AP/TRIM DISC switch on the pilot's or copilot's yoke. Pulling the PITCH TRIM circuit breaker on the left circuit breaker panel will remove power from the electric trim motor.

Rudder

Rudder control is very effective at all flight speeds. Full rudder deflection is 22 ±1° either side of center. The rudder trim tab is a servo type which reduces pedal pressures and provides adjustable trim. For each degree of angular displacement of the rudder, the trim tab will move approximately one-half degree in the opposite direction. The rudder trim is mechanically operated by the rudder trim wheel on the center pedestal. With the rudder in the trail position, the trim tab will deflect 10 ±1° left and right. An indicator on the pedestal shows trim tab position relative to neutral.

Nose Gear Steering

The nose gear is mechanically steered by the rudder pedals to 20° either side of center. Steering is accomplished through mechanical linkage with a bungee that allows the nose gear to center before entering the wheel well on retraction. Additional castering of the nosewheel can be achieved against the bungee by application of differential power and braking. For ground handling and towing, maximum deflection of the nosewheel is 95° either side of center.

Speedbrakes

The speed brakes are installed on the upper and lower surfaces of each wing to permit rapid rates of descent without exceeding V_{MO}/M_{MO} and to spoil lift during landing roll. The speed brakes are electrically controlled and hydraulically actuated by a switch located on the throttle quadrant and may be selected to the fully extended or fully retracted positions. The angular travel for the upper speed brake panels is 58 ±2°. The lower speed brake panels close with the upper panel.

When the speed brake switch is positioned to EXTEND, electrical power is applied to close the bypass valve in the hydraulic system return line and open the speed brake control valve. This allows hydraulic fluid at 1500 PSI to flow to the extend side of the speed brake actuators. Once the speed brakes are extended, the speed brake control valve closes to create a hydraulic lock and hold the speed brakes open. The bypass valve opens and the hydraulic system returns to an open center condition. Moving the speed brake switch to RETRACT again pressurizes the system, and the speed brake control valve allows fluid to go to the retract side of the speed brake actuator.

When the speed brakes are fully retracted, the control valve closes, the hydraulic system bypass valve opens and open center operation resumes.

On airplanes -0232 and On and airplanes -0002 thru -0231 incorporating SB550-27-4 microswitches in the tailcone prevent speed brake extension at engine power settings above approximately 85% N_2. On airplanes -0002 thru -0231 not incorporating SB550-27-4 the speed brake switch can be manually held in the EXTEND position above 85% N_2 RPM. If the speed brakes are extended at lower power settings and the throttles are subsequently advanced above 85%, the speed brakes will retract and the switch will return to the RETRACT position.

In the event of an electrical failure while the speed brakes are extended, the control valve fails to the open position and the speed brakes will trail. If a dual hydraulic pump failure or fluid loss should occur with the speed brakes extended, moving the switch to RETRACT will deenergize the speed brake control valve and the speed brakes will trail.

Flaps

The trailing edge flaps are mechanically controlled and electrically actuated by two geared motors connected in parallel. The design of the drive system and parallel operation of the flap motors is designed to preclude the possibility of a split flap condition. Flap travel is from 0-40 degrees and any intermediate position can be selected. A mechanical detent is installed at the T.O. & APPR. (15°) position of the flap lever. The full flap position is reached by pushing down on the flap lever when passing through the T.O. & APPR. detent. A gear warning horn will sound any time the flaps are selected past the T.O. & APPR. position with the gear not down and locked. The horn cannot be silenced.

Control Lock

The control lock is mechanically operated and when engaged locks the ailerons, elevators and rudder in the neutral position and the throttles in the OFF position. The control lock handle, located below the instrument panel on the left side, controls the system. When the handle is pulled straight aft to the detent, the flight controls and throttles are locked. To release the control lock system, rotate the T-handle 45° clockwise and push it in. With the control lock engaged, the maximum deflection of the nosewheel is restricted to 60° either side of center. Exceeding the degree of turn will cause excessive force to be placed on the control lock mechanism and rudder control cables. Towing the airplane with the control lock engaged should be avoided. The controls should be neutralized before engaging the lock.