Take one Top Flite 'Flite Streak' U-Control Kit, modify slightly, and you've gone . . .

from ukie to wireless

The Wireless was "born" at a bull-session during which the conversation covered the gamut of model building, design and flying. For some strange reason the discussion wandered off into U-control stunt (an unlikely subject for R.C. modelers) and the progression of U-control stunt design. I recalled that I had seen, on one occasion, a profile stunt model make a very credible free flight, circling its handle to an altitude of about 200 feet. Although the flight was extraordinary, the landing was spectacular since the control wires landed across a 12,000 volt power line and blacked out a large section of the city!

This was the catalyst for what was to follow. My co-conspirator (co-nut would be more appropo) and I decided that application of RC to a ukie model would decidedly improve its control during free flight and be a tremendous safety feature for landings. The fact that such a combination might NOT work never entered our minds.

I had an old Top Flite "Flite Streak" kit at home with the wing partially completed and this served as the basis for the design. First off, it was readily apparent that the profile fuselage was just too slim to house even the smallest propo equipment and the tail surfaces a bit too small to go with the wing. So these parts we've chucked and a new design developed around the wing. Something of an effort was made to retain the appearance of the "Flite Streak" with allowances for a certain amount of flight reliability. The resulting package was similar to a ukie stunt job with fairly pleasing lines.

The first flight of the original was almost anti-climactic. It rose into the air smoothly and exhibited fairly good stability, though quite sensitive in the roll mode. The really surprising part was the landing, which was not a "drop-out-of-the-sky" type as expected, but rather smooth with an almost floating glide. That thick symmetrical section developed a tremendous amount of lift at a slight angle of attack.

The number one prototype logged 25 flights before succumbing to interference (verified!!). The number two aircraft is the one presented here, and is a cleaned up version of number one. You'll note the plane shown does not have a rudder, although one IS shown on the plans. It can be built either way, and the extra servo has room in the fuselage since the plane shown uses one servo just for the steerable nose gear. The Wireless requires a good running .15 or even a .19. This plane has to be "on the step" or she can be a real handful to fly! Both the original and number two weighed less than three pounds and every effort should be made to hold it to this weight, or less.

The Wireless, although not a true R/C ukie, has proven, to me at least, that some of the present day U-control creations are quite adaptable to radio control. I recently saw a ship with a "Nobler" wing turn in a fantastic performance. While not for the novice, planes like the Wireless can be real "fun" types for the more experienced fliers. Who knows, maybe we can do for U-control what Marconi did for the telegraph — make it "Wireless."

CONSTRUCTION

Fuselage:

Cut two 3/32" sheet sides and 1/8" doublers from medium hard sheet. Do not make the cut outs for the wing on these pieces, but mark their outline accurately on the sides. Cut the triplers, including wing cutouts, from 1/32" plywood. Glue the doublers and tripler to the sides and weight or clamp to insure a good bond.

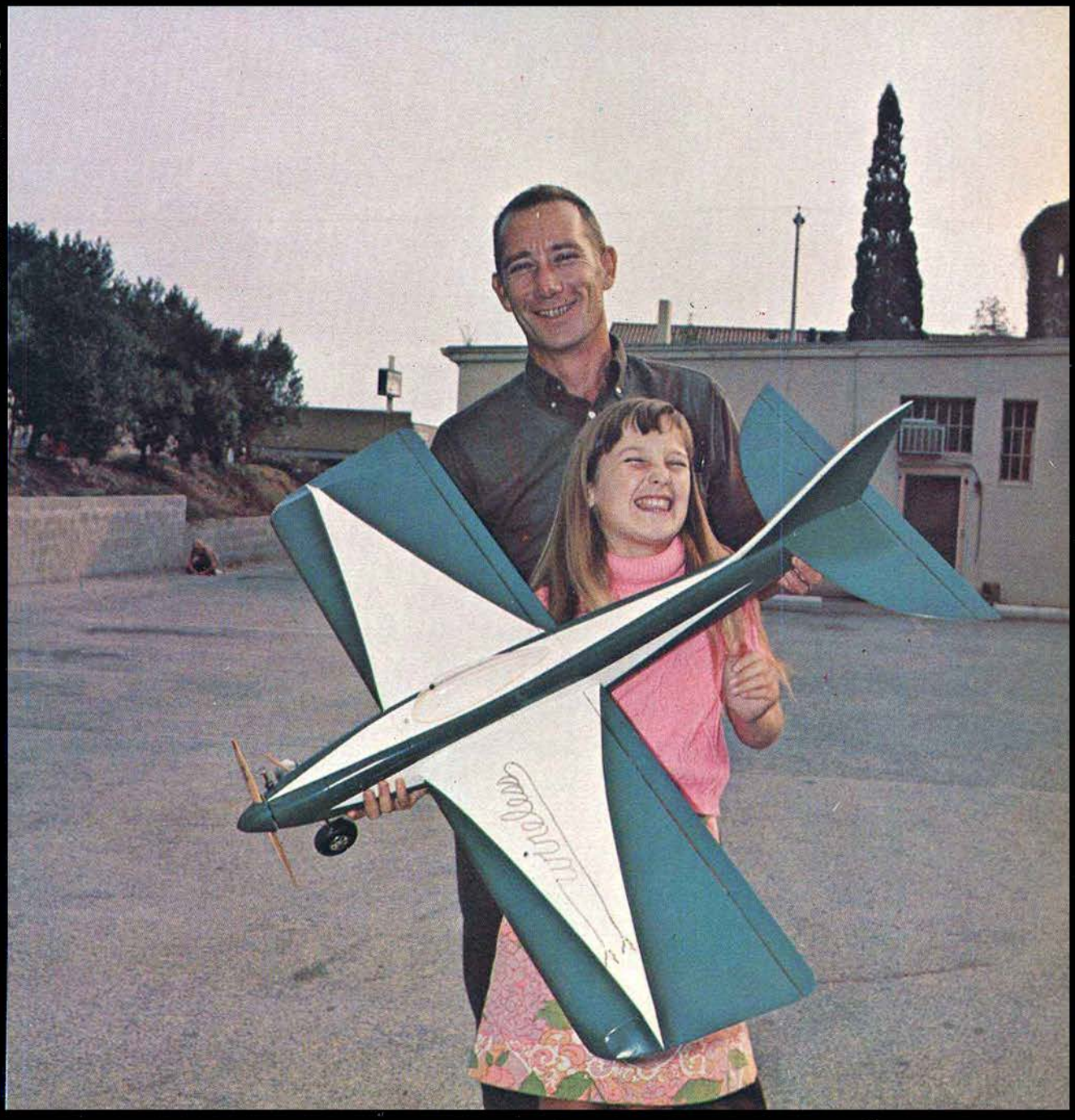
While the sides are drying, cut out the rear turtle deck sheeting, firewall, formers and other fuselage parts. When the sides are dry glue on the 1/2" and 3/8" triangular stock, the vertical uprights and tail reinforcement. Pin the rear turtle deck sheeting on the plan top view and glue F-3 and F-5 to it, being sure they are perpendicular.

