

HOT CANARY

By BOB SWEITZER . . . When you take this far out Peanut to the next flying session, you're sure to get a few double-takes when it's first spotted. Length of the rubber motor alone should make for long flight duration. Also, you'll learn something about sheet balsa forming.

• Modelers are continually seeking out the unusual and different scale subjects to build. A quick glance at the cover of *World's Great Aircraft* by Air Progress, revealed a color picture of a little, light yellow racing biplane with negative stagger wings and square fuselage sides. The "Hot Canary" was just what I was looking for. Inside the magazine there were more color photos and a short article on the subject. More research into *Racing Planes 1971* annual by Reed Kinert uncovered more photos and the necessary three-views. It was time to sharpen the pencils and design a model.

The "Hot Canary W-4" was designed, built, and flown by Bill Warwick. It was completed in 1970, and competed in its first race at Fort Lauderdale air races the same year. Bill and Canary showed their baptism of fire (it was his first air race, too) by winning the Sport Biplane consolation race. In June 1971 at Cape May, New Jersey, the torrid twosome won both the preliminary heat race and the main event. The Canary has 14'-9" of staggered laminar flow wings that sizzle throughout the air at just under 170mph.

During the preliminary layout plans, it became apparent that the Hot Canary

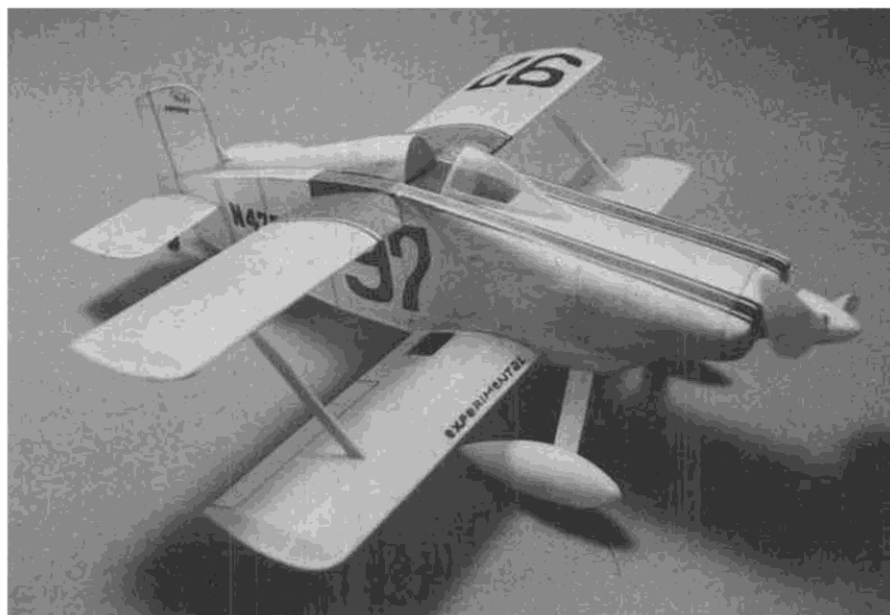
would be more than just a cute model. It would be large for a peanut scale (15 inch long fuselage and 66.7 square inches of wing area), sort of a Walnut scale in a Peanut shell. You may have to carry a tape measure to set any non-believers straight.

The model's size and long nose moment requires very careful selection of light, strong balsa. Micro-X Products, Inc. has an excellent offering in 1/64 and 1/20 square balsa. They also carry a good choice of tissue. The cost of their catalog is a worth while investment.

The Canary is not advised for beginners because of the construction methods. I will not cover the construction stick-by-stick, but elaborate in detail on the difficult aspects. The liberal use of molded balsa components, laminated wing tips, and laminated tail surface outlines may not appeal to many modelers. Don't let the formed balsa parts discourage you, because it is much easier than it looks (this was the first time I tried it).

Complete the basic fuselage box frame with all nose formers in place.

Begin the molded balsa components with the nose side cheek, as these are simple and easy and will build up your courage to attack the headrest. Select a piece of 3/8 inch sheet balsa and cut to the outline, using the fuselage nose side view (from F3 to F5) as a pattern. Formers F3 and F5 provide the shape to carve the form block. I copied just the curved section of F3 and F5 on each end of the block and carved to shape. I only formed the curved portion of the nose cheeks because the straight sections will take care of themselves . . . just allow enough



Here's one model you can build without worrying about it coming out tail heavy! Biggest problem is convincing anyone it's a peanut. Too big to publish full-size plans.



extra balsa sheet. Don't forget to make a right hand and left hand form. Cut a piece of 1/64 sheet balsa, with a good straight grain, approximately a 1/4 inch larger than the curved block. Soak the sheet for about 45 minutes in hot water, and wrap around the mold. Pin only at the edges and let dry over night. When dry, fit and trim the formed sheet balsa to the nose former and glue in place. You can avoid all the difficulty of the nose cheeks by going to carved balsa blocks (hollowed out) and omitting nose formed balsa, but you may have a nose-heavy problem.

