Who seici tow wing scale models don't fly well? This one has flown S3 seconds indoors.... Maybe it's because Mooney did i t . . .

PEANUT SCALE Miles Sparrowhawk

By WALT MOONEY ... Our perennially prolific Peanut perpetrator produces positively perfect projects ... period! As proof (whoops!), here's a sleek low-winger that continually pushes (oh dear!) a minute indoors.

• The Sparrowhawk was a special racing machine designed by the Miles aircraft firm in England. There were several of them built and they were fairly successful. In shape, they are classic for their period in aviation history. I found the model to be particularly pleasing, both for its looks and for its flying ability. It flew “right off the board,” and the best flight to date was S3 seconds in a contest at the Santa Ana Blimp Hangars.

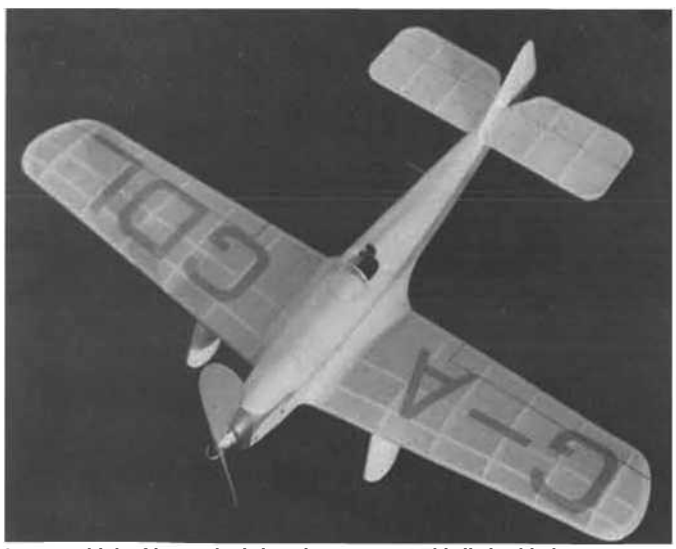
Before going into the construction of the model, a more detailed description of the flying configuration is in order.

The model was built with care to make it light, and it weighs one half an ounce without the rubber motor. It could be lighter if superfine tissue were used for covering, but because the real “G-AGDL" was red and cream, we used Marlow Engineering tissue, which has a pale yellow as one of its available colors. The top decking was 1/64 thick balsa from former 2 to 8. If that is unavailable to you, use bond paper ... or sand down some 1/32 sheet! With the exception of the fuselage which had two coats, the model has a single coat of thin, clear dope.

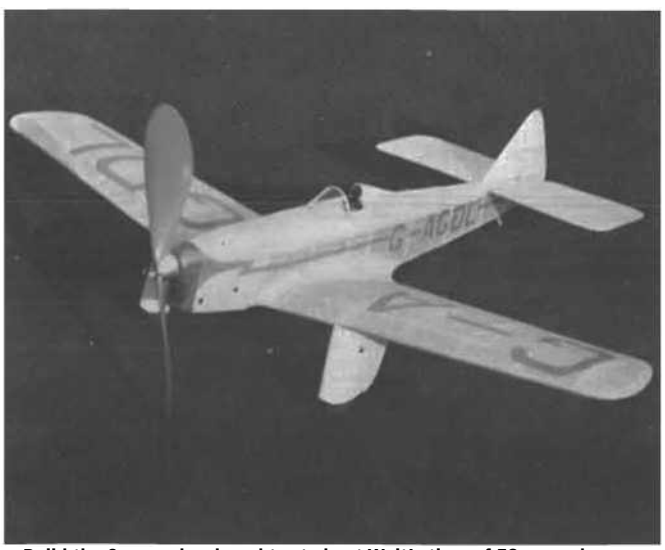
The wings were built flat over the plans (using the flat bottomed ribs) and after covering and doping, they self-warped to give one eighth of an inch of washout at the trailing edge of the tip rib. That is, the tip rib is twisted nose down relative to the center section ribs. For good flying, this twist is essential, so if your wings don’t warp automatically, make sure you do it to them.

The best motor found so far, consists of a single loop of one eighth brown Sig contest rubber seventeen inches long.

