SECTION VII

SYSTEMS DESCRIPTION

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AIRFRAME

The BEECHCRAFT Sundowner C23 is a four place, single-engine landplane with non-retractable landing gear and is powered by an Avco Lycoming four-cylinder, horizontally opposed engine with a fixed pitch propeller.

SEATING ARRANGEMENTS

In the standard configuration two adjustable seats and one fixed-bench seat are installed. Optional split 3rd and 4th seats are available. To adjust either of the front seats, pull the release knob below the left forward seat corner (pull to the right, then up) and slide the seat forward or aft as desired. Make certain the seat is locked securely in place after adjustment. The backs of all individual seats can be placed in any of three positions. Outboard armrests for the front seats are attached to the cabin doors.

FLIGHT CONTROLS

CONTROL SURFACES

The control surfaces are operated with conventional cable systems terminating in bellcranks.

CONTROL COLUMN

A single control column/wheel is installed as standard equipment on the left side. The optional control column/wheel may be installed on the right side. These are provided for stabilator and aileron control.

RUDDER PEDALS

The standard installation provides pedals for rudder control on the left side only. The optional installation provides a set of rudder pedals for both front seats.

STABILATOR TRIM SYSTEM

MANUAL TRIM

The manual stabilator trim is actuated by a handwheel located between the front seats. A stabilator tab position indicator is located adjacent to the trim control handwheel. Forward movement of the wheel trims the airplane's nose down, aft movement of the wheel trims the airplane's nose up.

ELECTRIC TRIM

The optional electric trim system is controlled by the ON-OFF switch located on the instrument panel, a thumb switch on the control wheel and a circuit breaker on the right subpanel. The ON-OFF switch must be on the ON position to operate the system. The thumb switch is moved forward for nose down, aft for nose up and when released, returns to the center OFF position. When the system is not being electrically actuated, the manual trim control wheel may be used.

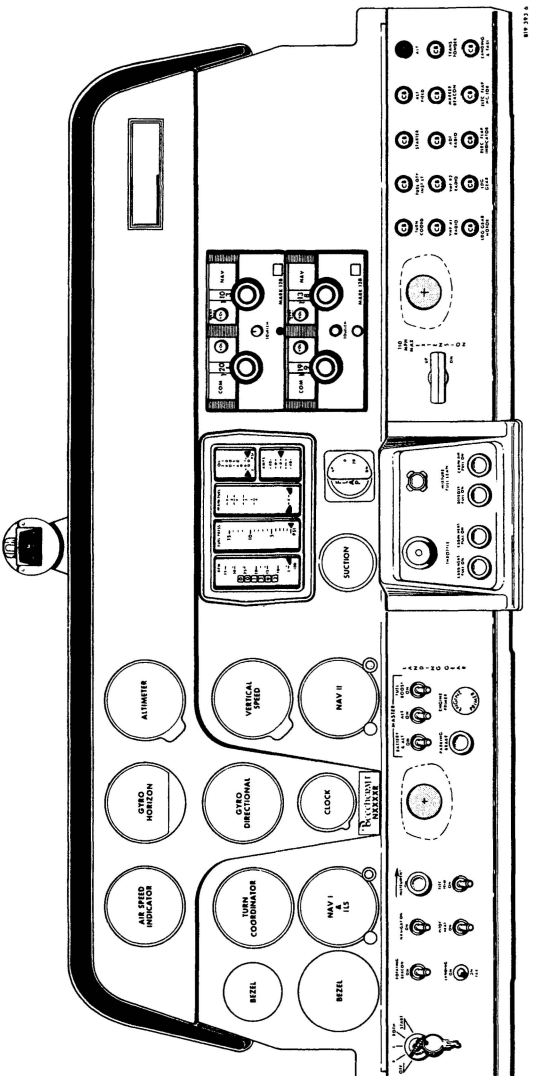
INSTRUMENT PANEL

The standard instrument panel consists of flight and navigation instruments on the left, and an avionics section on the right. The switching panel and the engine gages are located on the left subpanel and the circuit breaker grouping is on the right subpanel.

