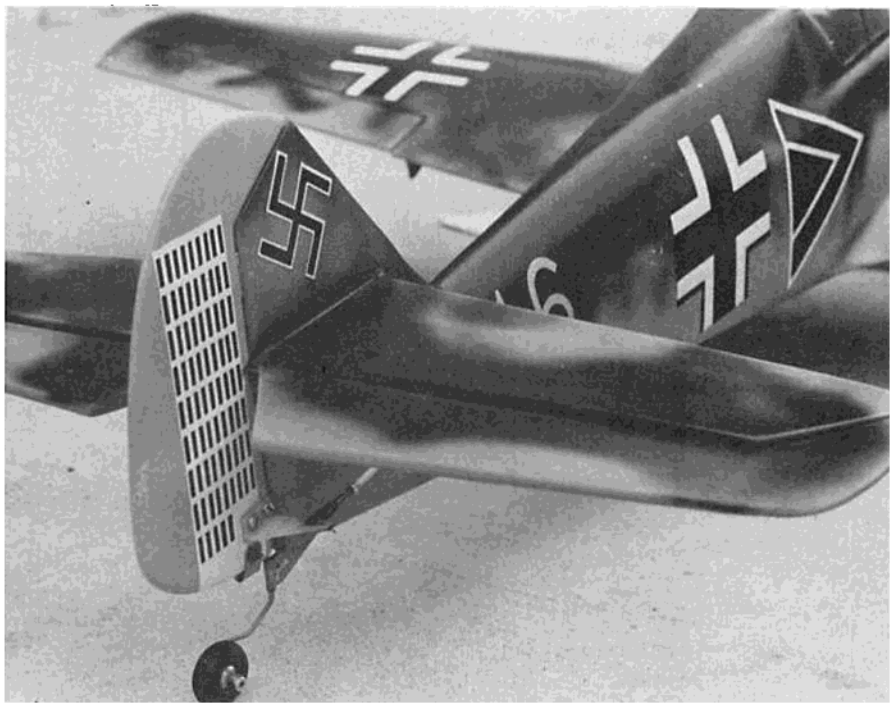
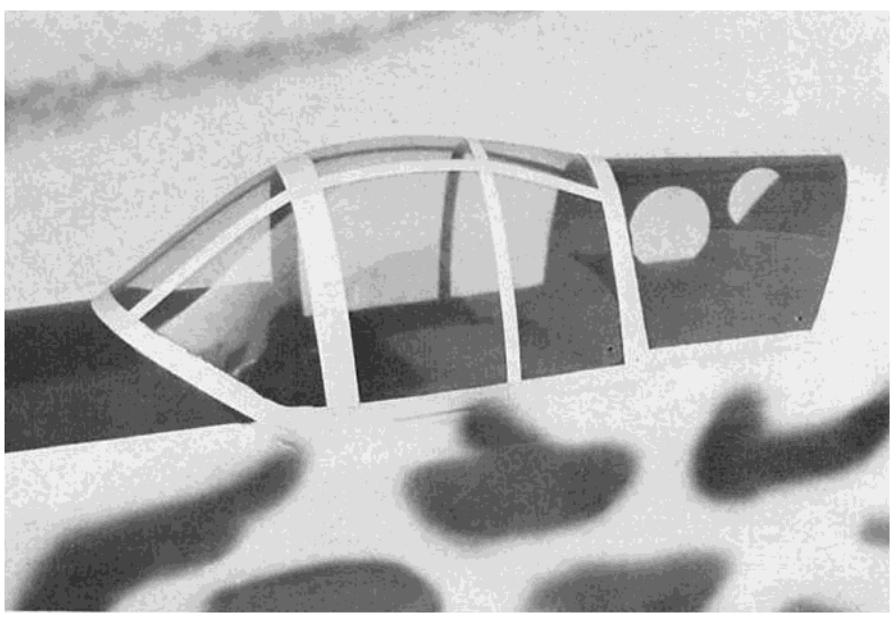
TWO WW II FIGHTERS FOR SUNDAY FLYING

