The throttle lever is used to adjust engine RPM. The mixture control lever is used to adjust the air to fuel ratio. The engine is shut down by the placing of the mixture control lever in the full lean position. For information on the leaning procedure, see Section 4 of this Handbook.

The friction adjustment lever on the right side of the control quadrant may be adjusted to increase or decrease the friction holding the throttle and mixture controls or to lock the controls in a selected position.

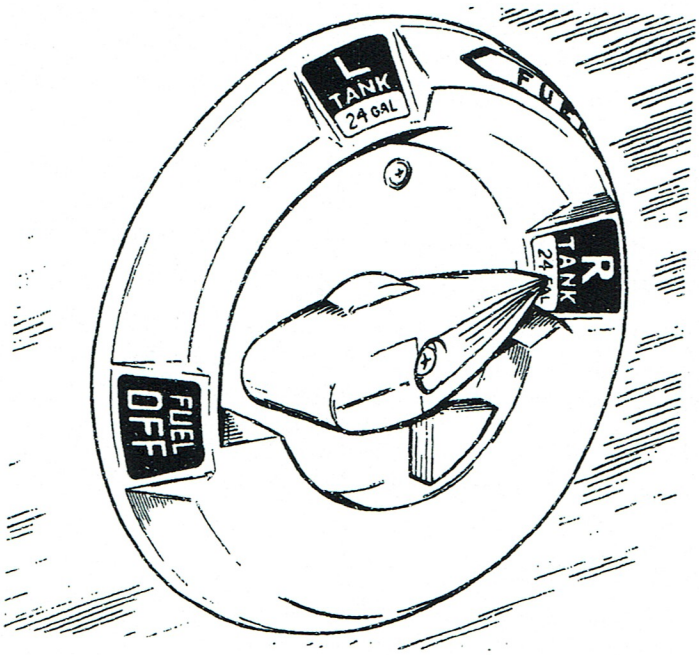
The carburetor heat control lever is located to the right of the control quadrant on the instrument panel. The control is placarded with two positions: ``ON'' (down), ``OFF'' (up).

7.13 FUEL SYSTEM

Fuel is stored in two twenty-five gallon (24 gallons usable) tanks which are secured to the leading edge structure of each wing by screws and nut plates. Each tank is equipped with a filler neck indicator tab to aid in determining fuel remaining when the tanks are not full. Usable capacity to the bottom of the indicator tab is 17 gallons.

The fuel selector control (Figure 7-7) is located on the left side-panel, forward of the pilot's seat. The button on the selector cover must be depressed and held while the handle is moved to the OFF position. The button releases automatically when the handle is moved back into the ON position.

An auxiliary electric fuel pump is provided in case of failure of the engine driven pump. The electric pump should be on for all takeoffs and landings, and when switching tanks. The pump switch is located in the switch panel above the throttle quadrant.



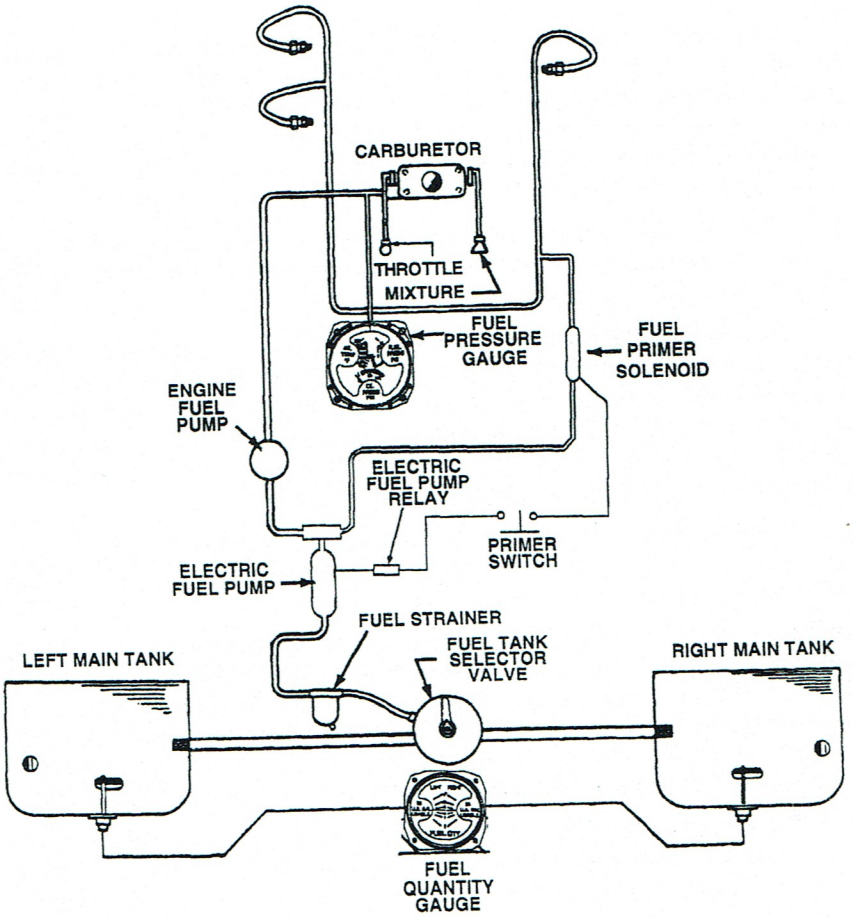
FUEL SELECTOR
Figure 7-7

The fuel drains should be opened daily prior to first flight to check for water or sediment and proper fuel. Each tank has an individual drain at the bottom, inboard rear corner.