SWITCHES

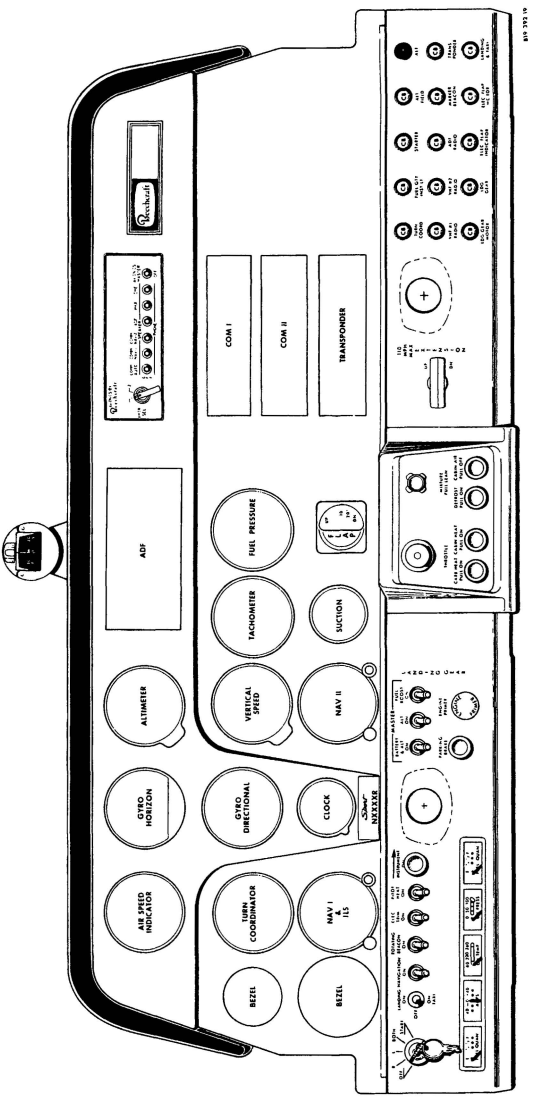
The Battery, Alternator, and Fuel Boost switches are grouped on the subpanel to the right of the pilot's control column under the marking MASTER. The Pitot Heat, Electric Trim, Magneto/Start, and light switches are to the left of the pilot's control column. (See page 1-9 for battery switch description.)

TYPICAL INSTRUMENT PANEL



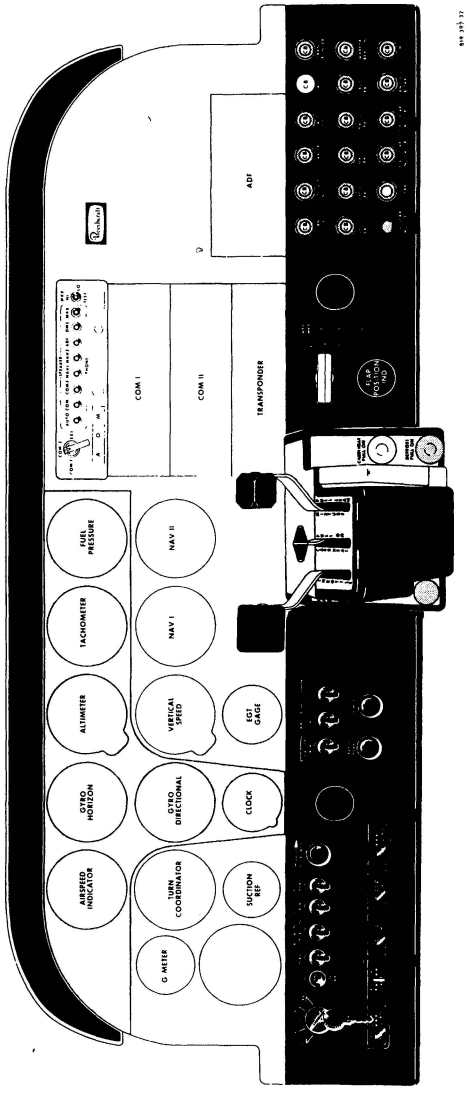
M-1285 thru M-1375

TYPICAL INSTRUMENT PANEL



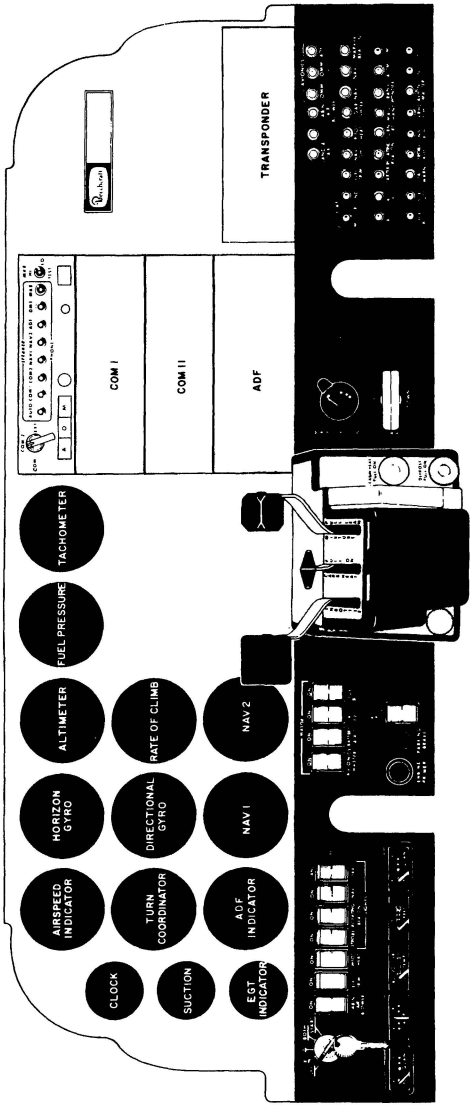
M-1376 thru M-1454

TYPICAL INSTRUMENT PANEL



M-1455 thru M-1979 except M-1971

TYPICAL INSTRUMENT PANEL



(M-1971, M-1980 and after)

CIRCUIT BREAKERS
The circuit breakers are located on the right subpanel.