BY DANNY REISS

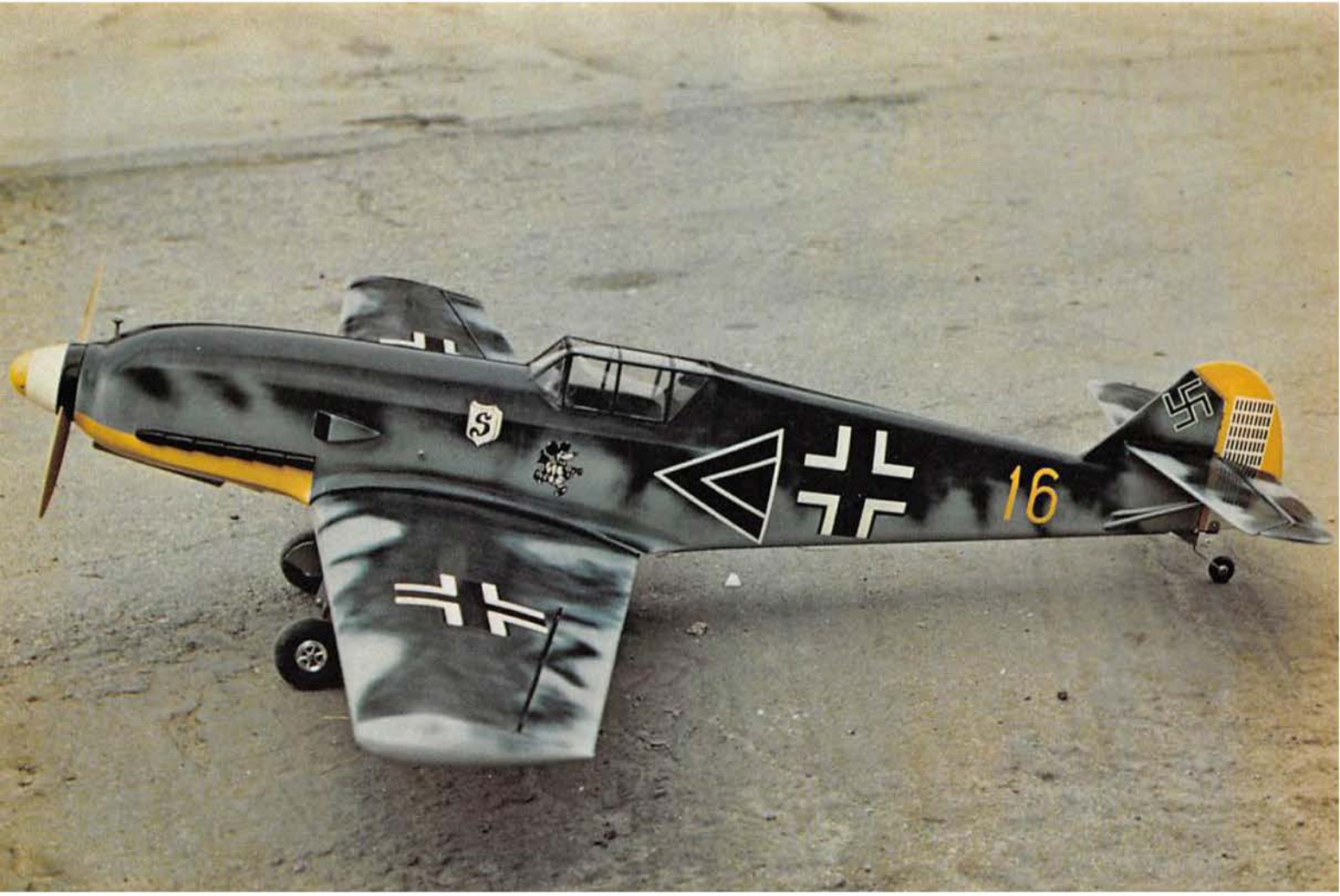




THE KAWASAKI HIEN 'TONY' AND ME109 ARE EXCELLENT SEMI-SCALE MODELS FOR EVERY DAY FLYING. FOAM AND BALSA CONSTRUCTION. FOR .40 TO .60 MILLS.

Here is your opportunity to build two semi-scale WW II fighters possibly at the same time, if you wish. There are two advantages to building these models simultaneously – that is time and money. It takes me about one-third more time to build two models simultaneously, instead of the obvious double time had I built them sequentially. I save a considerable amount of money when I purchase my balsa and dopes due to the quantities involved and the reduction of scraps. You might call it "mass production."