Having completed the nose cheeks (courage in hand) it is time to attack the headrest with the compound shape. Carve a balsa block to the shape desired (about 1/64 undersize for the allowance of the sheet balsa). Use F10 for contour shape at the end and blend the other end into the fin. The block should be finished with two coats of sanding sealer and one coat of car wax (I use *Record Time* by Blue Coral) then buff. Pick a nice piece of straight-grain 1/64 sheet balsa and cut a piece about 3/8 inch larger than is required (you may need plenty of extra for clamping). I use a piece of paper to determine the pat-

tern's size and shape. Soak the blank for 45 minutes in hot water and test bend it slowly around the balsa form. Look for cracking or splitting. If it doesn't want to form, use some household ammonia on it. That stuff will make the most stubborn balsa curl around any block.

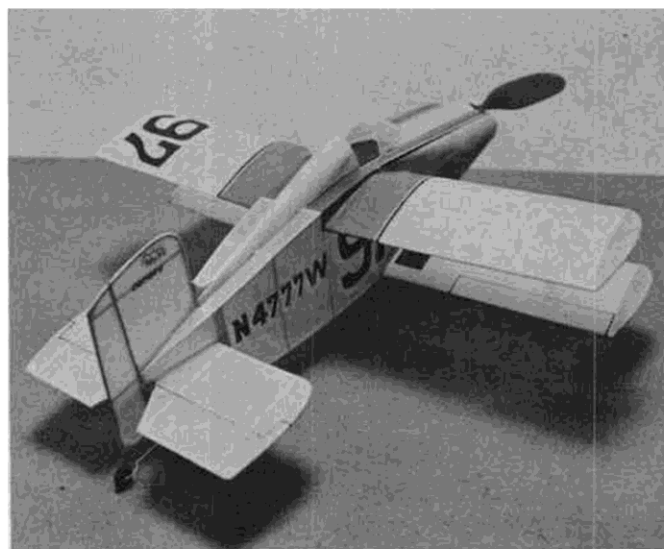
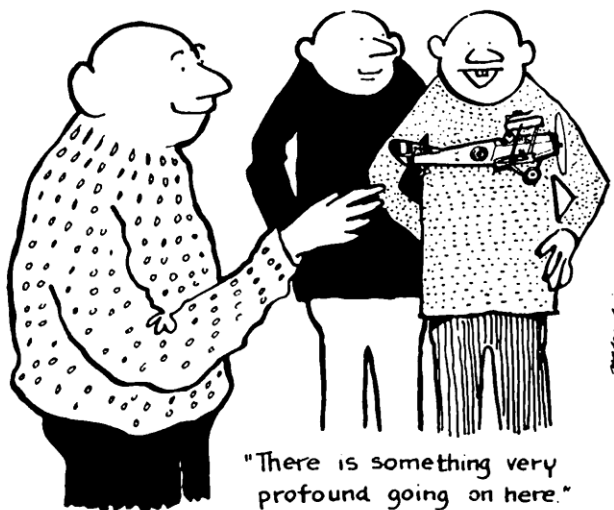
Once on the form (you will still have the compound section near F10 to contend with), clamp the sheet at the bottom of the block and let dry over-

night. Now attend to the curvature change portion of the headrest. While still on the mold, cut narrow V-notches (one on top along the center line and one on each side about half way down) back from F10 approximately a 1/2 inch to the point where the compound bend starts. Pull and trim the sheet balsa until it fits the form at F10. Glue balsa slits together on the mold block with Willhold aliphatic resin and sand lightly when dry. When dry, remove from block, add former F10, and trim to fit fuselage. A coat of clear dope inside the headrest will help hold its shape. Now you have one nice light headrest.

The laminated wing tips and laminated tail surface outlines are not that difficult. Walt Mooney has written much on laminated tips, so I would be just wasting your reading time by repeating it all again. The Peanut Professor uses hard wood for his outlines, where I use 1/20x1/64 balsa, but the principle is the same. The remainder of the construction is straightforward and should present very few problems.

Cover the model with light yellow tissue (Canary yellow), with blue and black tissue as trim. When I covered the molded balsa components with tissue, I was surprised to see that the sides had not become indented. The form balsa

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parts acted like they were pre-stressed.

I covered the Hot Canary in the conventional manner until I got to the side numbers (97 and N4777W) and 97 on the left wing. The 97 has a white background and the license number has a white shadow. White tissue doesn't show up well against any color, so I cut out the yellow tissue and glued white on from behind. The white tissue was cut out slightly larger than the opening in the yellow. It takes more time, but I think it looks sharp. The word "Experimental" on the lower right wing was added with a No. 3 Rapido-graph pen after the wing was covered, but not attached to the fuselage. For "Canary" on the fin, I use a No. 1 Rapido-graph pen. "Hot" and the flame was applied with a fine brush and Stearman Red dope (plus a steady hand).

Center the stab in the slot and glue only the stab leading edge to the fuselage. Place shims under or above the rear of the stab for trim.

Build as light as possible, because the long nose moment and large size could produce a very heavy turkey. My model tipped the scales at 7/8 of an ounce (heavy peanut) and required a small amount of tail weight. I changed props from a plastic to a lighter, carved balsa one, and it still needed a little clay on the tail wheel.

The model flies on one loop of 1/8 rubber 15 to 17 inches long. See the plans for the balance point.

The Hot Canary is a real show stopper and is a large fast flier. It likes big circles to the right. Be different. Build the big, yellow bird and maybe you can race a Pitts Special or a Pogo. ●