FLIGHT INSTRUMENTS

The standard flight instruments are grouped in a "T" pattern on the main panel for the best presentation for the pilot. The magnetic compass is located above the instrument panel.

Ram air pressure for the airspeed indicator enters through the pitot tube under the left wing, static air pressure for the altimeter, vertical speed and airspeed indicator is supplied by a static port on each side of the fuselage, just aft of the cabin.

M-1285 through M-1979 except M-1971:

Instrument lights are turned on and dimmed by a rheostat switch located on the left subpanel, and a rheostat switch located below the power quadrant.

M-1971, M-1980 and after:

Instrument lights are turned on and dimmed by two rheostat switches located on the pedestal, below the power quadrant.

GROUND CONTROL

Steering is accomplished by the use of rudder pedals through a spring-loaded linkage connecting the nose gear to the rudder pedals. The nose gear maximum travel is 40° ± 2° right or left, and a hydraulic shimmy damper on the nose gear yoke compensates for any tendency to shimmy. Toe brakes may be used to aid in steering the airplane on the ground.

The minimum wing-tip turning radius, using full steering, one brake and partial power is 23 feet 11 inches.

WING FLAPS

MANUAL

The four position flaps are operated by a manual lever located between the front seats. In addition to the full flap down position of 35°, intermediate positions are provided. As the handle is raised to lower the flaps, a definite detent and click of the thumb release button will be felt at the 15° and 25° flap extended positions. Another detent will indicate the 35° position. To retract the flaps, depress the thumb button and lower the handle to the floor. The thumb button does not need to be depressed, nor should it be, to lower the flaps.

ELECTRIC

The electric wing flaps are controlled by a three-position switch UP, OFF and DOWN, located to the right of the power quadrant. The switch must be pulled out of detent before it can be repositioned. A dial type indicator has markings for UP, 10 DEGREES, 20 DEGREES and DOWN. The indicator is located adjacent to the power quadrant.

Limit switches automatically turn off the electrical motor when the flaps reach the extremes of travel. Intermediate flap positions can be obtained by placing the three-position switch in the OFF position during flap extension or retraction.

CAUTION

Establish recovery altitude, recovery power, and airspeed before retracting flaps during slow flight, particularly during recoveries from approach configuration.

LANDING GEAR

The fixed tricycle landing gear, fabricated from magnesium castings and aluminum forgings, uses rubber disks for shock absorption.

The gears are identical except for the pivoting and steering provisions on the nose gear and the brake attachment points on the main gear.

The nose wheel is steerable through a spring loaded linkage connected to the rudder pedals and has a maximum travel of 40° ± 2° in either direction. A hydraulic damper on the nose wheel strut compensates for any tendency to shimmy. Toe brakes will aid in steering the airplane on the ground.

BRAKES

The brakes on the main landing gear wheels are operated by applying toe pressure to the rudder pedals. The parking brake push-pull control is located on the right side of the lower left subpanel. To set the parking brakes, pull the control out and depress the pilot's toe pedals until firm. Push the control in to release the brakes.

NOTE

Wheel chocks should be installed and the parking brake left off if the airplane is to be left unattended. Changes in ambient temperature can cause the brakes to release or to exert excessive pressures.

BAGGAGE COMPARTMENT

A 19.5 cubic-foot baggage space is located behind the rear seat. In addition, a hat shelf near the top of the cabin enclosure provides an out-of-the-way space for light miscellaneous articles. Both the baggage compartment and hat shelf are accessible in flight.

WARNING

Unless authorized by applicable Department of Transportation Regulations, do not carry hazardous material anywhere in the airplane.

WARNING

Do not carry children in the baggage compartment unless secured in a seat.

SEATS, SEAT BELTS, AND SHOULDER HARNESSES

SEAT ADJUSTMENTS

To adjust either of the front seats, pull up on the release bar below the left hand seat corner and slide the seat forward or aft, as desired. Make certain the seat is locked securely in place after adjustment. The backs of all individual seats can be placed in any of four positions. Outboard armrests for the front seats are attached to the cabin doors.