I am sure that the ME109 and Kawasaki Hien need no introduction. As I said before, these models are built to a "semi-scale" of 1½" = 1'. Of course, I have "cheated" in several places. Dave Platt, at one time, referred to these kind of models as "abortions." I certainly admire his craftsmanship, but I must say that these semi-scales do have a place of their own in this fine hobby of ours. They certainly look better than the run-of-the-mill stuff; aren't too hard to fly if you have a little experience under your belt; and are relatively easy to build. With proper construction techniques, they can endure all kinds of "Sunday flying" so you don't have to save them for that once-a-year contest.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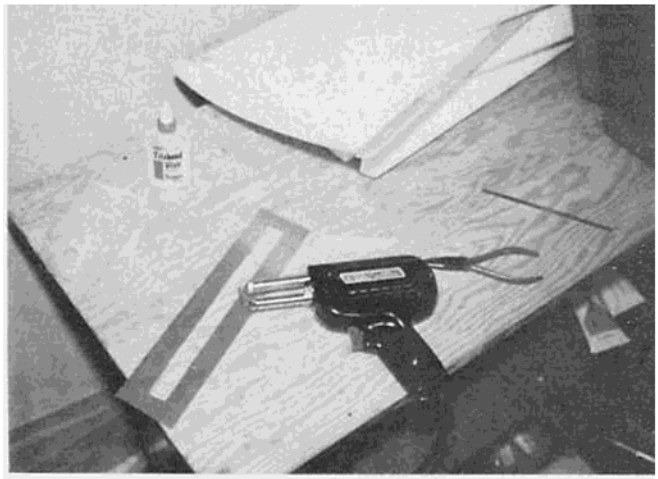
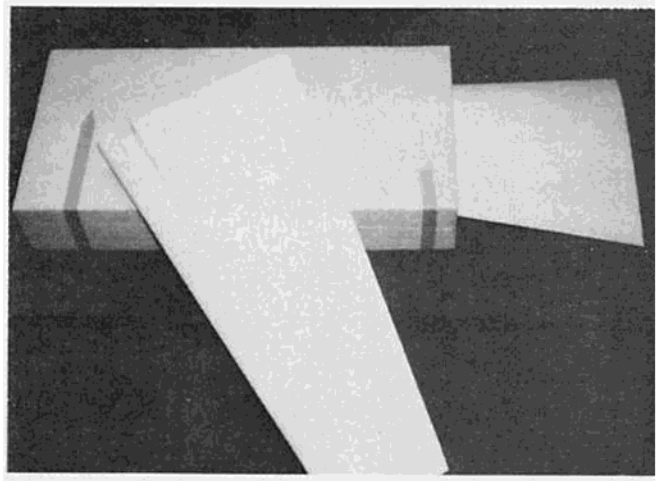
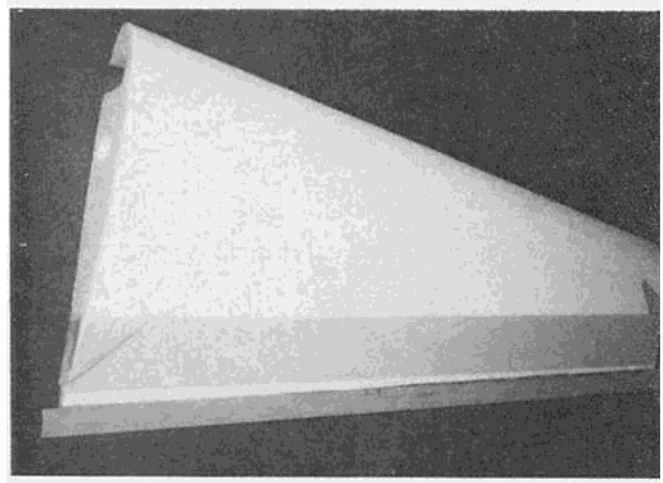
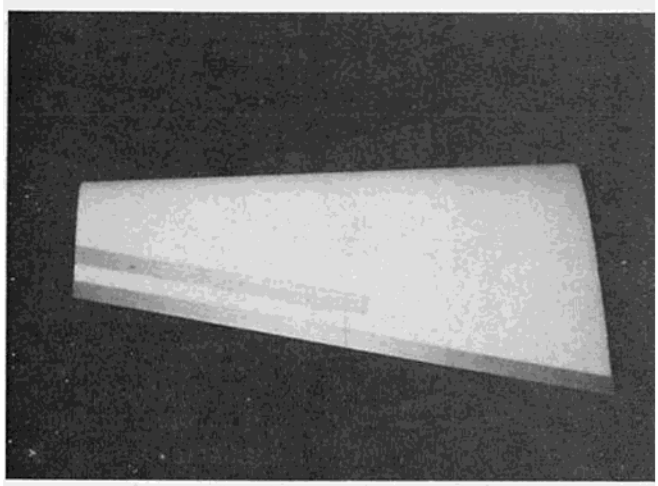
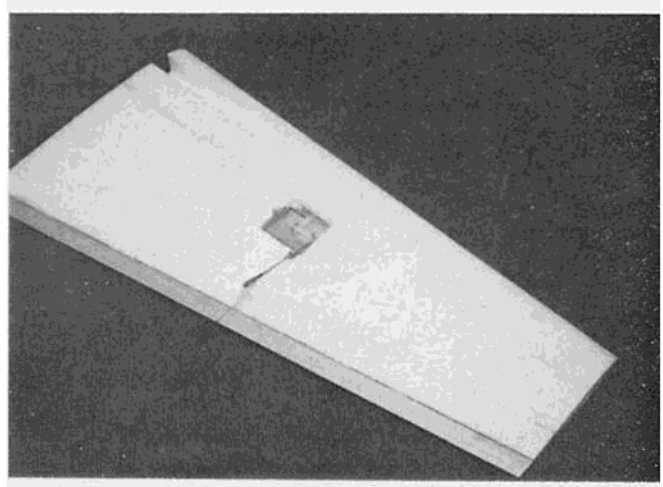


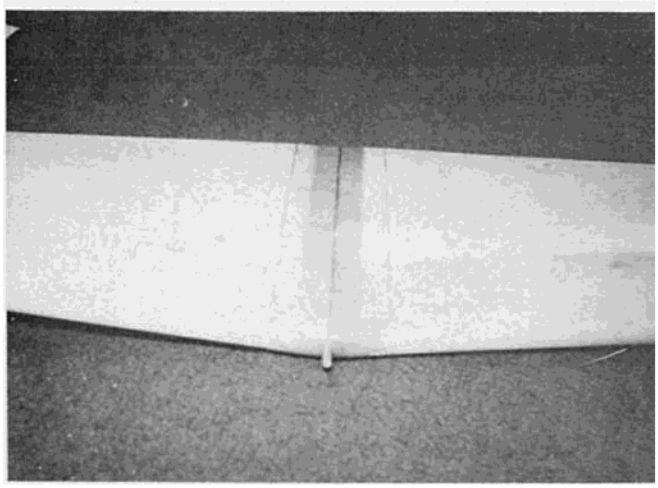
Illustrated on this page are the author's photos of the foam wing construction sequence. As outlined in the RCM Anthology Library 'Foam Wings' book, a Weller soldering iron with channel attachment is used with a channel glide for cutting out landing gear slots, bell crank platform cutout. At bottom right are the basic fuselage sides.

