

the narrow root chord, three root fittings are used to absorb adequately the drag and wing torque loads.

During assembly of the ship the hookup of the flap control is automatic via two pins at each side entering the root end of the flap. The aileron controls, which are push-pull tubes out the wings, are bolted to bell cranks in the fuselage after wing assembly. The gap cover hooks over two screw heads at the rear and fastens securely at the front with a pair of wing nuts. The canopy fits under the leading edge of the wing and has a sliding pin connection at the front. The horizontal tail surfaces fold up against the fin and rudder where they are prevented from flapping by the elevator horn bolts. They are lowered into operating position and their struts pinned to the fuselage bottom longeron by only two bolts, the controls being permanently connected. The control surfaces are of steel tubing, fabric covered. Assembly and disassembly take about 20 minutes with a crew of four.

The fuselage is of conventional utility construction—steel tubing, fabric covered. The landing wheel is located at the center of gravity with the average pilot. A spring tail skid and a steel-faced wooden forward skid complete the landing gear—tip skids are not provided. The release is a self-releasing pelican type located under the nose. The stick and rudder pedals are conventional. The flap control lever is at the pilot's left knee, the brake lever in the center forward of the seat, and the release handle is on the instrument panel. As yet no elevator trim arrangement other than a bungee to offset the weight of the elevators is installed but a trailing edge tab is planned. The seat belt is the heavy military type. An adjustable shoulder harness is anchored to the rear of the cabane structure. A large baggage compartment is located aft of the pilot's shoulders. The seat is plywood and non-adjustable. The cockpit, unfortunately, is very small so that only small pilots can sit in it comfortably with a cushion and no parachute. Large pilots are quite cramped and small pilots are cramped when wearing a chute, so a chute is seldom worn. Some correction must be made prior to contest flying where parachutes are required.

Control forces are very light. The rudder balance makes that control too light. Also the fin area, although copying many existing sailplanes,

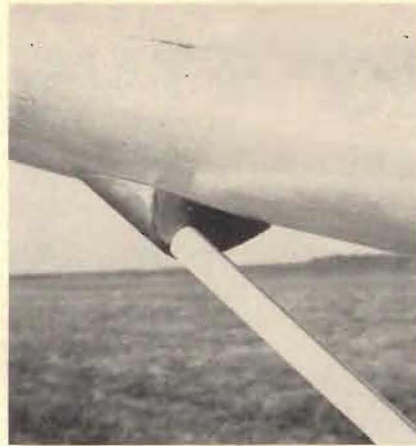


Photo: Art Schultz

The strut intersection with the wing provides for low drag.

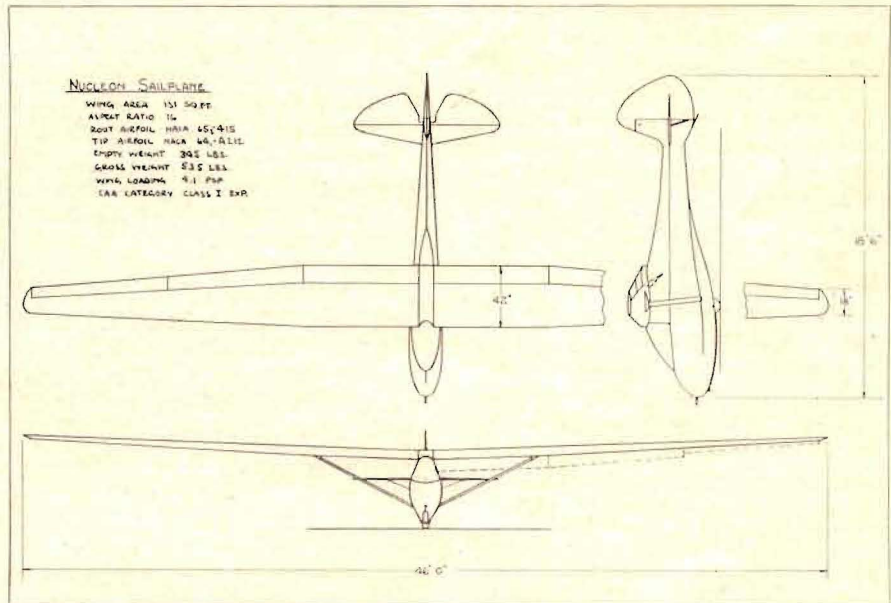


Photo: Art Schultz

The strut intersection with the fuselage.

entirely too small to give adequate directional stability. Corrective measures are planned in that the balance will be removed from the rudder and size of the fin will be doubled. The elevator control force is very light and the control is very effective at all speeds and flap settings. The aileron hinges and all but a few aileron control connections and crank bearings are ball bearing mounted making the aileron control very free and light. The aileron area is sufficient for good lateral control up to the stall. The flap control requires a pull of about 10 pounds with the smaller settings and about 15 pounds at the 50° position in free flight at speeds of 40-50 mph.

Take-off has always been by airplane tow. Usually the flaps are set at 0° as at this setting the ship gets off the ground at about 50 mph, well ahead of the tow ship, and on tow seems to handle best at 0°. The 10° and 20° settings can be used to get above the dust more quickly but in our lush green territory this is seldom necessary. (Illinois C. of C. please, not plug for home state). After release the ship is flown at 0°, 10° or 20° flap settings depending on performance required for best penetration, best glide ratio, or best spiraling speed respectively. In the landing pattern the final leg usually starts with 30° flap to keep in the conventional airplane pattern. The flaps are eased off gradually to flatten the glide and pulled back to steepen it.

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