

While the "multi" experts are spending hours tuning their reeds
get airborne with this thoroughly proven rudder-only
single-channel radio controlled
low-winger designed and
flown by Len King, pres.
North Jersey R/C Club.
Original model made
over 100 flights!



So-Lo

■ Low-wing Radio Control planes are here to stay. Wind penetration is better due to added streamlining, cross wind flying seems smoother without the tendency to wallow, and ground handling characteristics are exceptional. For multi-channel, they just can't be beat, but single channel has presented a challenge.

After watching a 6-foot wingspan low-wing 8 channel job perform at a contest, I headed for the drawing board determined to fill the gap between huge multi jobs and the flea sized single channel planes then available.

Three months later "So-Lo" made her debut. Torpedo .15 powered, 55" wingspan, 33½" length, 3 lb.-4 oz. gross, 10 degree dihedral, and low wing were the final spec's on what I hoped would be an ideal rudder-only plane.

Since then, "So-Lo" has racked up over a hundred flights and is still going strong.

Before attempting to fly your "So-Lo," trim the glide by adjusting the stab, then use enough down-thrust to maintain a good rate of climb under full power. On the original plane, about 7 degrees downthrust was employed.

Once you get your "So-Lo" trimmed out, it will amaze you. Take-offs are a dream. The tail lifts off almost instantly and from then on, you're the boss. The ground run makes you think it's on rails. Wait until the wheels leave the runway and then heave it into a nearly vertical bank, and listen to the crowd applaud as it zooms overhead in a tight climbing turn.

Stability, which is a problem in low wingers, proved to be excellent. In fact, it handles just as well, if not better, than any high winged plane I've flown.

When you put it in a banking turn, it has a tendency to stay locked in the groove until reverse rudder is applied.

Most any stunt in the AMA stunt pattern for rudder can be done easily and "So-Lo" looks more spectacular doing them.

In fact, it looked so good that I entered "So-Lo" in the annual New York Mirror Meet and with a 7-minute engine run handicap I managed to take second place in the Rudder-Only category. Then, a couple of weeks later at Charlestown, Rhode Island, I tied for third in the Northeast Regional meet, still flying 7 minutes maximum.

Need I saw more . . . ? If you fly rudder-only, and you're hankering for a change from run-of-the-mill planes, here's your chance.

Fuselage is simplification personified. Two 3/32" hard sheet balsa sides are cut and laid upside down on the top view. Fuselage bulkheads (No.'s 1, 2, 4, 5, and 6) are fitted, while the contour of the side sheets are held to shape with pins. The 3/8" hardwood motor mounts are next fitted into bulkheads 1 and 2. The 1/16" plywood radio deck is then cemented into place on the top of the fuselage sides. Formers 1 through 6 are then mounted on top. The tank comes next. My choice was a 2 oz. Dmeco. This fits on top of the motor mounts perfectly.

At this point the radio deck should be wired and components installed. The

deck layout may not be the same for all, but try to keep the weight forward, if possible. The battery box is the popular 6-pencell nylon type. This was chosen for its ease of installation and perfect fit. The "B" battery boxes may vary with your particular needs. The Mighty Midget was mounted slightly off center to make room for the receiver and also to bring it up front away from the oscillator coil in the receiver. After completing radio and torque rod installation, the 3/16" doublers can be cemented to both sides back to former No. 5. These doublers are then tapered from former No. 4 to No. 5 to give a smooth side contour.

Top is sheeted with 1/16" soft balsa. The bottom stringers are 1/4" square for the center, and 3/16" square for each side bottom stringer. The nose section is built of soft balsa blocks, which are cut and sanded to a streamlined nose section.

Add the headrest and cockpit. On the original, the headrest fairing block was hollowed to keep weight down. The cockpit and headrest may be eliminated and a plastic canopy installed to save time and weight.

Vertical fin and rudder are mounted, and the whole fuselage sanded smooth before covering with silk.

The original sported a fiberglass covered nose section, which is highly recommended for its durability.