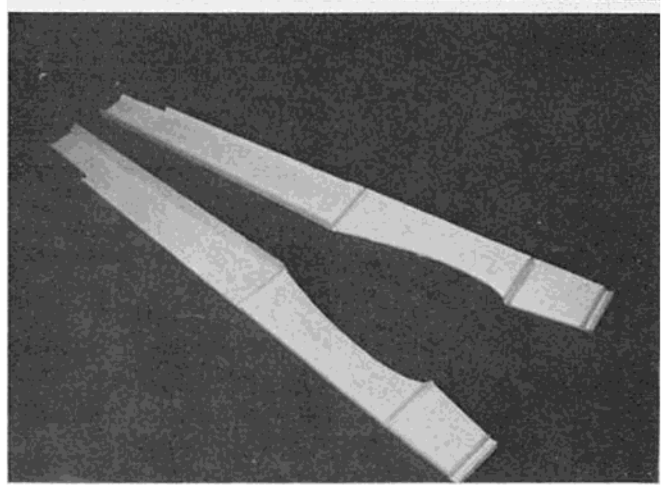


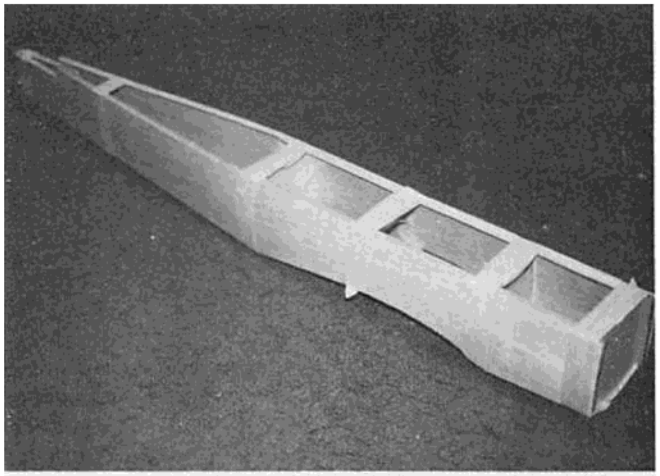


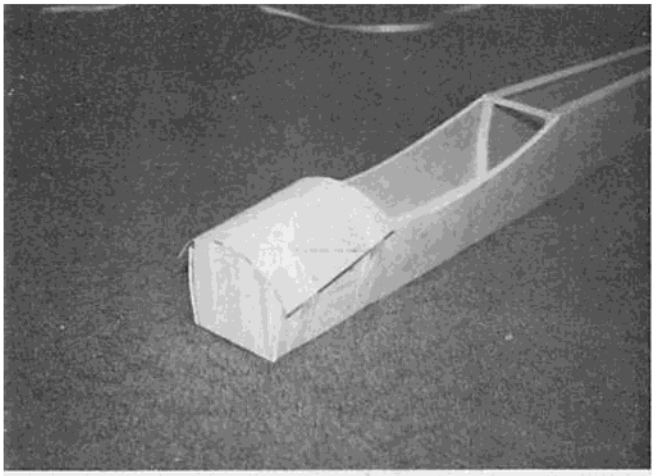


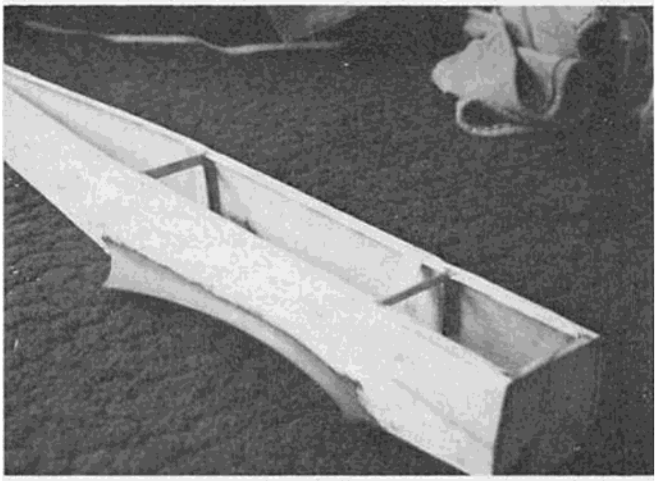


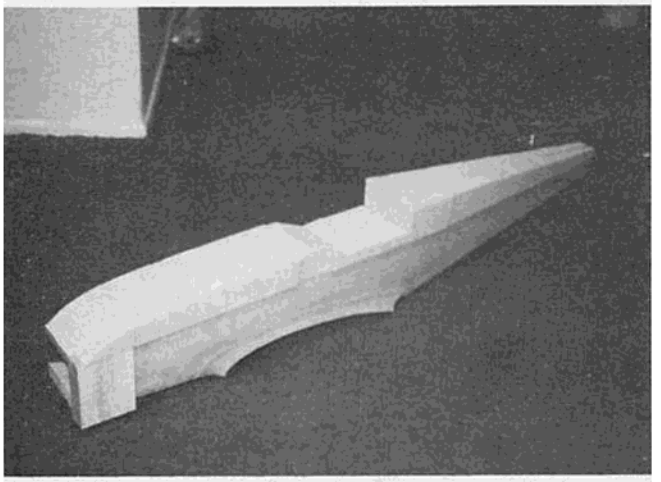


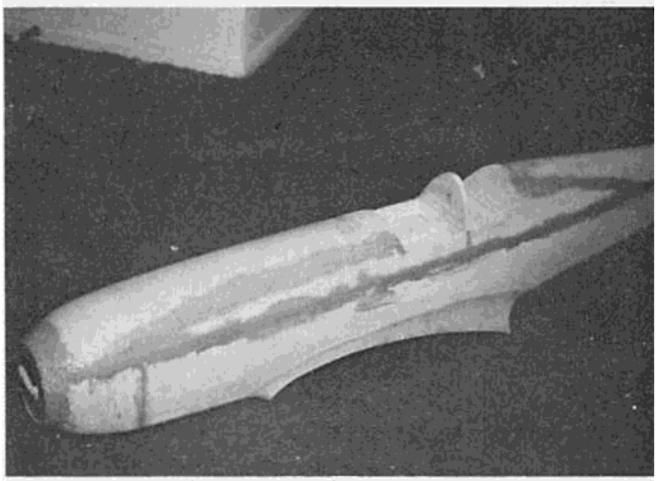


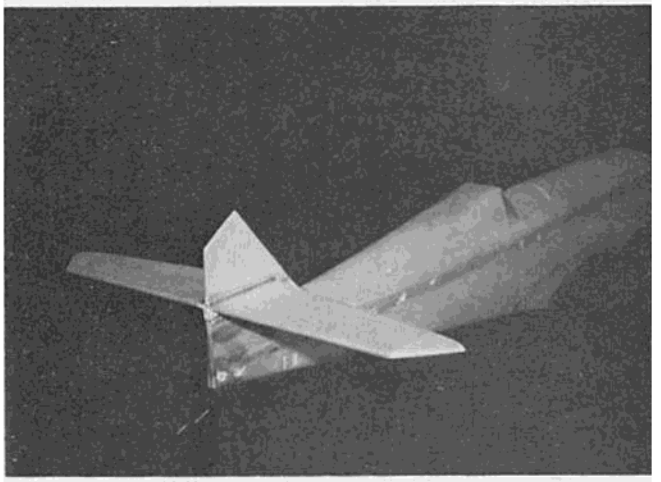




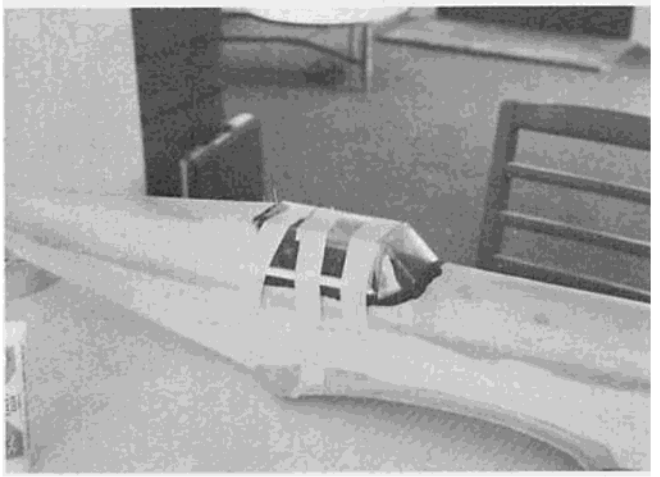


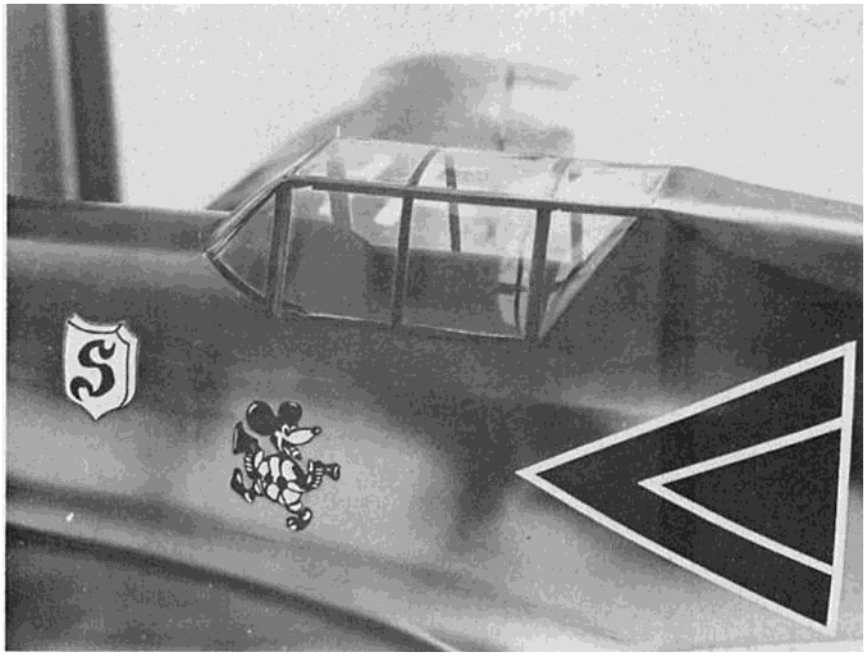


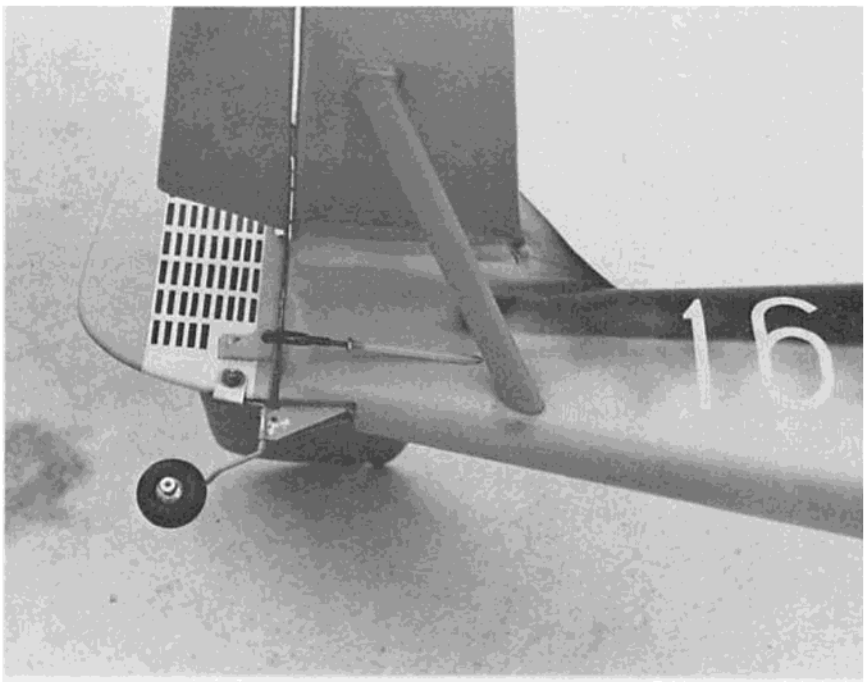


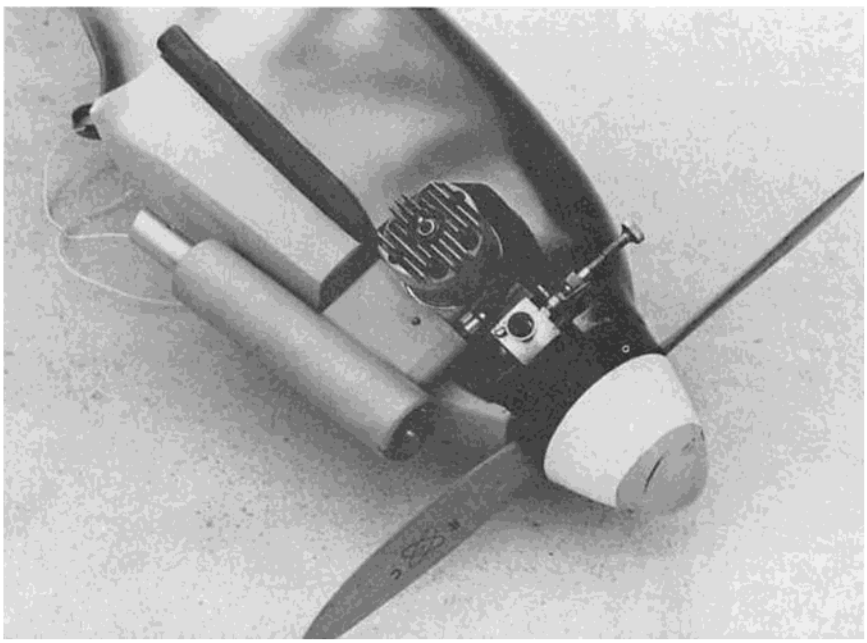


The construction sequence for the fuselages are illustrated above. The use of foam blocks for the upper portion of the fuselage provide an easy and quick method for obtaining compound curves. Filler is used to repair any nicks or cracks. Note empennage and canopy attachment.









WINGS:

The two prototypes utilize foam wings. They have a 2415 root rib and a 2418 tip rib with 1 degree of washout. There has been several fine articles written in RCM concerning foam wing construction and I advise you to read and follow them carefully. You'll