Bob Hildebrand's "Kitten"

The Kitten By Bob Hildebrand

HERE'S A 100 SQ. IN JOB WITH WAKEFIELD PERFORMANCE



AYE there, laddie, ,arre ye Scotch we' th' rubberrr? If you are the kind who doesn't appreciate the idea of using 1-1/2 to 4 ounces of rubber in a model only to see it drift away, we bid you look over— the Kitten. Although the Kitten has flown away and will continue to do so, added side area makes the model visible longer; and if the Kitten is lost, it has carried only 3/4 ounce of the precious elastic away. Wing area is just over the 100 square inch minimum; so the ship doesn't require much rubber to claw itself sky high.

Placing in every contest entered, even against Wakefield and 300 square inch jobs, is proof the Kitten is no slouch on performance. Hundred square inch models have several advantages over larger models. Great strength-weight ratios and fast high climbs are outstanding characteristics. Flight tests have proved the Kitten's 2-1/2 minute aver-age many times. But enough of this gab. Let's start construction.

Fuselage: Scale up the fuselage top view. With each of two hard strips of 1/8" square balsa, sand the opposite sides to 3/32" x 1/8", except for 3" at one end which is tapered up to the original size. Pin these two strips to the top view and glue the 1/16" x 1/8" hard crosspieces in. Cut the other cross members to size and cement in place. Keeping the portion between stations 4 and 10 pinned flat, elevate the front and fear portions

of this crutch 1/2" from the board. Make the two jig pieces A and B from 1/8" x 1/2" balsa. When these two jigs are cemented perpendicularly to the nose and rear dowl stations they look like inverted T's from the front view, making a pinning surface for the top longeron. Cut 1/8" square uprights from a scaled up view of station 5 and glue in place. Repeat for station 9, using 1/16" x 1/8" wood instead. Soak a piece of 3/32" square in hot water and pin to the jigs and uprights. When dry, cement to the uprights and add most of the remaining braces. With a harder piece of 3/32" square repeat the procedure. Finish off with the remaining uprights and then add the stringers. Small triangles of 3/32" sheet facilitate covering at the nose.



From hard 3/32" sheet cut the wing mount former and cement firmly in place. The platform of two layers of 1/8" sheet is added and sanded to make finished, streamlined ears. Cut 3/32" sheet to fit top of fuselage and bottom of wing, and glue in place. Wing rubber hooks of .028 wire are now added.

The landing gear should be bent from .055 or 1/16" wire. Bind and cement the 3/32" 0. D. brass tubing bearing to the fourth cross piece and add the gusset. Bearings for the 1-1/2" wheel are two washers, while the wheel is retained by a drop of solder.

Tail: The leading and ready tapered and notched trailing edges are laid out and 1/4" deep ribs of medium hard balsa are cemented in place. When these joints are dry add the spar and gussets. Now taper and sand down the ribs to an airfoil section.

Rudders are cut from soft, quarter-grained 1/16" sheet and sanded to a very streamlined crossection.

Wing: Cut 15 wing ribs of 1/20" sheet and the tip pieces from 1/8" sheet. Cement the entire wing outline together and add all ribs. Glue spars to all but the three polyhedral ribs. When dry care-fully crack leading and trailing edges and block up to proper angle, thoroughly cementing joints and spars. Sand

smooth a sheet of 1/32" balsa. After all other joints are dry, cap the leading edge of the wing.

Prop: Efficiency is greatly enhanced by a smooth blade; so after carving, sand the prop with varying textures of sandpaper, decreasing to almost 10/0. With a mixture of dope and talcum powder, dope and sand the blade a couple of times . . . (go over all exposed wood parts with this mixture). Clear lacquer is used on the finishing coats. Attach folding mechanism of lugs and 3/32" tubing with glue and strips of silk or thread. Solder the tubing to the outer two lugs, which are attached to the blade; the inner lugs form the bearing. Cut out the nose plug and cement a bearing firmly in it. Bend the shaft from .055 or 1/16" wire, not omitting the rubber tubing over the motor hook nor the spring and washers. Glue a length of wire, same size as shaft, to the stub and add solder to counterbalance.

Covering and Assembly: Taper and sand the fuselage stringer, and also the top longeron. Now go over the entire body with fine sandpaper. When satisfied, paper the bottom with wet "00" Silkspan and after it is dry dope both inside and out to preserve structure. Now cover the two top sections back to the rear dowl with wet paper to facilitate the curves. When the paper has dried, dope it three times and finish with a coat of lacquer.

Now sand and cover the stabilizer with tissue, and apply several coats of dope. Cement the stabilizer to the fuselage and add the rudders, keeping them straight and true. When the cement has hardened, carefully fillet the tail to the fuselage. Repeat the covering procedure for wing. The wing centersection of our models were covered with Silkspan.

Flying: Make up a motor of 14 strands of 1/8" rubber, 24 inches long. Lube well with a thick lubricant, and tie one end two ways to form an eye through which the dowl may be slipped. We wouldn't try 1,000 turns if we were you!

Because of the design, "down thrust" is necessary, and a small amount of right thrust is also required. Alter the wing incidence to produce a "gentle as a Kitten" glide, and then the thrust line for a rocket climb in right spirals. We found a little more incidence in the right wing and some left rudder helped.

Don't be afraid of spiral dives, as the Kitten has pulled out even when put into an awkward position by a sudden gust of wind. And a postage stamp field will not suffice for this performer! We know from experience. Good luck!

VICTORY





