A steam box of sheet metal and a heavy pot fired by a plumber's blow torch was used to soften up the resin bonded plywood. The nose plywood was then placed directly on to the glued nose ribs. 3/8" rubber shock cord looped around the nose and the main beam held the skin tightly against the ribs. A steel strip directly over the ribs and under the shock cord helped in giving uniform pressure. Wood blocks and wedges were also used where necessary. This arrangement was found to be very satisfactory and good glue joints resulted. After the glue had set the interior of the nose was sprayed with two coats of spar varnish by using a spray nozzle on the end of a long piece of steel tubing.

After all the nose plywood was in place, the bottom interbeam skin at the center line and at the outboard ends of the center section were applied. This assembly was removed from the jig and placed on horses. Spoilers, cables and other items were then installed. The outer panels were assembled in a similar fashion on the same jig, with a few modifications.

The fuselage was constructed in an inverted position on a heavy wood jig. Frames were positioned at the proper stations and aligned. The four spruce longerons were fitted and glued in place. The plywood side skin was glued and clamped into place by means of special bar clamps. Bottom skin was glued and nailed into place, using removable nailing strips. Fuselage was then removed from jig. Controls, cables, instruments, etc., were then added. Application of the top skin using the shock cord method was the final operation. Paint was applied directly to the plywood fuselage.

No glider or airplane development project would be complete without many design changes. This sailplane project certainly is no exception. Flight tests demonstrated the need for a fully enclosed cockpit. The present arrangement causes considerable turbulence. By smoothing out the air flow around the windshield and bottom of the wing, performance should be improved. Another change that has been suggested is the automatic aileron hook-up and rearrangement of panel main beam and rear beam fittings. This would greatly reduce the time required to assemble the sailplane.

Although our experience in actual service with this sailplane has been limited, flight tests have shown that it has good all-around performance, has no apparent vices and that further design, testing and development is justified.

SPECIFICATIONS—SG-5

Span—46 ft.
Length—20 ft. 6".
Height—53".
Airfoil—N.A.C.A. 4415-4412.
Panel tip wash out—5.6°.
Wing aspect ratio—13.9.
Gross weight—550 lbs.
Weight empty—350 lbs.
Pilot—170 lbs.
Equipment—30 lbs.
Wing area—153.1 sq. ft.
Horizontal tail area—22.1 sq. ft.
Rudder area—10.35 sq. ft.
Aileron area—25.3 sq. ft.
Wing loading—3.6 lbs. per sq. ft.
Stalling speed—32 miles per hour.
Best cruising speed—42 miles per hour.
Sinking speed—2.66 ft. per sec.
Gliding ratio—21 to 1.
Airplane towing speed—70 miles per hour.

(*Continued on Back Cover*)