SEAT BELTS

All seats are provided with seat belts having a lever-action, quick-release, metal buckle. The seat belt length is adjustable. Holding the buckle at a right angle to the belt releases the binding action, allowing the belt to slip.

SHOULDER HARNESSES

The shoulder harness is a standard installation for all seats and should be used with the seats in the upright position. The spring loading at the inertia reel keeps the harness snug, but will allow normal movement during flight operations. The inertia reel is designed with a locking device that will secure the harness in the event of sudden forward movement or an impact action. The strap is worn over the shoulder and down across the body where it is fastened by a metal loop to the seat belt buckle. The inertia reels for the front and rear seats are attached to the lower cabin sidewall structure at the aft edge of the respective seat. The inertia reel is covered with an escutcheon, and the strap runs up from the reel to a looped fitting attached to the window frame just aft of the seat. For stowing these shoulder harness straps, stowage attach points are provided adjacent to the inertia reel on the cabin sidewall.

NOTE

The seat belt is independent of the shoulder harness. However, the shoulder harness may be used only when the seat belt is fastened.

WARNING

Occupants shorter than 4'7" are not to use shoulder harness.

DOORS AND EXITS

FORWARD CABIN DOORS

The airplane has a conventional cabin door on each side (standard on serials M-1362 and after) of the fuselage adjacent to the forward seats. The outside cabin door handle is spring-loaded to fit into a recess in the door. The door may be locked with a key. To open the door from the out-

side, lift the handle from its recess and pull until the door opens. To close the cabin door from the inside, grasp the armrest attached to the door and firmly pull the door closed. Opening the storm window will alleviate pressure inside the cabin as the door is being closed. On serials M-1285 thru M-1412 and M-1415, M-1419, M-1423, M-1439 and M-1447 a second door latch is installed on the upper aft door frame which must be rotated to the locked position. Press firmly outward at the aft edge of the door. If any movement of the door is detected, completely open the door and close again following the above instructions. To open the door from the inside, lift the door release handle and pull until the door latch releases.

AFT BAGGAGE DOOR

A baggage door, aft of the cabin door on either the left or right side of the fuselage, is provided for loading cargo into the aft cabin. To open the door on the right side from the outside, use the key provided to turn the cam lock. To open the door on the left side from the outside, grasp the flush handle and pull until the door opens. To open the right door from the inside, rotate handle counter clockwise until door opens. This right door lock can be locked with a key.

CONTROL LOCKS

A control lock is provided with the loose tools, to prevent movement of the control column and impairs access to the magneto/start switch.

To install the Control Lock:

1. Level the control wheel and move control column so the holes in the control column hanger and control column will align to accept the pin.

2. Push the control column lock pin through the hole provided in the control column hanger and into the hole in the underside of the control column tube assembly.
3. Ensure positive retention of the lock pin by positioning the hook over the control column.

WARNING

Before starting engine, remove the control lock by reversing the above procedure.

ENGINE

The BEECHCRAFT Sundowner C23 is powered by a Lycoming 0-360-A2G, 0-360-A4G, 0-360-A4J, or 0-360-A4K four-cylinder, horizontally opposed engine, rated at 180 horsepower at 2700 rpm.

Normal operating engine speed range is 1800 to 2700 rpm with a restricted operating range between 2150 and 2350 rpm, for the 0-360-A2G engine only.

ENGINE CONTROLS

The engine controls are centrally located for ease of operation from either the left or right seats. The throttle on the power quadrant incorporates both a locking button and a vernier arrangement for fine adjustments. The mixture control is locked with a clockwise turn of the friction nut located on the forward side of the knob.

When the engine controls are installed in the pedestal arrangement, the levers are grouped along the upper face of the pedestal. Their knobs are shaped to government standard configuration so they can be identified by touch. A single controllable friction lock on the right side of the console permits manual adjusting of the pressure on the levers.

ENGINE INSTRUMENTS

VERTICAL READOUT TYPE

The engine instruments are the vertical readout type. The instrument cluster is installed in the panel directly above the engine controls. The cluster includes a tachometer with hourmeter, fuel pressure indicator, a left and a right fuel quantity indicator, an oil temperature and oil pressure indicator and an ammeter.

DIAL TYPE

The engine instrument cluster is located on the lower left subpanel and includes the left fuel quantity indicator, an ammeter, oil temperature, oil pressure and the right fuel quantity indicator. The tachometer, and the fuel pressure indicator are located on the upper center of the instrument panel.

EXHAUST GAS TEMPERATURE INDICATOR (EGT)

This installation provides for sensitive and rapid indication of exhaust gas temperature to assist in adjusting the fuel/air mixture during cruise.