A fuel strainer, located on the lower left front of the fire wall, has a drain which is accessible from outside the nose section. The strainer should also be drained before the first flight of the day. Refer to paragraph 8.21 for the complete fuel draining procedure.

A dual fuel quantity gauge is located in lower center of the instrument panel.

An electric engine priming system is provided to facilitate starting. The primer switch is located in the far left side of the overhead switch panel (refer to Figure 7-15A).



FUEL SYSTEM SCHEMATIC
Figure 7-9

7.15 ELECTRICAL SYSTEM

The 28-volt electrical system includes a 24-volt battery for starting and to back up alternator output. Electrical power is supplied by a 70 ampere alternator.The battery is mounted in a box on the battery shelf located in the aft fuselage A voltage regulator with integral overvoltage relay is located on the forward left side of the fuselage behind the instrument panel.

All powerplant and exterior lighting switches are grouped in a overhead switch panel, with all avionics switches grouped in a switch panel just above the throttle quadrant (figure 7-15). The circuit breaker panel is located on the lower right side of the instrument panel (figure 7-15). Each breaker is clearly marked to show which circuit it protects. Also, circuit provisions are made to handle the addition of communications and navigational equipment.

Standard electrical accessories include the starter, the electric fuel pump, electric engine primer, the stall warning horn, the ammeter, and the annunciator panel.

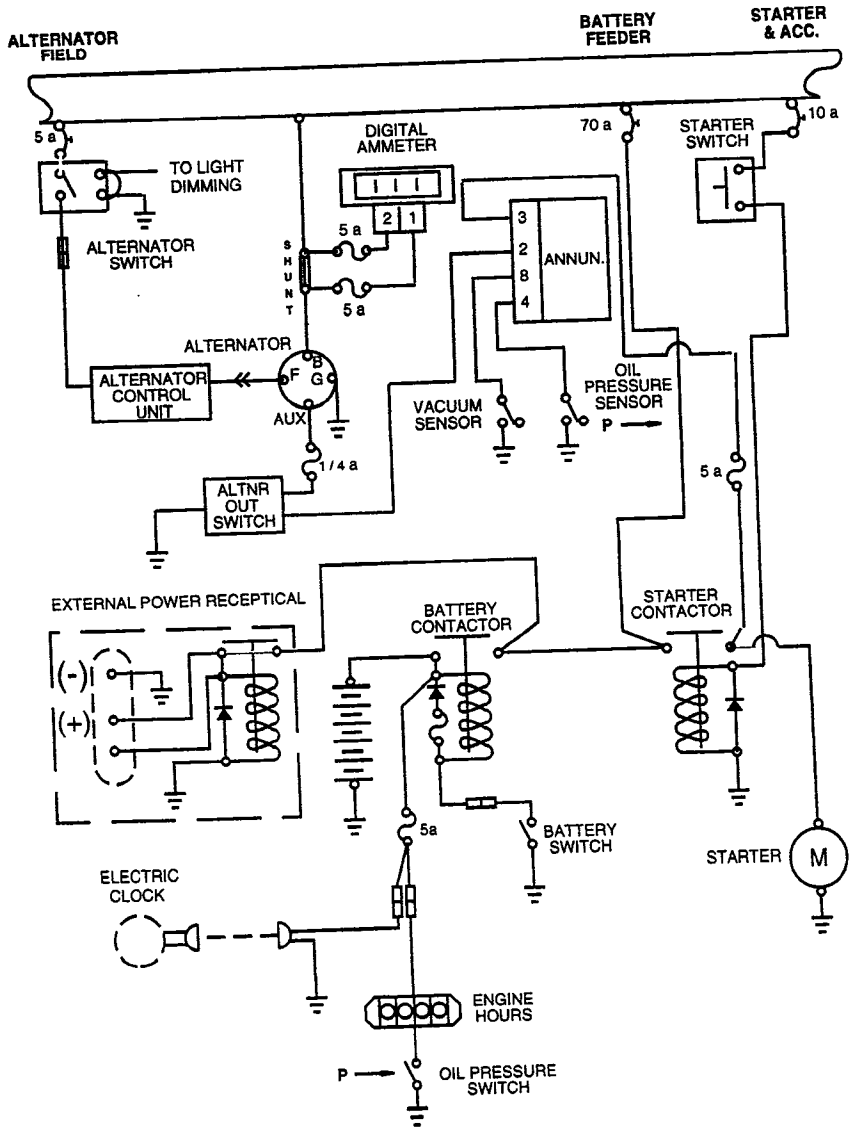
The annunciator panel includes, alternator inop, oil pressure, vacuum inop., low bus voltage, start engage, pitot heat and provisions for optional air conditioner door open. The annunciator panel lights are provided only as a warning to the pilot that a system may not be operating properly, and that the applicable system gauge should be checked and monitored to determine when or if any corrective action is required.