have to flatten out the L.E. and T.E. in order to have the wing seat properly in the fuselage. Use the fuselage to help get the proper fit and then you can add the fiberglass tape around the dihedral joint. And, while you have the fiberglass tape out, put a strip on the bottom of each wing just under the tips. This will certainly stop your wing tips from wearing out.

The landing gears are from Sig's T-34 kit. Modify the one for the 109 by grinding off the part that goes into the wing and bending up a part of the remainder. This will shorten up the part along the wing so that you can mount the gear reversed to the normal manner for a most realistic appearance. Both gears, the ones for the Hien as well, need to be bent forward to help with the plane's ground handling. Do this in your vise, **not** on the plane!

The landing gear well covers are cut from 1/16" aluminum sheet. Drill out some Midwest 1/8" nylon wire clamps with a 9/64" drill and use these to hold the well covers in place.

TAIL SURFACES:

Cut all of your tail surfaces from medium hard balsa. Make sure that the grain is running correctly. Join them together as required and sand them to some kind of an attractive airfoil.

FUSELAGE:

Cut the fuselage sides and doublers to shape and contact cement them together. Add all of the triangular stock. Cut the three formers to shape. Soak the sides in water until they are fairly pliable and, while they are still wet, wrap them tightly around the formers using a lot of masking tape at each former. Don't forget to pull the tail end together. When dry, repeat the wrapping process with glue and epoxy. Add the plywood sheet between the bottoms of F1 and F2, beveling them and the fuselage sides for a good fit. Install your wing hold-on equipment to suit your taste. Now is a good time to add the fillets. I built mine up from Epoxolite (a-la RCM, again) with the wing in place and protected by wax paper. If you're going to use this technique, make sure that the fillets are thick enough to avoid any warping.

