

The wing flap system circuit is protected by a 15-ampere circuit breaker, labeled FLAP, on the left side of the switch and control panel.

A gear warning interconnect switch is incorporated in the flap system, and sounds a warning horn when the flaps are extended beyond 25° with the landing gear retracted.

LANDING GEAR SYSTEM

The landing gear is a retractable, tricycle type with a steerable nose wheel and two main wheels. Shock absorption is provided by the tubular spring-steel main landing gear struts and the air/oil nose gear shock strut. Each main gear wheel is equipped with a hydraulically actuated disc-type brake on the inboard side of each wheel.

The landing gear extension, retraction, and main gear down lock operation is accomplished by hydraulic actuators powered by an electrically-driven hydraulic power pack (see figure 7-7). The power pack is located aft of the firewall between the pilot's and copilot's rudder pedals. The hydraulic system fluid level may be checked by utilizing the dipstick/filler cap located on the top right side of the power pack adjacent to the motor mounting flange. The system should be checked at 25-hour intervals, and anytime a hydraulic failure in the system requires the use of the emergency hand pump to extend the landing gear. If the fluid level is at or below the ADD line on the dipstick; hydraulic fluid (MIL-H-5606) should be added to maintain the level to the top of the dipstick / filler cap opening. A normal operating pressure of 1000 PSI to 1500 PSI is automatically maintained in the landing gear system, and is sufficient to provide a positive up lock pressure on the main landing gear. The nose gear incorporates an over-center mechanical linkage which provides a positive mechanical up and down lock. Mechanically-actuated wheel well doors are provided for the nose gear. The doors open when the nose gear extends, and close when it retracts.

Power pack operation is started and stopped by a pressure switch, and hydraulic pressure is directed by the landing gear lever. Two position indicator lights are provided to show landing gear position. The landing gear system is also equipped with a nose gear safety (squat) switch, an emergency extension hand pump, and a gear-up warning system.

LANDING GEAR LEVER

The landing gear lever is located on the switch and control panel to the

right of the electrical switches. The lever has two positions, labeled GEAR UP and GEAR DOWN, which give a mechanical indication of the gear position selected. From either position, the lever must be pulled out to clear a detent before it can be repositioned; operation of the landing gear system will not begin until the lever has been repositioned. After the lever has been repositioned, it directs hydraulic pressure within the system to actuate the gear to the selected position.

LANDING GEAR POSITION INDICATOR LIGHTS

Two position indicator lights, adjacent to the landing gear control lever, indicate that the gear is either up or down and locked. Both the gear-up (amber) and gear-down (green) lights are the press-to-test type, incorporating dimming shutters for night operation. If an indicator light bulb should burn out, it can be replaced in flight with the bulb from the remaining indicator light.

LANDING GEAR OPERATION

To retract or extend the landing gear, pull out on the gear lever and move it to the desired position. After the lever is positioned, the power pack will create pressure in the system and actuate the landing gear to the selected position. During a normal cycle, the gear locks up or down, limit switches close, and the indicator light comes on (amber for up and green for down) indicating completion of the cycle. After indicator light illumination, the power pack will continue to run until the fluid pressure reaches 1500 PSI, opens the pressure switch, and turns the power pack off. Whenever fluid pressure in the system drops below 1000 PSI, the pressure switch will close and start power pack operation, except when the nose gear safety (squat) switch is open.

The safety (squat) switch, actuated by the nose gear, electrically prevents inadvertent retraction whenever the nose gear strut is compressed by the weight of the airplane. When the nose gear is lifted off the runway during takeoff, the squat switch will close, which may cause the power pack to operate for 1 to 2 seconds and return system pressure to 1500 PSI in the event pressure has dropped below 1000 PSI. A switch type circuit breaker is also provided in the system as a maintenance safety feature. With the switch pulled out, landing gear operation is prevented. After maintenance is completed, and prior to flight, the switch should be pushed back in.