Standard electrical accessories include the navagation lights, anti collision strobe lights, landing/taxi lights, instrument panel lighting and cabin dome light.

Two lights, mounted in the overhead panel, provide instrument and cockpit lighting for night flying. The lights are controlled by rheostat switches located in the overhead panel. A map light window in each lens is actuated by an adjacent switch. A wing tip landing/taxi light system consists of 2 lights (one in each wing tip) and is operated by a rocker type switch mounted on the overhead switch panel. (Wing tip lights also used as recognition lights.)

The digital ammeter in the alternator system displays in amperes the load placed on the alternator. It does not indicate battery discharge. With all electrical equipment off (except the master switch) the ammeter will be indicating the amount of charging current demanded by the battery. As each item of electrical equipment is turned on, the current will increase to a total appearing on the ammeter. This total includes the battery. The average continuous load for night flight, with radios on, is about 32 amperes. This 32 ampere value, plus approximately 2 amperes for a fully charged battery, will appear continuously under these flight conditions.

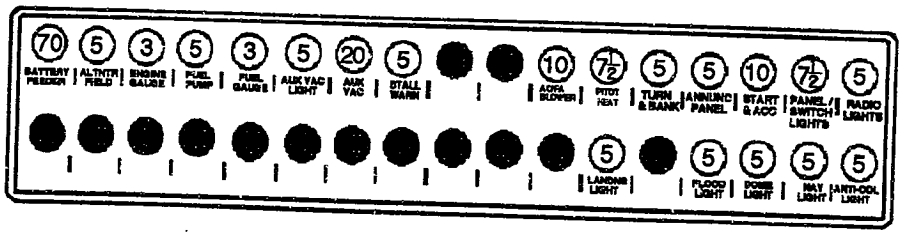
WARNING Anti-collision lights should not be operating when flying through cloud, fog or haze, since the reflected light can produce spatial disorien-tation. Strobe lights should not be used in close proximity to the ground such as during taxiing, takeoff or landing.



ALTERNATOR AND STARTER SCHEMATIC
Figure 7-11

CAUTION: Do not use cigar lighter receptacles as power sources for any devices other than the cigar lighters supplied with the airplane. Any other device plugged into these receptacles may be damaged.

For abnormal and/or emergency operation and procedure, see Section 3.



CIRCUIT BREAKER PANEL
Figure 7-13

7.17 VACUUM SYSTEM

The vacuum system is designed to operate the air driven gyro instruments. This includes the directional and attitude gyros when installed. The system consists of an engine driven vacuum pump, a vacuum regulator, a filter and the necessary plumbing.

The vacuum pump is a dry type pump which eliminates the need for an air/oil separator and its plumbing. A shear drive protects the pump from damage. If the drive shears, the gyros will become inoperative.

The vacuum gauge, mounted on the left instrument panel (refer to figure 7-15), provides valuable information to the pilot about the operation of the vacuum system. A decrease in pressure in a system that has remained constant over an extended period may indicate a dirty filter, dirty screens, possibly a sticking vacuum regulator or leak in system (a low vacuum indicator light is provided in the annunciator panel). Zero pressure would indicate a sheared pump drive, defective pump, possibly a defective gauge or collapsed line. In the event of any gauge variation from the norm, the pilot should have a mechanic check the system to prevent possible damage to the system components or eventual failure of the system.

A vacuum regulator is provided in the system to protect the gyros. The valve is set so the normal vacuum reads 4.8 to 5.2 inches of mercury, a setting which provides sufficient vacuum to operate all the gyros at their rated RPM. Higher settings will damage the gyros and with a low setting the gyros will be unreliable. The regulator is located behind the instrument panel and is accessible from below the instrument panel.

7.19 INSTRUMENT PANEL

The instrument panel (Figure 7-15) is designed to accommodate the customary advanced flight instruments and the normally required powerplant instruments. The artificial horizon and directional gyro are vacuum operated and are located in the center of the left hand instrument panel. The vacuum gauge is located on the upper left hand instrument panel with the electric standby vacuum pump switch located directly below. The turn indicator the left side is electrically operated.

The radios are located in the center section of the panel, and the circuit breakers located in he lower right corner of the panel. All avionics switches plus pitot heat are grouped below the left radio stack.

Incorporated in the over head switch panel (7-15A) are all the engine related switches, grouped to the left of center, with exterior lighting switches grouped to the right of center.

Eengine gauges are installed to the left of the throttle quadrant for monitoring engine operation. These gauges consist of a combination oil pressure, oil temperature and fuel pressure gauge, optional exhaust gas temperature (EGT), and a tachometer (RPM) gauge.

The normal operating range for ground and flight operation is indicated on the instruments by a green arc. Yellow arcs indicate either a takeoff or precautionary range. Red radial lines identity the established maximum or minimum limits. When an instrument needle point touches the edge of the red radial nearest the yellow or green arc; the limit is met.

