

ELECTRICAL SYSTEM

Electrical power for the Twin Comanche is supplied by a 12-volt, direct-current, negative-ground system. The primary electrical power source on the A and B models is a 12-volt, 50-ampere generator (dual generators optional) controlled by a voltage and current regulator. The C model is equipped with dual 12-volt, 70-ampere alternators protected by an overvoltage relay. Secondary power is provided by a 12-volt, 35 ampere-hour battery which supplies power for starting, and is a reserve power source in the event of generator or alternator failure.

The battery is mounted in a stainless-steel box either immediately aft of the baggage compartment or in the nose section. The voltage regulator and overvoltage relay is mounted on the aft bulkhead of the nose section. The ammeter, located on the instrument panel near the engine gauge cluster, indicates battery discharge.

Electrical switches are located on the lower left side of the instrument panel. The master switch is positioned on the far left of these switches. Circuit breakers on the A and B models are mounted in the floorboard below the power quadrant. Circuit breakers on the C model are mounted on the lower right of the instrument panel.

Standard lighting on the Twin Comanche includes navigation lights, landing lights, cabin and instrument lights. Optional equipment includes a rotating beacon and strobe lights. A combination on-off rheostat switch controls the instrument and radio lights.

INSTRUMENT PANEL

The instrument panel is designed to accommodate the customary advanced flight instruments, the normally required engine instruments, and avionics for VFR and IFR flight. Flight instruments on the C model are arranged in the "T" configuration. The artificial horizon and directional gyro are vacuum operated. The turn-indicator or turn coordinator gyro is electrically operated and serves as a standby for the vacuum gyros in the event of a vacuum system failure.

Radios are located in the center section of the instrument panel. The avionics master switch (if installed) is typically located with the other electrical switches to the right of the master switch.

VACUUM SYSTEM

The vacuum system provides the suction necessary to operate the attitude indicator and the directional gyro. The engine-driven system consists of two vacuum pumps, each of which has its own vacuum relief valve with filter, a system inlet-air filter, and a suction gauge. If suction is lost from one of the vacuum pumps, a check valve closes and adequate suction is supplied by the remaining pump. A mechanical warning indicator located in the suction gauge will indicate which pump has failed.

The vacuum pumps are dry-type pumps. A shear drive in the pump assembly protects the engine from damage. Caution should be exercised to insure that the propeller is never pulled through backward, as doing so will damage the rotary vanes in the vacuum pump and potentially render the gyros inoperative.

The vacuum regulator is adjustable to a normal reading of 5.0 inch Hg plus .1 or minus .2 inch Hg. Proper adjustment is important because higher settings will damage the gyros, and the instruments will be unreliable with a low setting.