Taper the triangular stock to match the top view and glue the 1/8" square tail post to one side. Pin and glue the sides, inverted to the turtle deck sheet, and formers F-3 and F-5. Add the cross pieces at F-4 and allow the complete assembly to dry thoroughly before proceeding.

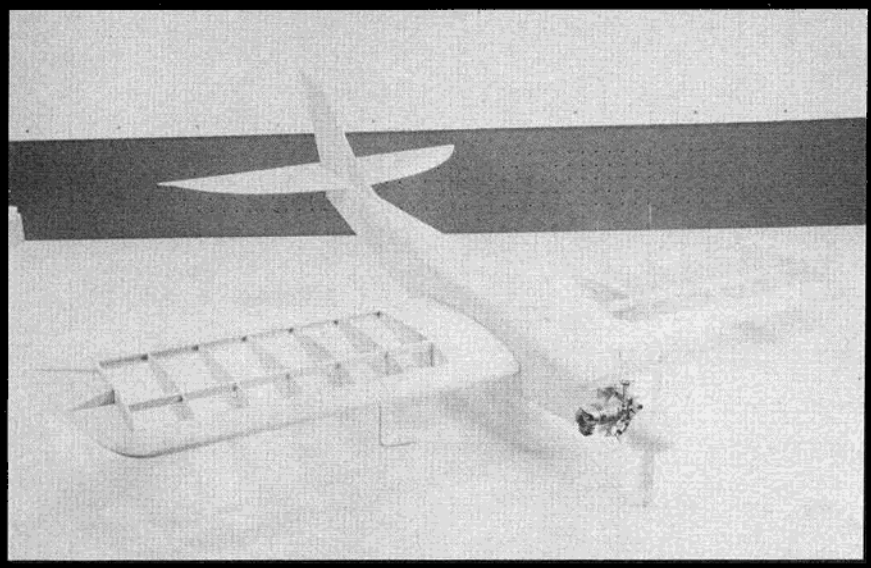
After the above assembly is dry, block up F-2 to its proper position on the plans and pull the sides into it using EPOXY to secure it to the sides. Before F-2 sets epoxy the firewall to the sides being sure it is properly positioned and perpendicular to the work table. Epoxy the trailing edge stock behind the firewall. Glue or epoxy the 1/4" sheet rails to the center of the fuselage and allow the fuselage assembly ample time to cure. I cannot over-emphasize the use of epoxy at all stress points since the gluing areas, in most cases, are small and maximum joint efficiency is essential

Remove the fuselage from the plans and sand the bottom square. Epoxy the 3/16" sheet fillers at the tail and glue on the bottom sheeting from F-3 back.

by paul strengell & bill o'brien



EKTACHROME BY DON DEWEY



. . . you can slow the wireless up and stretch the glide with no tendency to fall off.

oxy the 1/32" plywood bottom from F-3 forward and allow to cure. Cut the top hatch blocks to outline and spot glue to the fuselage. Glue the 1/8" sheet to the bottom from F-3 forward. Now add the 5/16" tail block. The fuselage is ready for carving and sanding to shape. Be careful not to sand out the markings for the wing cut-outs.