It was lubed with Sig rubber lube, rather sparingly, to keep from slopping up the inside of the fuselage.



Come to think of it, maybe it isn't just Mooney! This little ship has nice free flight proportions. Let’s have a "Beat Mooney" contest.



Build the Sparrowhawk end try to beat Walt’s time of 53 seconds, First one to do it at a contest will get a free subscription.

A new Peck-Polymers 4-3/4 inch plastic propeller was used, and the spinner was made of five-minute Sig epoxy. In this configuration, the model balanced at the **CG** indicated and flew without any adjustments. The motor would take 1800 winder-wound turns.

The 53 second flight was the third ever, and was hand launched. Various other minor adjustments were tried after that, but none of them improved the flight time. The model would consistently exceed 45 seconds from an R.O.G. (We claimed that all flights should R.O.G. at the contest, but Peanut rules say H.L. is okay, and the owners of several long-propeliered birds, who wanted H.L., prevailed). No thrust line adjustments were required, and the model shown automatically flew in right hand circles. Since small surface warps can affect the flight, I couldn't guarantee that all models will fly to the right, but I can say that *this* model flys fine in that direction.

The construction of the Sparrow- hawk follows the standard, time proven format. The fuselage is a stick balsa basic box, with semi-circular formers added to the top, which are then covered with thin sheet balsa. Because of the high thrust line, there are cutouts in the formers and no permanent cross sticks between the upper longerons. You may find a few temporary cross sticks an aid during assembly. The top part of the engine cow! between Stations 1 and 2 is carved from block balsa and hollowed to provide motor clearance. The nose block is carved from a balsa block also. A piece of one eighth thick sheet balsa, cut to fit snugly in the front of the fuselage, is cemented to the back face of the nose block so that the front end can be removed. This allows easy installation of the motor, and also stretching of the motor for winding. The wing saddle part of the lower longerons is cut from 1/16 sheet to match the shape of the top of the center section ribs.

The wing structure is conventional; using a leading edge, a trailing edge, ribs, and two upper surface spars. Wing tips are cut from sheet balsa. The ribs over the landing gear should be cut from rather firm balsa sheet, because the landing gear wire is simply poked into the front end and cemented to the bottom of the rib after the wing is covered. The wing ribs can have the scale type sections shown or the fiat bottomed sections indicated by the phantom lines.

The tails can be simply flat structures, or if you desire, they can be streamlined as indicated.

The wing fillets are probably the toughest thing to make on the model.

Usually I use bond paper fillets, but several attempts left me unsatisfied, so I finally carved them from soft balsa blocks. Cut the blocks carefully to the shape shown in the side and top view and then carve in the concave upper surface of the fillet Patience is the most important ingredient, with sandpaper coming next. The final fitting of the fillets is done after the model is covered and the wings are in place on the fuselage…

Undoubtedly the mode! would fly fine without them.

The landing gear fairings are of a type not seen on too many airplanes. They have been called “spats" and “trousers” at different times, for obvious reasons. In the interest of tightness and simplicity on the model, they are made of bond paper. The bond paper was covered with tissue before cutting the pattern, in order to have them the right color when they are completed.

Note that the fairings do not fit on the wing lower surface at 90 degrees, but are vertical. This means that there is a right and a left fairing. The pattern will work for both, but must be turned over between cutting the first and second fairing out of the tissue covered bond paper. Fold the fairing by wrapping the middle around a small dowel or tube so as to get a smooth leading edge without creases. Use the thinnest line of cement to bond the trailing edges together. When attaching them to the wing, only the very front and very aft on the trailing edge need be cemented to the wing. Then, in case of damage, they can be easily replaced.

The little circles shown several places on the plan appear to have been inspection holes on the real airplane and show up as black dots on photographs.

The side inlet and exhaust pipes were made from short lengths of dowel. The tailskid is balsa. The air inlets are painted on the noseblock with flat black paint.

The spinner was added to the propeller by epoxying a thin sheet disk to the aft face of the prop after cutting off the hub extension on the back of the propeller. Then the spinner was built up of several applications of five minute epoxy, holding the propeller in a position while it hardened into the proper shape.