ENGINE BREAK-IN INFORMATION

New engines have been carefully run-in by the engine manufacturer. However, the engine should be operated on straight mineral oil for a minimum of 50 hours or until oil consumption stabilizes. After the first 25 hours of operation, drain and replace the mineral oil. A change to an approved engine oil should be made after the break-in period. Refer to Lycoming Engine Operator's Manual.

NOTE

In order to promote proper ring seating, cruise

power settings of 65% to 75% should be used until a total of 50 hours has accumulated or until oil consumption has stabilized. This recommendation is applicable to in-service engines following cylinder replacement or top-overhaul of one or more cylinders, as well as to new engines.

COWLING

The cowling is the split-type and is removable to expose the engine and mount assemblies.

LUBRICATION SYSTEM

The engine oil system is the wet-sump type and has an 8-quart capacity. Oil operating temperatures are controlled by an automatic thermostat bypass control. The bypass control will limit oil flow through the oil cooler when operating temperatures are below normal, and will permit the oil to bypass the cooler if it should become blocked.

CARBURETOR HEAT

There is a possibility of ice forming in the induction system under certain moist atmospheric conditions. Generally ice may form in the vicinity of the carburetor butterfly and may build up enough that a drop in power output could result. The induction installation is equipped with a system for preheating the incoming air to the carburetor. The air preheater is essentially a tube or jacket through which the exhaust pipe from one or more cylinders is passed, and the air flowing over these surfaces is heated. A push-pull control located on the power quadrant or the center lever on the pedestal, actuates a diverter gate which allows the hot air to mix with the cold air in the induction chamber before it enters the carburetor. For fur-

ther information concerning the use of carburetor heat consult engine manufacturer's operating manual.

STARTER

A magneto/start switch, located on the subpanel to the left of the pilot's control column, incorporates R(right), L(left) and BOTH magneto positions in addition to the normal OFF and START positions. After activation of the starter the spring-loaded switch returns to the BOTH position when released. Battery switch and alternator switch are grouped on the subpanel to the right of the pilot's control column.

The warning light placarded STARTER ENGAGED (M-2278 and after) illuminates whenever electrical power is being supplied to the starter. If the light remains illuminated after starting, the starter relay has remained engaged, and loss of electrical power and possible equipment damage will eventually result. Turn the Battery Switch and Alternator Switch OFF. If in flight, land as soon as practical. If the light does not illuminate during starting, the indicator system is inoperative and the ammeter must be monitored to ensure that the starter does not remain energized after releasing the magneto/start switch.

PROPELLER

Sensenich M76EMMS-0-60 or 76EM8S5-0-60 fixed pitch, two blade propeller. Static rpm at maximum permissible throttle settings: Not over 2350 rpm and not under 2250 rpm. No additional tolerance permitted.

FUEL SYSTEM

The airplane is designed for operation on 91/96 (Blue) grade aviation gasoline. In the event this grade is not

available, 100 (Green) or 100LL (Blue) grade aviation gasolines may be used.

CAUTION

See Avco Lycoming Service Letter No. L185A or later revision for operation on alternate fuels.

FUEL TANKS

Fuel tanks located in each wing leading edge have a nominal capacity of 29.9 gallons. In the filler neck of each tank is a visual measuring tab which permits partial filling of the fuel system. When the fuel touches the bottom of the tab it indicates 15 gallons of fuel, and when filled to the slot in the tab it indicates 20 gallons of fuel. The indicating system reads full at 20 gallons. The pilot must visually check the fuel level during preflight to ascertain desired level. Fuel is fed from the desired tank through a fuel selector valve in the center floorboard and then through a strainer to the engine-driven fuel pump.

FUEL DRAINS

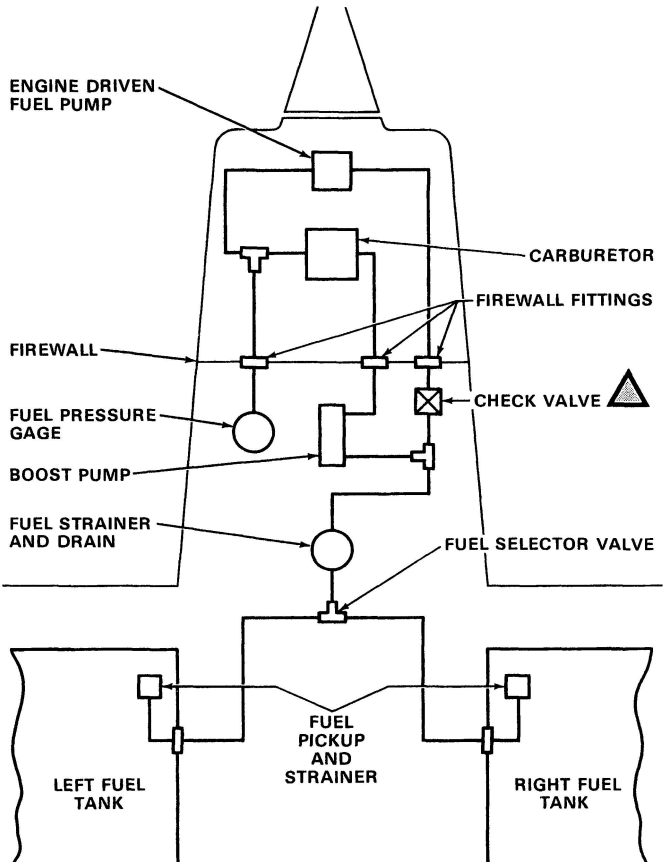
Two tank sump drains extend through the bottom of the wing skins, near the fuselage. M-1971, M-1980 and after have flush-type drain valves. The system low spot drain is incorporated in the fuel strainer on the lower right side of the fuselage aft of the nose wheel. Sump drains provide a means to visually inspect the fuel for water or contaminants.