Cut the top foam block to its profile shape and glue it in place using

Titebond. Find a foam that weighs about 2 lbs./ft.^{3} and is easy to sand. Make perpendicular saw cuts in the foam only and glue in the top fuselage formers to act as sanding guides. Add the bottom sheeting behind the wing and epoxy in the hardwood tail wheel support. Build up the nose with blocks of balsa while the engine is in place and with the spinner and prop on. Make sure that you have enough room for the fuel lines, throttle linkage, needle valve, spinner, etc. Now start sanding, and be sure not to oversand the foam because it is kind of difficult to replace if you remove too much. Use a grit of sandpaper that seems to be best suited for your foam and balsa. When you're satisfied with your work, put a slight indentation along the foam to balsa side joint. It should be about 1/8" wide and 1/32" deep. A Dremel rotary drum sander does this very well.

Obtain some 4" wide surgical gauze and a good supply of Hobbypoxy Formula II. Cut a length of gauze a little longer than the fuselage. Mix up a wad of epoxy and apply it through the gauze to the foam using a spatula. Work it back and forth many times and you'll find that it will take very little epoxy to completely wet the gauze and adhere it well to the foam. Work your way along the foam making sure that the straight edge of the gauze is resting in that little indentation you just made. You'll find that, in some places, you'll have too much gauze while in others you're lacking some. Trim off the excess making a nice straight edge and rest this in the indentation on the other side. Now, take an additional length of gauze and begin applying it over the exposed foam. When you come to the edge of the gauze already on there, trim your new piece to yield a butt joint. Put a little extra epoxy along this seam. After the epoxy has set, use a little Epoxolite along the balsa-to-gauze seam and gauze-to-gauze butt joint to fill in any recesses. When this has set, begin the final sanding of the fuselage. The gauze covered foam can take a good deal of heavy sanding so there is no reason to be delicate with it. Use a heavy enough grit to be able to remove the mesh of the gauze until you have a smooth surface without all those little squares. Still make sure that you don't sand through. Use some more Epoxolite as the need might arise.

Cut out the cockpit and cover the exposed foam with 1/16" balsa. Don't forget the cockpit floor. Once again

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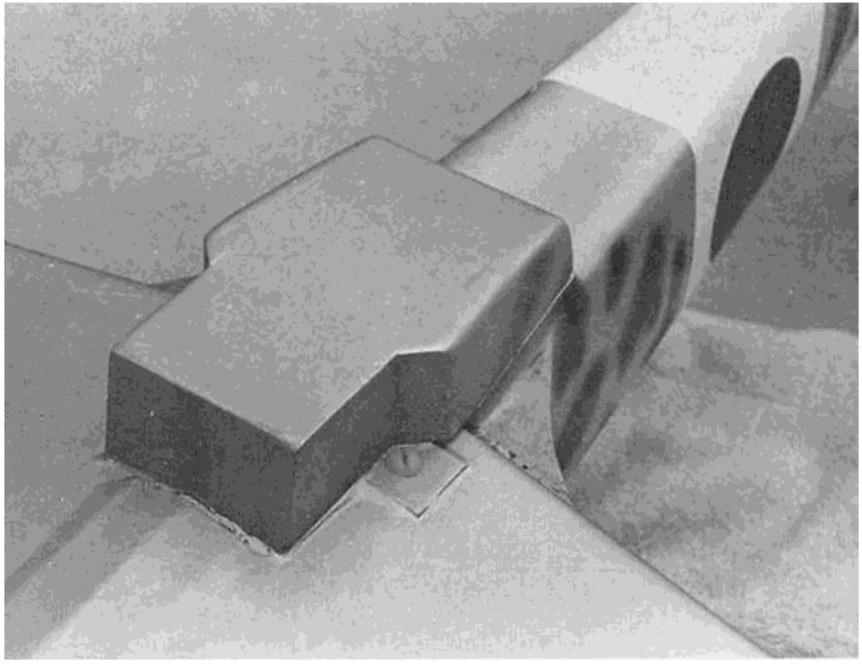

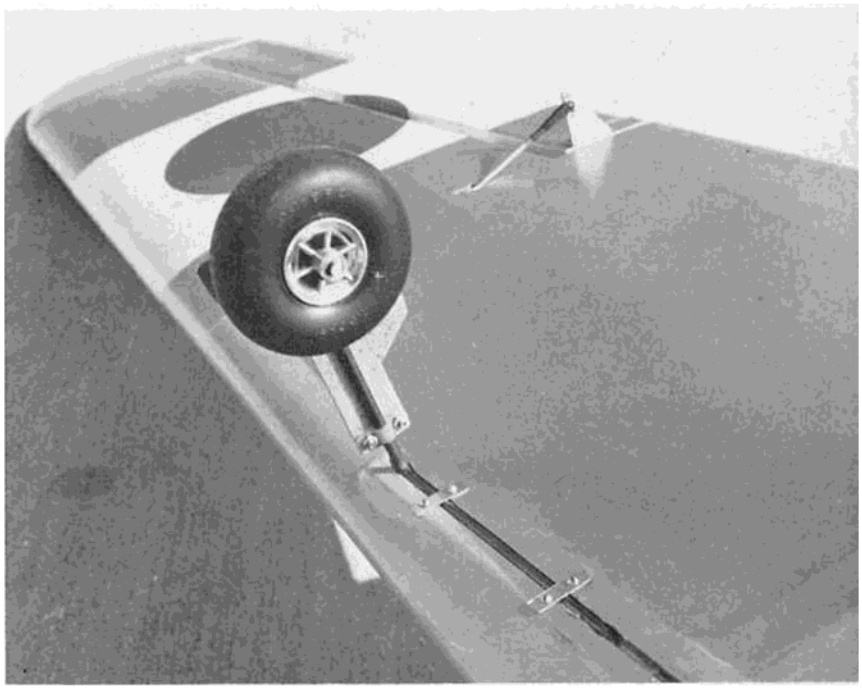

use your Epoxolite as needed.