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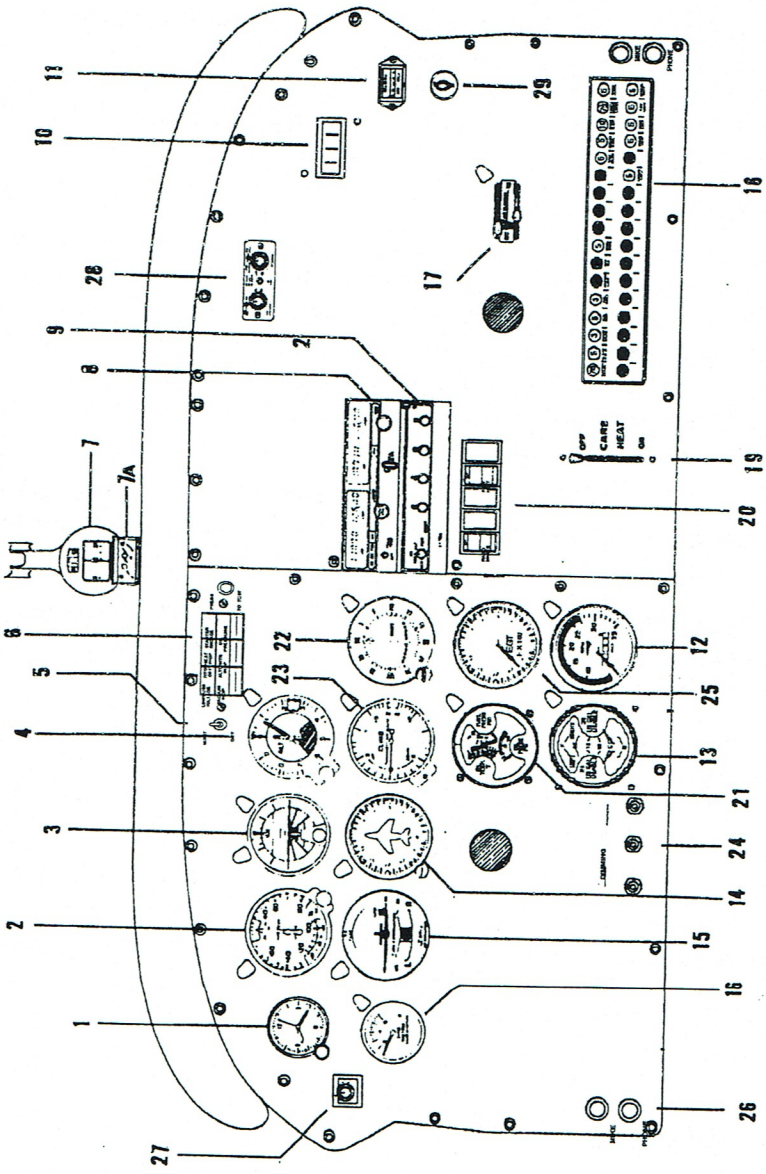
Incorporated in the over head switch panel (7-15A) are all the engine related switches, grouped to the left of center, with exterior lighting switches grouped to the right of center.

Standard 3 1/8 inch diameter engine gauges are installed to the left of the throttle quadrant for monitoring engine operation. These gauges consist of a combination oil pressure, oil temperature and fuel pressure gauge, exhaust gas temperature (EGT), and a tachometer (RPM) gauge.

The normal operating range for ground and flight operation is indicated on the instruments by a green arc. Yellow arcs indicate either a takeoff or precautionary range. Red radial lines identity the established maximum or minimum limits. When an instrument needle point touches the edge of the red radial nearest the yellow or green arc, the limit is met.