Refer to HANDLING, SERVICING AND MAINTENANCE Section for procedures describing how and when to use fuel tank sump drains.

FUEL QUANTITY INDICATORS

Fuel quantity is measured by a float operated sensor, located in each wing tank system. These transmit electrical

FUEL SYSTEM SCHEMATIC



▲ *EFFECTIVE M-1820, M-1837, M-1842, M-1845, M-1853, M-1854, M-1856, M-1860, M-1861, M-1862, M-1865, M-1866, M-1869, M-1871 AND AFTER.*

signals that indicate fuel remaining in each tank. The indicators indicate full when 20 or more gallons are in each wing tank.

FUEL BOOST PUMP

The electric fuel boost pump is controlled by an ON-OFF switch on the pilot's subpanel. It provides pressure for starting, taxiing, takeoff, climb, landing and emergency operation in cruise configuration. Immediately after starting the fuel boost pump should be turned off to test the engine driven fuel pump.

ENGINE PRIMER

The control for the engine primer is located directly below the master switches on the left subpanel. It is used to inject raw fuel into the induction system for cold starts. After use, secure the primer by turning it to lock it in the off position.

FUEL TANK SELECTION

The fuel selector valve handle is located on the floorboards between the pilot and copilot seats. Takeoffs and landings should be made using the tank that is more nearly full.

NOTE

On serials M-2225 and after, or on airplanes which have complied with BEECHCRAFT S.I. No. 1095, a fuel selector stop has been added to the selector valve guard. The fuel selector stop minimizes the possibility of inadvertently turning the fuel selector valve to the OFF detent position. The stop is a spring which must be depressed before the selector valve handle can be rotated to the OFF position.

If the engine stops because of insufficient fuel, refer to the EMERGENCY PROCEDURES Section for the Air Start procedures.

FUEL REQUIRED FOR FLIGHT

It is the pilot's responsibility to ascertain that the fuel quantity indicators are functioning and maintaining a reasonable degree of accuracy, and to be certain of ample fuel for a flight. Takeoff is prohibited if the fuel quantity indicators do not indicate above the yellow arc. The caps should be removed and fuel quantity checked to give the pilot an indication of fuel on board. The airplane must be approximately level for visual inspection of the tank. Fuel should be added so that the amount of fuel will be not less than is required for takeoff. Plan for an ample margin of fuel for any flight.

ELECTRICAL SYSTEM

The system circuitry is the single-wire, ground-return type, with the airplane structure used as the ground return. The battery, alternator, fuel boost, and magneto/start switches are located on the left subpanel. The circuit breaker panel, located on the right subpanel, contains the protective circuit-breakers for the various electrical systems. Some switch-type circuit breakers are located on the left subpanel.

In addition, on serials M-1285 thru M-1979, there is an in-line fuse in the rotating beacon wire and in the strobe light wire forward of the left subpanel, with spare fuses adjacent to the fuse holder. There is also a fuse on the left side of the quadrant pedestal for the electric clock (if installed), or an inline fuse near the battery box.

BATTERY

14-VOLT SYSTEM

A 12-volt battery is located in the aft fuselage. Battery servicing procedures are described in the HANDLING, SERVICING AND MAINTENANCE Section.

28-VOLT SYSTEM

One 24-volt battery, or two 12-volt batteries in series, are located in the aft fuselage. The two 12-volt batteries in series are of a shape and size such that both will fit in the same battery compartment which is provided for the 24-volt battery. Battery servicing procedures are described in the HANDLING, SERVICING AND MAINTENANCE Section.

ALTERNATOR

14-VOLT SYSTEM

The alternator maintains its full-rated 60-ampere output at cruise engine rpm, and uses a voltage regulator to adjust alternator output.