After shaping is complete, remove the hatch blocks. Drill and tap the Midwest motor mounts for the engine and drill the 5/32" holes for the nose gear. Bolt the engine mounts to the firewall. Build up the nose around the engine mounts with 1/2" sheet, spot gluing it to the firewall. Temporarily reinstall the front hatch and shape the nose to conform to it. Please note: The nose may have to be modified to suit your particular engine so make your plans accordingly, it's a pretty tight fit! Remove the nose and drill the holes for fuel tubing to match the tank you use. The original used a Sullivan RST-4, 4 ounce tank. Install the engine temporarily and hollow the nose gear. This completes the fuselage up to final assembly.

Wing:

The basic wing can be obtained from any Top Flite "Flite Streak," "Combat Streak," or "Combat Cat" kit. The "Combat Cat" kit is especially attractive if more than one airplane is planned because it contains two complete wings.

Cut two new ribs from 1/8" sheet for the tips and notch the leading and trailing edge for the two new center ribs. Drill or slot the ribs for aileron linkage and make 'cut outs' for landing gear blocks. Cut landing gear reinforcements from 1/16" plywood.

The plans show tubing and cable aileron linkage, however, I leave it up to you as to what best suits your fancy or equipment. Wing construction is straight forward so I won't insult your intelligence by telling how to do it, suffice the admonition to watch out for warps. The tips supplied with the kit are a little flimsy and should be replaced with new ones of 3/16" sheet. Make, but do not install, the ailerons at this time. Also note the wing, as built, has too much chord and has to be trimmed to match the chord shown on the plans.

Tail and Fin:

Try to find some medium hard

straight grained sheet for these surfaces. Cut to shape and sand to the desired section, but do not sand any more than necessary in order to preserve their rigidity. Attach the elevator and rudder (if you use one) using your favorite hinge.

Assembly:

Cut out the fuselage to accept the wing, making the openings slightly larger than the wing. This will give good penetration of epoxy into the joint and allow the wing to be positioned properly. Slide the wing through the fuselage and hold in alignment with small wedges of balsa. Horizontal alignment can be checked by laying a straight edge across the top of the fuselage and adjusting the wing to parallel it. Check the angle of incidence carefully. When all is in order work epoxy into the space between the fuselage and wing and epoxy the leading edge to F-2 and the trailing edge to F-3.

Epoxy the tail, fin, and tailskid in place, including the 1/4" triangular stock reinforcement. Check alignment carefully.

Glue the nose in place and sand the entire plane to blend in the surfaces and prepare for finish. Cover and finish to suit. Pick your color scheme for good visibility. This plane moves fairly fast and, being small, can get out of sight in a hurry.

The equipment installation is a custom job and will require some planning. The available room is limited, however, any of the small Kraft, Orbit or Bonner systems will fit.

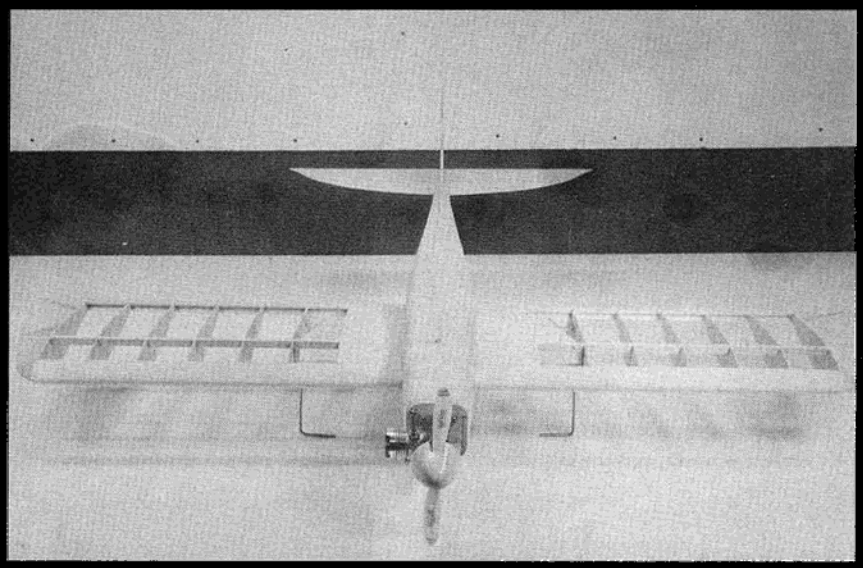
Flying:

The center of gravity should fall just behind the spar.

Check the aircraft carefully for warps or misalignment. With everything lined up the Wireless prototypes came off the ground in about 50 feet with a slight touch of up. The C.G. can vary about 1/2 inch, but go slowly when moving it BEHIND the location shown.

Rolls are quick and the plane is small, so go easy until you get the feel of it. The landings are surprising – you can slow the Wireless up and stretch the glide with no tendency to fall off on a wing tip.

What started as a casual experiment has resulted in two fun aircraft. Good luck.



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