EMERGENCY HAND PUMP

A hand-operated hydraulic pump, located between the front seats, is provided for manual extension of the landing gear in the event of a hydraulic system failure. The landing gear cannot be retracted with the

hand pump. To utilize the pump, extend the handle forward, and pump vertically. For complete emergency procedures, refer to Section 3.

LANDING GEAR WARNING SYSTEM

The airplane is equipped with a landing gear warning system designed to help prevent the pilot from inadvertently making a wheels-up landing. The system consists of a throttle actuated switch which is electrically connected to a dual warning unit. The warning unit is connected to the airplane speaker.

When the throttle is retarded below approximately 12 inches of manifold pressure at low altitude (master switch on), the throttle linkage will actuate a switch which is electrically connected to the gear warning portion of a dual warning unit. If the landing gear is retracted (or not down and locked), an intermittent tone will be heard on the airplane speaker. An interconnect switch in the wing flap system also sounds the horn when the wing flaps are extended beyond 25° with the landing gear retracted.

BAGGAGE COMPARTMENT

The baggage compartment consists of the area from the back of the rear passenger seats to the aft cabin bulkhead. A baggage shelf, above the wheel well, extends aft from the aft cabin bulkhead. Access to the baggage compartment and the shelf is gained through a lockable baggage door on the left side of the airplane, or from within the airplane cabin. A baggage net with six tie-down straps is provided for securing baggage, and is attached by tying the straps to tie-down rings provided in the airplane. For further information on baggage tie-down, refer to Section 6. When loading the airplane, children should not be placed or permitted in the baggage compartment, and any material that may be hazardous to the airplane or occupants should not be placed anywhere in the airplane. For baggage area and door dimensions, refer to Section 6.

SEATS

The seating arrangement consists of two separate adjustable seats for the pilot and front passenger, a split-backed fixed seat in the rear, and a child's seat (if installed) aft of the rear seats. The pilot's and front passenger's seats are available in two different designs: four-way and six-way adjustable.

Four-way seats may be moved forward or aft, and the seat back angle changed. To position either seat, lift the tubular handle under the center of the seat, slide the seat into position, release the handle, and check that the seat is locked in place. The seat back is spring-loaded to the vertical position. To adjust its position, lift the lever under the right front corner of the seat, reposition the back, release the lever, and check that the back is locked in place. The seat backs will also fold full forward.

The six-way seats may be moved forward or aft, adjusted for height, and the seat back angle is infinitely adjustable. Position the seat by lifting the tubular handle, under the center of the seat bottom, and slide the seat into position; then release the lever and check that the seat is locked in place. Raise or lower the seat by rotating a large crank under the right corner of the left seat and the left corner of the right seat. Seat back angle is adjustable by rotating a small crank under the left corner of the left seat and the right corner of the right seat. The seat bottom angle will change as the seat back angle changes, providing proper support. The seat backs will also fold full forward.

The rear passengers' seats consist of a fixed one-piece seat bottom with individually adjustable seat backs. Two adjustment levers, on the left and right rear corners of the seat bottom, are used to adjust the angle of the respective seat backs. To adjust either seat back, lift the adjustment lever and reposition the back. The seat backs are spring-loaded to the vertical position.

A child's seat may be installed aft of the rear passenger seats, and is held in place by two brackets mounted on the floorboard. The seat is designed to swing upward into a stowed position against the aft cabin bulkhead when not in use. To stow the seat, rotate the seat bottom up and aft as far as it will go. When not in use, the seat should be kept in the stowed position.

Headrests are available for any of the seat configurations except the child's seat. To adjust the headrest, apply enough pressure to it to raise or lower it to the desired level. The headrest may be removed at any time by raising it until it disengages from the top of the seat back.

SEAT BELTS AND SHOULDER HARNESSSES

All seat positions are equipped with seat belts (see figure 7-4). The pilot's and front passenger's seats are also equipped with separate shoulder harnesses; separate shoulder harnesses are also available for the rear seat positions. Integrated seat belt/shoulder harnesses with inertia