STRUCTURES

Structures are of sheet aluminum construction and are designed to ultimate load factors well in excess of normal requirements. All components are completely zinc chromate primed and exterior surfaces are coated with acrylic lacquer.

The main spars of the wings are joined with high strength butt fittings in the center of the fuselage, making in effect a continuous main spar. The spars are attached to the fuselage at the side of the fuselage and in the center of the structure; wings are also attached at the rear spar and at an auxiliary front spar.

The wing airfoil section is a laminar flow type, NACA-642A215, with maximum thickness about 40% aft of the leading edge. This permits the main spar, located at the point of maximum thickness, to pass through the cabin under the rear seat, providing unobstructed cabin floor space ahead of the seat.

LANDING GEAR

The nose gear is steerable with the rudder pedals through a 40 degree arc. During retraction of the gear, the steering mechanism is disconnected automatically to reduce rudder pedal loads in flight. The nose gear is equipped with a hydraulic shimmy dampener.

Retraction of the landing gear is accomplished through the use of an electric motor and gear train, actuating push-pull cables to each of the main gear and a tube to the nose gear. The landing gear motor is beneath the center floor panel and the selector switch on the instrument panel to the left of the power control quadrant.

To guard against inadvertent movement of the landing gear selector on the ground, the handle must also be pulled aft before moving it upward. The gear selector has the shape of a wheel to



flap control which has an airfoil shape. As an added safety feature, the warning horn is connected to the gear selector switch. The horn will then operate if the selector is moved to the UP position with the master switch on and the weight of the airplane on the landing gear. To prevent gear retraction on the ground, an anti-retraction switch is installed on the left main gear.

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Gear Selector Switch stalled on the left main gear. This prevents the completion of the electric circuit to the landing gear motor until the gear strut is within 3/4 inch of full extension.

The gear indicating lights are located conveniently by the gear selector switch. The green indicating light below the selector switch shows that all gear are down and locked. The amber light above the gear selector switch is the gear up indication: it will flash if the power of one engine is reduced below 12 inches of manifold pressure while the gear is up and locked. The gear up warning horn will sound when power is reduced (below approximately 12 inches of manifold pressure) on both engines and the gear is not down and locked. GEAR INDICATION LIGHTS ARE DIMMED WHILE THE INSTRUMENT LIGHTS ARE ON.

The brakes are actuated by toe brake pedals mounted on the left set of the rudder pedals. Hydraulic brake cylinders above the brake pedals are accessible in the cockpit for servicing. Parking brake valves are incorporated in each cylinder and have two cables attached from the parking brake "T" handle. To prevent inadvertent application of the parking brake in flight, a safety lock is incorporated in the valves, thus eliminating the possibility of pulling out the "T" handle until pressure is applied by use of the toe brakes. Toe brakes for the right side are available as optional equipment.