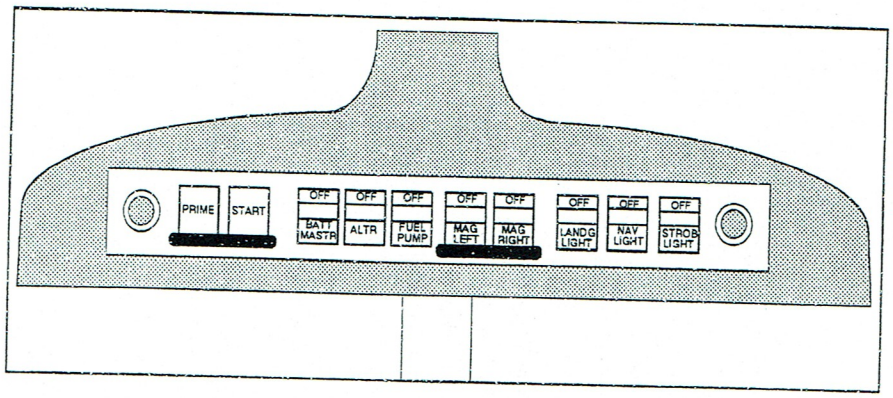
INSTRUMENT PANEL
Figure 7-15

1. CLOCK
2. AIRSPEED INDICATOR
3. ATTITUDE GYRO
4. ALTIMETER
5. DAY/NIGHT SWITCH
6. ANNUNCIATOR PANEL (with Press to Test)
7. COMPASS (MAGNETIC)
7a. COMPASS CORRECTION CARD
8. COMM / NAV RADIO
9. TRANSPONDER
10 AMMETER (DIGITAL)
11. HOUR METER
12. TACHOMETER (RPM)
13. FUEL QUANTITY
14. DIRECTIONAL GYRO
15. TURN & BANK
16. VACUUM GAUGE or Optional EGT (Exhaust Gas Temperature Gauge) when Garmin G500 installed.
17. CABIN AIR CONTROL
WINDSHIELD DEFROST AND HEAT
18. CIRCUIT BREAKER PANEL
19. CARB. HEAT
20. SWITCH PANEL (Avionics - Pitot Heat)
21. ENGINE GAUGE, OIL TEMP
OIL AND FUEL PRESSURE, .
22. VOR/LOC NAVIGATION INDICATOR
23. VERTICAL SPEED INDICATOR
24. LIGHT CONTROL AND DIMMING SWITCH, INST.PANEL,& RADIOS
25. OPTIONAL EGT (Exhaust Gas Temprature Gauge) when Standard Instrument Package installed.
26. MIC/PHONE JACKS
27. ELT CONTROL
28. INTERCOM CONTROL
29 CIGAR LIGHTER

Typical VFR Panel

1. CLOCK
2. AIRSPEED INDICATOR
3. ATTITUDE GYRO
4. ALTIMETER
5. DAY/NIGHT SWITCH
6. ANNUNCIATOR PANEL (with Press to Test)
7. COMPASS (MAGNETIC)
7a. COMPASS CORRECTION CARD
8. COMM / NAV RADIO
9. TRANSPONDER
10 AMMETER (DIGITAL)
11. HOUR METER
12. TACHOMETER (RPM)
13. FUEL QUANTITY
14. DIRECTIONAL GYRO
15. TURN & BANK
16. VACUUM GAUGE
17. CABIN AIR CONTROL
    WINDSHIELD DEFROST AND HEAT
18. CIRCUIT BREAKER PANEL
19. CARB. HEAT
20. SWITCH PANEL (Avionics - Pitot Heat)
21. ENGINE GAUGE, OIL TEMP
    OIL AND FUEL PRESSURE, .
22. VOR/LOC NAVIGATION INDICATOR
23. VERTICAL SPEED INDICATOR
24. LIGHT CONTROL AND DIMMING
    SWITCH, INST.PANEL & RADIOS
25. EGT (Exhaust Gas Temprature gauge)
26. MIC/PHONE JACKS
27. ELT CONTROL
28. INTERCOM CONTROL
29 CIGAR LIGHTER

Typical VFR Panel



OVERHEAD SWITCH PANEL
Figure 7-15A

Overhead switches: (left to right)

Left Panel Flood Light Control
Engine Primer
Engine Starter
Battery Master
Alternator
Fuel Pump
Left Magneto
Right Magneto
Landing Light / Taxi Light
Nav Light
Strobe Light
Right Panel Flood Light Control

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7.21 PITOT-STATIC SYSTEM

The system supplies both pitot and static pressure for the airspeed indicator, altimeter and the-vertical speed indicator (Figure 7-17).

Pitot and static pressure are picked up by a pitot head installed on the bottom of the left wing and carried through pitot and static lines within the wing and fuselage to the gauges on the instrument panel.

An alternate static source is standard equipment. The control valve is located below the left side of the instrument panel. When the valve is set in the alternate position, the altimeter, vertical speed indicator and airspeed indicator will be using cabin air for static pressure. The storm window and cabin vents must be closed and the cabin heater and defroster must be on during alternate static source operation. The altimeter error is less than 50 feet unless otherwise placarded.