Install the bottom part of the 109's vertical stab. Make sure that it is touching the bottom of the fuselage along the stab's entire length. This is a very important joint as it determines the horizontal stab's incidence and it needs to be extremely strong for obvious reasons. Epoxy on the ¼" triangular braces and, when this has set, epoxy on the horizontal stab. I usually put the wing on during this operation and use it to help me with my tail surface alignments. Cut a 1/16" deep groove in the horizontal stab and epoxy in the top part of the rudder. When you're working with the Hien, epoxy in the horizontal stab followed by the vertical. Use some more Epoxolite to make some nice fillets around all of the tail joints. Be especially sure to seal the gauze-covered-foam-to-balsa sheet joints with the stuff. The 109's tail plane struts are finished separately and added after the fuselage is painted. Epoxolite as the need might arise.

The canopies aren't as hard as they look. The one for the Hien can be made from Du-Bro No. 2 trimmed to fit. A flat .020 thick sheet of acetate works well for the rear portion. Cut a paper pattern of the one for the 109 like the one shown on the plans. Fold and cut this paper pattern on the fuselage until you get a good fit. Take some more .020 sheet and cut it to shape using the paper pattern as a guide. Score the acetate along the fold lines with an X-Acto knife and put a strip of masking tape along the score line on the opposite side. Fold the canopy along the score lines and trial fit it on the fuselage. Use some more tape to hold it in shape. Cut some 3/16" strips of .007 acetate as long as is needed to go along the score and partition lines. Fold the strips along their center to approximately fit the angles of the canopy. Adhere these strips to the score and separation lines using Methyl Ethyl Ketone, better known as MEK. That's the liquid that comes along with the ARF plastic kits. Hold the thin strips with your hand along the joint and have someone apply the MEK. Allow about 30 seconds to get a strong joint. Before putting on the canopies, paint the fuselage cockpit areas with a black water-based paint. Epoxy the canopies to the fuselage and hold them down with masking tape until they are set. Remove the tape and make a smooth fillet of epoxy using your finger.

FINISHING:

If I haven't forgotten anything, you should now be ready to finish your models. I like to seal the balsa with a couple of good heavy coats of clear dope, sanding lightly after each coat. Then cover completely with a good grade of silk, applied wet, and held on with a thin mixture of clear dope and thinner. When this is dry, apply another coat of the thinned mixture and then one or two heavier coats to get the silk adhered well to the wood. Start the filling process with your favorite filler, brushing on each coat of filler with opposite brush strokes as you used on the previous coat. When you're satisfied with the filling process, wet sand the entire model with 400 wet/dry paper, used wet, being careful not to sand through any of the covering. Clean the model off thoroughly and you should be ready to start spraying on the color coats. There is almost an infinite number of color schemes that you can choose from for each model, so take your pick.

ENGINE AND PROPS:

My ships were flown with an Enya .45, muffled by a KO muffler. I used 11-6 Power Props. Although the planes flew beautifully with this very fine engine, a little bit more power would have been nice to get around some of the vertical maneuvers. If you're not a hot shot (which I am not) then I highly recommend this engine as it has always run perfectly for me.

FLYING:

The airplanes really aren't difficult to fly. They're only tough to take off and land. Although they track extremely well on take-off, for tail draggers, if you're not used to this set-up you might be spending a lot of time ground looping. The trick on take-off is to have a light touch on the rudder controls. As you feed in the throttle slowly, hold a little right rudder. When the plane begins to move to the right, relax the rudder and you'll find that the torque will cause the plane to drift again to the left. Well, just keep putting in enough right rudder to keep the plane tracking straight or off to the right and then back again. You'll probably never need any left rudder if you don't over control to the right. As the plane begins to accelerate, the tail will lift. During your fiddling with the rudder controls, you might have to hold a little back pressure on the stick to keep the plane from nosing over. Let the plane run down the runway until you see it getting a little light on its wheels and then ease back on the stick and she'll start climbing out nicely. Don't try to jerk it off the ground. Keep holding in right rudder during the climb-out as you must overcome that "P Factor" business. Make sure that your engine isn't too lean because if it quits on take-off, you've had it!

Once the plane is flying at a safe altitude, practice some stalls and get used to its power-off characteristics. You see, the plane glides like a dead bird, so you're going to have to come in with power. Put a timer on your transmitter that lets you know when it's time to come down. I fly through my landing pattern almost at full throttle depending on my altitude. With a little luck, I try to wind up at about 10 feet off the ground on my final with the airplane in a slight nose high attitude and with enough throttle to keep my altitude constant. As I approach the end of the runway, I bleed off the throttle slowly as I add a little more back pressure on the stick hoping that I still have enough elevator left for the final flare out at touch down.

I've been trying a new approach (no pun intended) lately. Try turning your base leg a little short and cut your power as you're on final. With a lot of help from the elevator, you should be able to make a decent landing. Give both methods a try. They both have their merits. Unfortunately, things don't happen like this at every landing, so keep those spare props handy.

MORAL:

You know, after looking at these planes for a while, you'll swear that those Sun Fli's and Kwik Fli's are really ugly.

Habe gutes gluck and sayonara! □