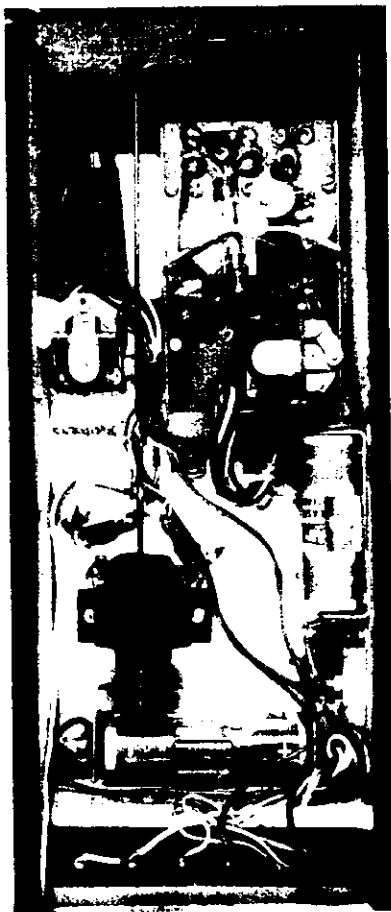
Fin is framed from 3/16" square hard balsa with a 3/16" square filler on either side of bottom and center longitudinal brace, which is cut to airfoil shape. The hinges used were brass tubing with a music wire pin. For proportional use, this type of hinge is exceptional.

Rudder is built of 3/16" soft balsa sheet sanded to an airfoil shape.

American Modeler — March 1961

Models above are same span. Full size So-Lo plans on Group #361 from Hobby Helpers, 1543 Stillwell Ave., New York 61, N. Y. (\$1.10).

First So-Lo flies with Babcock Magic Carpet receiver (left). Len's So-Lo #2 uses McEntee Tech Twin 27 home-built equipment (right).



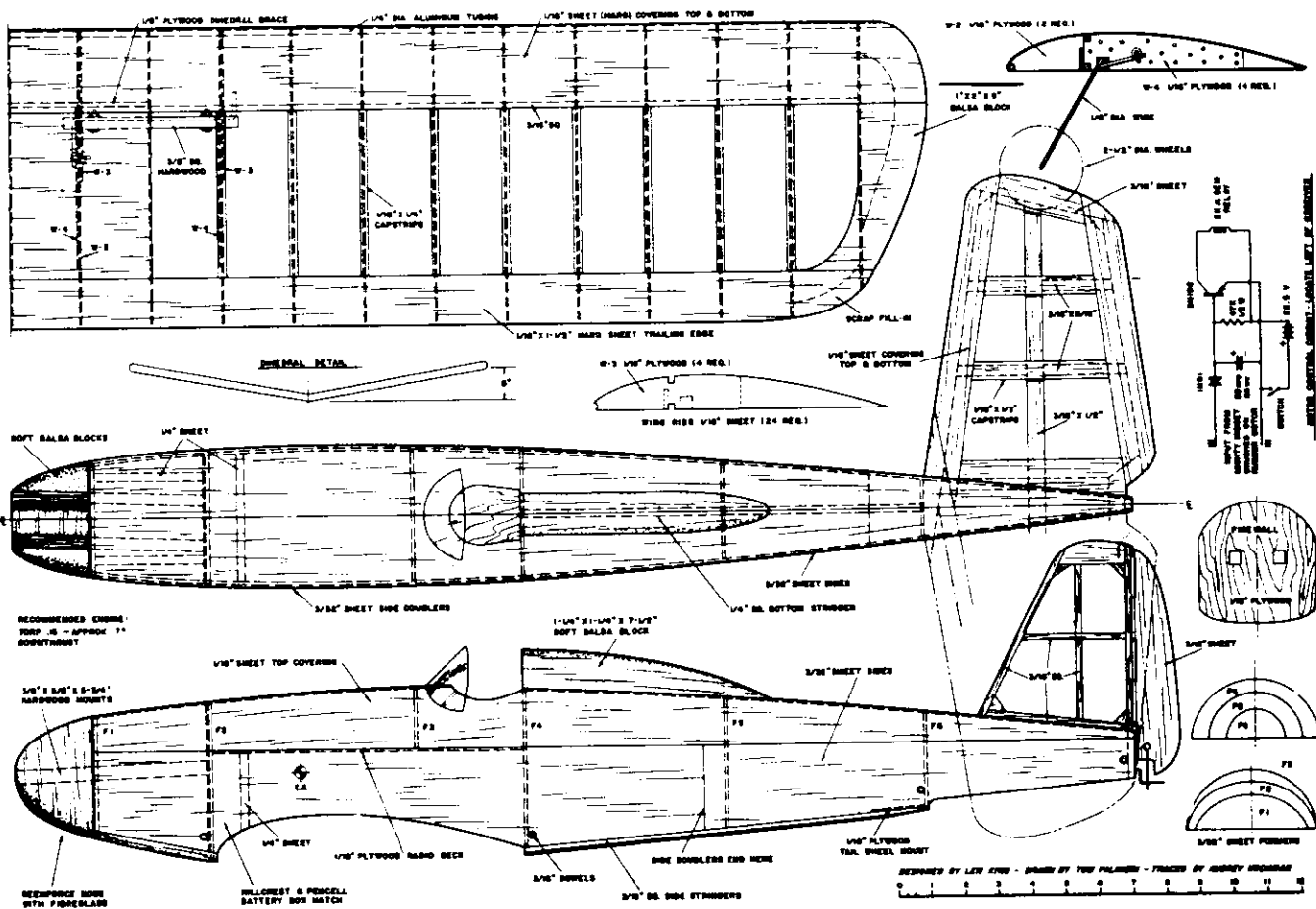
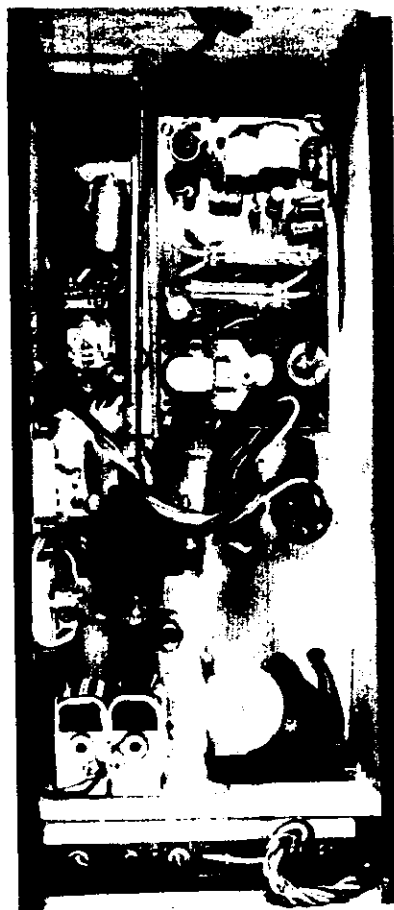
Original wing was designed and built by my good friend and fellow mad modeler, Tom Palmieri, who, incidentally, designed and built the three-speed Mighty Midget fail-safe engine servo which was added after the initial flight testing of "So-Lo."