Since the alternator is not self-exciting, dual switches are required to activate the circuit. The switch placarded BATTERY & ALT, when placed in the ON position, will only activate the battery circuit. When this switch is on and the ALT (FIELD) switch is placed in the ON position, the alternator is excited by power from the airplane battery. When the BATTERY & ALT switch is in the OFF position, the alternator will be off regardless of the ALT (FIELD) switch position.

The alternator-field circuit breaker and alternator-output circuit breaker are located on the right subpanel (serials M-1285 through M-2130). On airplanes M-2131 through M-2178 (and M-1491 through M-2130 with installation of Beech Kit No. 23-3009-1 S) the alternator circuit is protected by an alternator-field circuit breaker on the right subpanel, and an alternator-output current limiter on the firewall.

28-VOLT SYSTEM

The 28-volt alternator is rated at 70 amps nominal output at cruise engine rpm. A self-exciting feature provides for activation of the alternator independent of battery power when the engine reaches a speed of 1200 to 1500 rpm. A switch on the pilot's subpanel placarded ALT FIELD controls the alternator circuit. Circuit breakers for the alternator are located on the right subpanel.

CAUTION

Do not pull alternator circuit breaker to turn off electrical system except in an emergency.

The alternator output is controlled by a regulator to keep the battery in a fully charged condition. Monitoring the ammeter for proper operation of the alternator is the same as for a generator installation. A zero reading, which is normal in cruising flight, indicates that the battery is fully charged and that the alternator output has been adjusted by the voltage regulator to balance the load of the electrical equipment in use.

Should an alternator or regulator become inoperative, indicated by a heavy discharging or widely fluctuating ammeter indication, turn the ALT switch to OFF, and minimize the electrical current consumption, since only battery power is available. Have the difficulty corrected before the next flight.

Refer to HANDLING, SERVICING AND MAINTENANCE Section for minor maintenance of the alternator.

EXTERNAL POWER RECEPTACLE

The external power receptacle is optional on this airplane.

If installed, it is located on the right side of the fuselage (M-1285 through M-2354) or on the left side of the fuselage (M-2355 and after) aft of the wing. Airplanes equipped with a 14-volt electrical system require a power unit set to 13.75 to 14.25 volts, while those equipped with a 28-volt electrical system require a setting of 27.75 to 28.25 volts.

CAUTION

On 14-volt airplanes, the power pin for external power is connected directly to the battery and continually energized. Turn off battery and alternator switches and all electrical and avionics switches when connecting the auxiliary power unit plug. Assure correct polarity (negative ground) before connecting auxiliary power unit. Turn on the battery switch before turning on the auxiliary power unit.

On 28-volt airplanes, a reverse polarity diode protection system is between the external power receptacle and the main bus. With external power applied, the bus is powered. Turn on the battery switch only, with all other switches including avionics switches off, when connecting the auxiliary power unit. Assure correct polarity before connecting external power.

LIGHTING SYSTEMS

INTERIOR LIGHTING

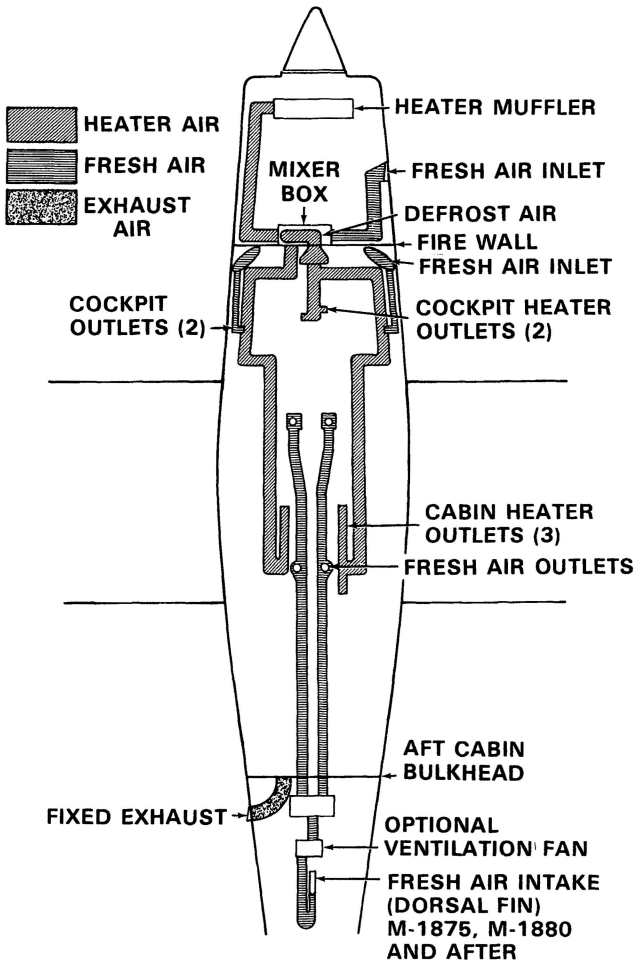
Lighting for the instrument panel is controlled by a rheostat switch located on the pilot's subpanel to the left of the control column (M-1285 through M-1979 except M-1971), or on the pedestal below the power quadrant (M-1971, M-1980 and after). The cabin dome light is operated by an ON-OFF switch adjacent to the light. The overhead instrument lighting and the map light (M-2224, M-2234 and after do not have a map light installed) are controlled by a rheostat switch located on the pedestal, below the power quadrant.