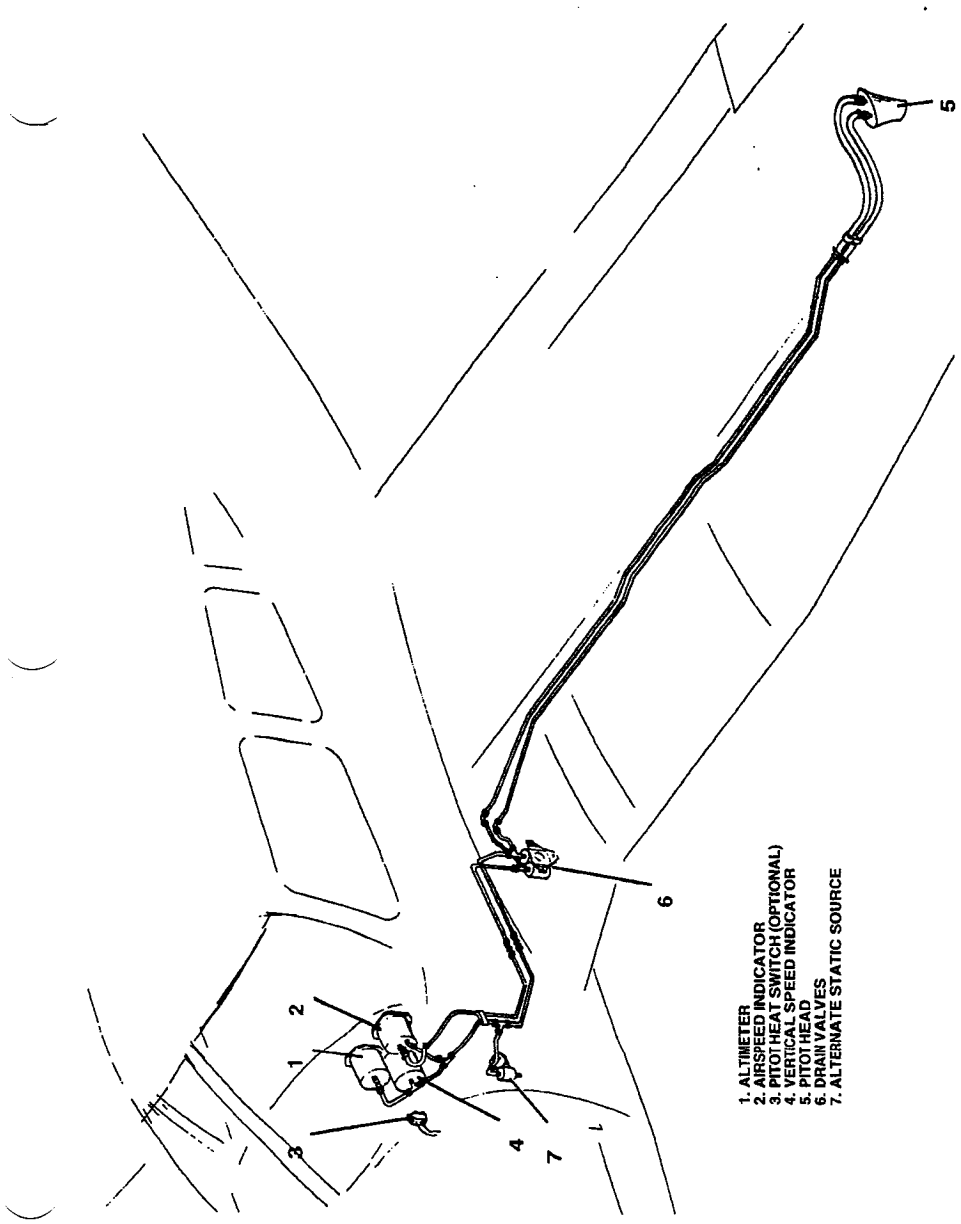
Both the pitot and static lines can be drained through separate drain valves located on the left lower side of the fuselage interior.

A heated pitot head, which alleviates problems with icing and heavy rain, is standard equipment. The switch for the heated pitot head is located on the electrical switch panel above the throttle quadrant.

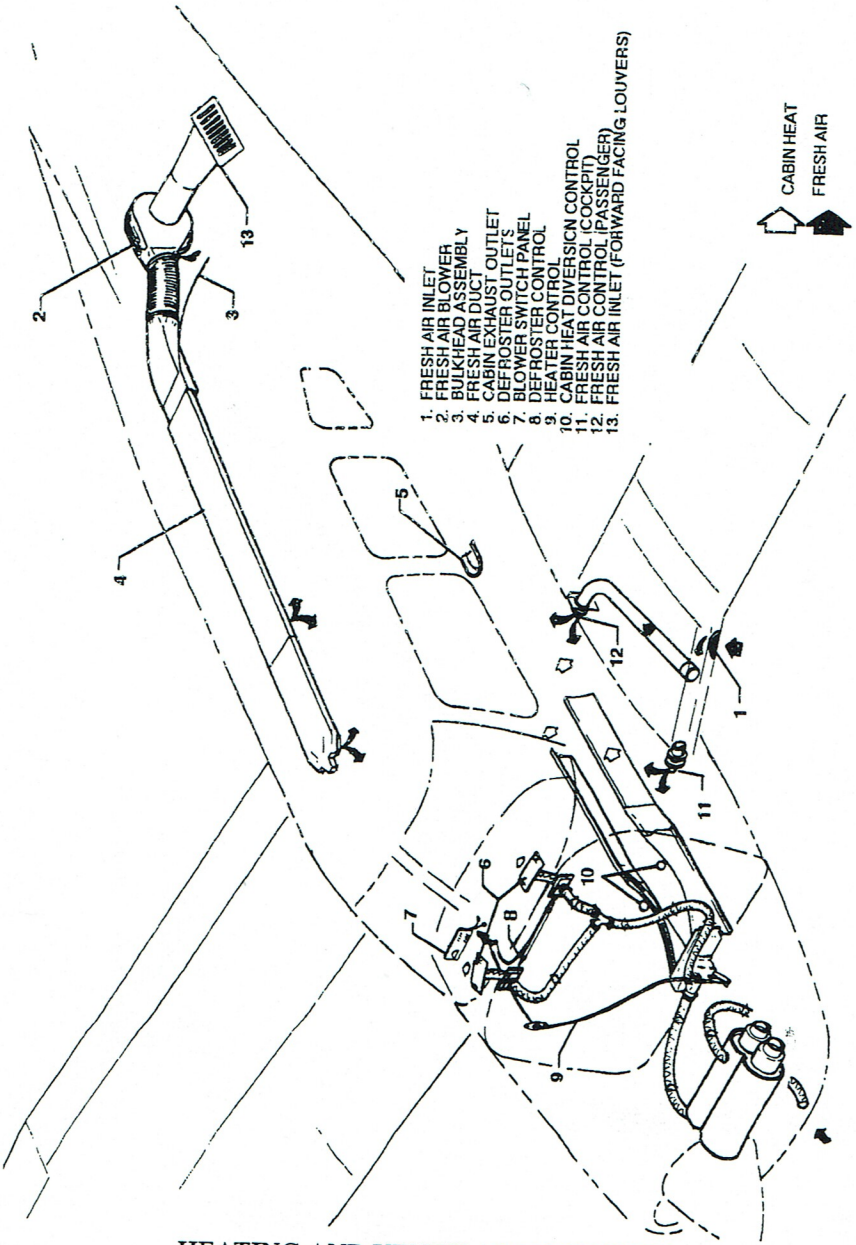
To prevent bugs and water from entering the pitot and static pressure holes, a cover should be placed over the pitot head. A partially or completely blocked pitot head will give erratic or zero readings on the instruments.