Wing features a length of high-tensile strength 1/4" hollow seamless aluminum tubing in the leading edge. The slight added weight is more than compensated for by the terrific strength of the completed structure.

Construction begins by laying the 1/16" medium hard leading and trailing edge sheeting flat on the top view plan of the wing. Make sure the leading edge sheet extends a half inch beyond the leading edge, because this is later bent up and around the aluminum tubing used in the leading edge.

Center spar is glued to leading edge sheeting, and 1/16" ribs glued to flat leading and trailing edge, using spar as guide. Now cement aluminum tubing in place, making sure that the cement does not flow under the front of the tubing, because this would make bending of the bottom sheeting around the tubing impossible. When this is completely dry, install the top center spar and trailing edge top sheeting. While this is drying and the wing is still pinned

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So-Lo

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solidly to the work board, wet the *underside* of the leading edge sheeting and slowly wet and bend around the aluminum tubing. Use a good grade of cement for this, because the balsa must adhere to the metal tubing. When this is thoroughly dry, cut the excess balsa off the top of the tubing so that the top leading edge sheeting can be bent down the same way and lapped over and cemented to the tubing and cut edge of the bottom leading edge sheeting.

Tip blocks are cut according to top view and then shaped to rib contour. When these are cemented to the extension of the top and bottom sheeting, the tips are rounded off. This type of tip construction gives a useful lifting airfoil right to the very end of the wing. If you desire a simpler method, the tips may be plain $3/32$ " sheet slanted up from the bottom of the last rib and sheeted on top with a $1/16$ " balsa sheet.

Landing gear spar is $3/8$ " hardwood with a $1/8$ " groove in the bottom leading edge to fit the $1/8$ " wire landing gear. The $1/8$ " wire is bent and cut to fit first. It is then secured to the hardwood spar by two pieces of light gauge stainless steel or aluminum straps which are bolted to the hardwood spar. These straps allow the landing gear to twist with a torsion bar effect, while still holding the wire in the $1/8$ " groove in the hardwood. Landing gear spar is then cemented in place, and the end of the $1/8$ " wire is secured to the plywood rib with a "J" bolt.

Capstripping with $1/16$ " x $1/4$ " balsa strips completes each panel. Panels are then joined with the $1/8$ " plywood dihedral brace, and the center section sheeted with $1/16$ " balsa.

Stab construction is self-explanatory. What it amounts to is a flat 3-ply structure. Construction of this type is extremely rugged. Although the flat stab is not an efficient airfoil, "So-Lo" doesn't seem to mind.

The end result is terrific. "Happy flying!"