EXTERIOR LIGHTING

The switches for all of the exterior lights are located on the pilot's left subpanel. Each circuit is protected by a circuit breaker switch, circuit breaker, or fuse. The exterior lights consist of navigation lights on the wing tips and rudder, a landing light on the left outboard wing and taxi lights on both outboard wings. The landing light can be used for approach and taxiing. For longer battery and lamp life, use the landing light sparingly; avoid prolonged operation which could cause overheating during ground maneuvering.

NOTE

Particularly at night, reflections from rotating anti-collision lights or strobe lights on clouds, dense haze or dust can produce optical illusions and intense vertigo. Such lights, when installed, should be turned off before entering an overcast; their use may not be advisable under instrument or limited VFR conditions.



ENVIRONMENTAL SCHEMATIC

ENVIRONMENTAL SYSTEMS

CABIN HEATING

Air for warming the cabin and defrosting the windshield enters through an intake on the forward engine baffle, passes through the heater and into a mixer box where it is blended with cold air to obtain the desired cabin temperature. Hot or cold air may enter the cabin through the firewall outlets. The knob marked CABIN AIR regulates the quantity of air entering the cabin through this firewall outlet. With the CABIN AIR knob in, pull out the CABIN HEAT knob for heated air and push it in for fresh air. There are 4 outlets for cabin heat distribution. Pull out the DEFROST knob for maximum defrost. Under extremely cold conditions, heating in the back seats can be improved by partially pulling the defrost knob.

VENTILATION

M-1285 thru M-1879 except M-1875:

Fresh air for the cabin enters two grill type intakes immediately forward of the windshield. The air is ducted to four outlets, one on either side of the instrument panel and to two overhead outlets for rear seat passengers. The flow of air is controlled by the rotation of these outlets.

M-1875, M-1880 and after:

Fresh air for the cabin enters through two grill type intakes immediately forward of the windshield and through a scoop type intake on the dorsal fin. The grill type intakes supply fresh air to the outlets on each side of the instrument panel. The scoop type intake supplies fresh air to the four overhead outlets. Air flow through the outlets is regulated by rotating the outlet. An optional fan, controlled by a

switch, facilitates ventilation for ground operation. The switch is located on the pedestal (M-1875, M-1880 thru M-1979, except M-1971), or on the left instrument subpanel (M-1971, M-1980 and after). The fan should be off when the airplane is airborne.

EXHAUST VENT

A fixed exhaust vent is located in the aft cabin for flow-through ventilation.

PITOT AND STATIC SYSTEMS

PITOT SYSTEM

The pitot system provides a source of impact air for operation of the airspeed indicator. The pitot mast is located on the leading edge of the left wing.

PITOT HEAT

The pitot mast is provided with an electric heating element which is turned on and off with a switch on the instrument panel. The switch should be ON when flying in visible moisture. It is not advisable to operate the pitot heating element on the ground except for testing or for short intervals of time to remove ice or snow.

NORMAL STATIC AIR SYSTEM

The normal static air system provides a source of static air to the flight instruments through a flush static fitting on each side of the aft fuselage. A union located inside a cover plate on the belly of the airplane provides a drain point to remove moisture from the system.

EMERGENCY STATIC AIR SYSTEM

An emergency static air source may be installed to provide air for instrument operation should the static ports become blocked. Refer to the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual Supplement for procedures describing how and when to use this system.

VACUUM SYSTEM

Vacuum for air-driven gyroscopic flight instruments and other air-driven equipment is supplied by an engine-driven vacuum pump. An adjustable relief valve controls suction by bleeding outside air into the vacuum pump.

A suction gage indicates system vacuum in inches of mercury. This instrument is located on the pilot's side of the instrument panel. The vacuum should be maintained within the green arc for proper operation of the air-driven instruments.

STALL WARNING SYSTEM

A stall warning horn located in the overhead speaker console sounds a warning 5 to 7 mph above a stall condition and continues steadily as the airplane approaches a complete stall. The stall warning horn, triggered by a sensing vane on the leading edge of the left wing, is equally effective in all flight configurations and at all weights.

NOTE

With the battery switch in the OFF position the stall warning horn is inoperative. Airplane certification requires the stall warning system to be on during flight except in emergency conditions as stated in Section III.