NOTE

During the preflight, check to make sure the pitot cover is removed.



PITOT-STATIC SYSTEM
Figure 7-17



HEATING AND VENTILATING SYSTEM
Figure 7-19

7.23 HEATING AND VENTILATING SYSTEM

Heat for the cabin interior and the defroster system is provided by a heater muff attached to the exhaust system (Figure 7-19). The amount of heat desired can be regulated with the controls located on the far right side of the instrument panel.

The air flow can be regulated between the front and rear seats by levers located on top of the heat ducts next to the console.

Fresh air inlets are located in the leading edge of the wing near the fuselage. An adjustable outlet is located on the side of the cabin near the floor at each seat location; overhead air outlets are offered as optional equipment. Air is exhausted through an outlet under the rear seat. A cabin air blower, incorporated in the ventilating system, is also available as optional equipment. An optional overhead ventilating system with a cabin air blower is available on models without air conditioning. This blower is operated by a FAN switch with 3 positions - ``OFF,'' ``LOW,'' ``HIGH.''

CAUTION

When cabin heat is operated, heat duct surface becomes hot. This could result in burns if arms or legs are placed too close to heat duct outlets or surface.

7.25 CABIN FEATURES

For ease of entry and exit and pilot-passenger comfort, the front seats are adjustable fore and aft. The rear seats may be removed to provide room for bulky items. Rear seat installations incorporate leg retainers with latching mechanisms which must be released before the rear seats can be removed. Releasing the retainers is accomplished on by depressing the plunger behind each rear leg. Armrests are also provided for the front seats. All seats are available with optional headrests and optional vertical adjustment may be added to the front seats.

A cabin interior includes a pilot storm window, two sun visors, ash trays, two map pockets, and pockets on the backs of each front seat.

Shoulder harnesses with inertia reels are provided as standard equipment for the occupants of both front and rear seats. A check of the inertia reel mechanism can be made by pulling sharply on the strap and checking that the reel will lock in place under sudden stress. This locking feature prevents the strap from extending, and holds the occupant in place. Under normal movement the strap will extend and retract as required. The shoulder strap is routed over the shoulder adjacent to the windows and attached to the lap belt in the general area of the person's inboard hip. Adjust this fixed strap so that all controls are accessible while maintaining adequate restraint for the occupant. Shoulder harnesses should be routinely worn during takeoff, landing, turbulent air, and whenever an inflight emergency situation occurs.

7.27 BAGGAGE AREA

A 24 cubic foot baggage area, located behind the rear seats, is accessible either from the cabin or through an outside baggage door on the right side of the aircraft. Maximum capacity is 200 pounds. Tie-down straps are provided and should be used at all times.

NOTE

It is the pilot's responsibility to be sure when the baggage is loaded that the aircraft C.G. falls within the allowable C.G. Range (refer to Section 6 - Weight and Balance).

7.29 STALL WARNING

An approaching stall is indicated by a stall warning horn which is activated between five and ten knots above stall speed. Mild airframe buffeting and gentle pitching may also precede the stall. Stall speeds are shown on graphs in the Performance Section. The stall warning horn emits a continuous sound and is activated by a lift detector installed on the leading edge of the left wing. During preflight, the stall warning system should be checked by turning the master switch ON, lifting the detector and checking to determine if the horn is actuated.

7.31 FINISH

All exterior surfaces are primed with etching primer and finished with a polyurethane finish.

7.33 AIR CONDITIONING*

The air conditioning system is a recirculating air system. The major items include: evaporator, condenser, compressor, blower, switches and temperature controls.

The evaporator is located behind the left rear side of the baggage compartment. This cools the air that is used for air conditioning.

The condenser is mounted on a retractable scoop located on the bottom of the fuselage and to the rear of the baggage compartment area. The scoop extends when the air conditioner is ON and retracts to a flush position when the system is OFF.

The compressor is mounted on the forward right underside of the engine. It has an electric clutch which automatically engages or disengages the compressor to the belt drive system of the compressor.

An electrical blower is mounted on the aft side of the rear cabin panel. Air from the baggage area is drawn through the evaporator by the blower and distributed through an overhead duct to individual outlets located adjacent to each occupant.

The switches and temperature control are located on the lower right side of the instrument panel in the climate control center panel. The temperature control regulates the desired temperature of the cabin. Turn the control clockwise for increased cooling, counterclockwise for decreased cooling.

*Optional equipment

Located inboard of the temperature control is the fan speed switch and the air conditioning ON-OFF switch. The fan can be operated independently of the air conditioning. However, it must be on for air conditioner operation. Turning either switch off will disengage the compressor clutch and retract the condenser door. Cooling air should be felt within one minute after the air conditioner is turned on.

NOTE

If the system is not operating in 5 minutes, turn the system OFF until the fault is corrected.

The FAN switch allows operation of the fan with the air conditioner turned OFF to aid cabin air circulation if desired. A LOW or HIGH flow of air can be selected to the air conditioner outlets located in the overhead duct. The outlets can be adjusted or turned off by each occupant to regulate individual cooling effect.

The "DOOR OPEN" indicator light is located in the annunciator panel. The light illuminates whenever the condenser door is open and remains on until the door is closed.

A circuit breaker located on the circuit breaker panel protects the air conditioning electrical system.

Whenever the throttle is in the full throttle position, it actuates a micro switch which disengages the compressor and retracts the scoop. This is done to obtain maximum power and maximum rate of climb. The fan continues to operate and the air will remain cool for approximately one minute. When the throttle is retarded approximately 1/4 inch, the clutch will engage and the scoop will extend, again supplying cool, dry air.

7.35 EXTERNAL POWER

An external power installation is accessible through a receptacle located on the right side of the fuselage aft of the wing. An external battery can be connected to the socket, thus allowing the operator to crank the engine without having to gain access to the airplane's battery.

7.37 EMERGENCY LOCATOR TRANSMITTER*

The Emergency Locator Transmitter (ELT), is located in the aft portion of the fuselage just below the stabilator leading edge and is accessible through a plate on the right side of the fuselage. This plate is attached with slotted-head nylon screws for ease of removal; these screws may be readily removed with a variety of common items such as a dime, a key, a knife blade, etc. If there are no tools available in an emergency the screw heads may be broken off by any means.

A battery replacement date is marked on the transmitter to comply with FAA regulations, the battery must be replaced on or before this date. The battery must also be replaced if the transmitter has been used in an emergency situation or if the accumulated test time exceeds one hour, or if the unit has been inadvertently activated for an undetermined time period.

NOTE

If for any reason a test transmission is necessary, the test transmission should be conducted only in the first five minutes of any hour and limited to three audio sweeps. If the tests must be made at any other time, the tests should be coordinated with the nearest FAA tower or flight service station.

*Optional equipment

BLANK

BLANK

TEX ELT OPERATION

On the ELT unit itself is a two position switch placarded ON and OFF. The OFF position is selected when the transmitter is installed at the factory and the switch should remain in that position whenever the unit is installed in the airplane.

A pilots remote switch, placarded ON and ARM is located on the left hand side of the pilot's instrument panel to allow the transmitter to be armed or turned on from inside the cabin. The switch is normally in ARM position. Moving the switch to ON will activate the transmitter. A warning light located above the remote switch will alert you when ever the ELT is activated.

The ME-406 ELT (406 MHz), if installed, is equipped with a warning buzzer. This warning buzzer, which receives power from the ELT itself, is mounted in the tailcone. When the ELT is activated the buzzer "beeps" periodically. The time between pulses lengthens after a predetermined transmitter "ON" time. The buzzer is loud enough to be heard from outside the aircraft when the engine is not running.

Should the ELT be activated inadvertently it can be reset by either positioning the remote switch to the ON then immediately relocating it to the ARM position, or by setting the switch on the ELT to ON and then back to OFF.

In the event the transmitter is activated by an impact, it can be turned off by moving the switch on the ELT to ON and then back to OFF. Normal operation can then be restored by resetting the switch to ARM. It may also be turned off and reset by positioning the remote switch to the ON and then immediately to the ARM position.

The transmitter can be activated manually at any time by placing either the remote switch or the ELT switch to the ON position.

NOTE:

Three sweeps of the emergency tone and an illuminated warning light indicates a normally functioning unit. The warning light must illuminate during the first 3 second test period. If it does not illuminate, a problem is indicated such as a "G" switch failure.

The ELT should be checked during postflight to make certain the unit has not been activated. Check by selecting 121.50 MHz on an operating receiver. If downward sweeping audio tone is heard the ELT may have been activated. Set the remote switch to ON. If there is no change in the volume of the signal, your airplane's ELT is probably transmitting. Setting the remote switch back to OFF will automatically reset the ELT and should stop the signal being received on 121.50 MHz.

7.39 *CARBURETOR ICE DETECTION SYSTEM

A carburetor ice detection system is available as optional equipment.

The system consists of a control box mounted on the instrument panel, a probe sensor mounted in the carburetor and a red warning light to indicate the presence of ice in the carburetor. If ice is present apply full carburetor heat. Refer to Carburetor Icing, Section 3, Emergency Procedures. To adjust the system for critical ice detection, first turn on the airplanes master switch and then turn on the ice detection unit. Turn the sensitivity knob fully counterclockwise causing the carb. ice light to come on. Now rotate the sensitivity knob back (clockwise) until the ice light just goes out. This establishes the critical setting.

WARNING

This instrument is approved as optional equipment only and Flight Operations should not be predicated on its use.

*Optional equipment

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