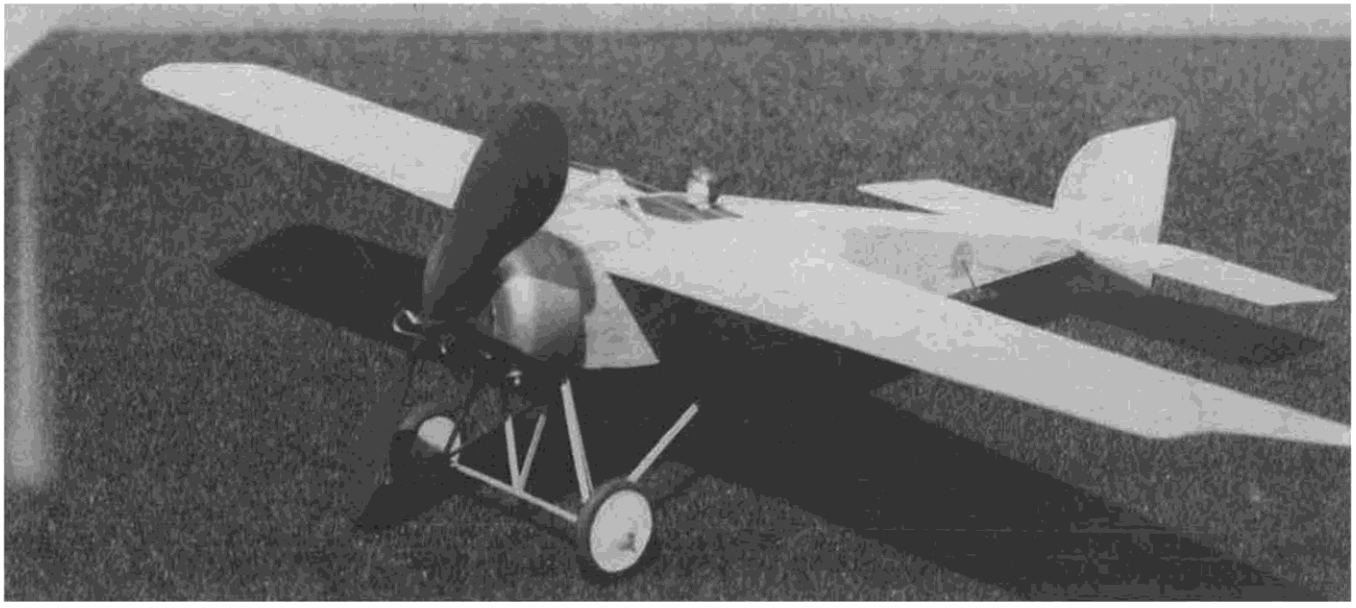

MORANE SAULNIER RACER

By WALT MOONEY . . . Ya say you'd like to fly a Peanut, but don't like gluing all those little sticks together? Tell you what we're gonna do. Just grab a couple of sheets and come on out to the workshop!

• The original aircraft was built before 1912, so it is truly a pioneer aircraft. The vertical fin was very small, but the rest of the surfaces were of ideal dimensions for a Peanut Scale model. The real airfoil section is quite suitable for sheet balsa simulation, so a simple sheet balsa model was inspired. The original model has flown as long as 30 seconds indoors, but most flights have been about 27 seconds. One change from the plans will be apparent in the photos. This is the fact that the vertical tail, as drawn, proved to be too small, and forced a replacement with a larger one. The nice thing about an all-sheet model is that such modifications are easy and quick.

The larger the propeller you select (or the higher its pitch), the larger the tail must be. Use the cut-and-try method to determine how big it must be on your model. A small, low-pitch propeller like the "Kayson" may allow you to get away with the tail shown.

The structure of the model is quite simple, consisting mostly of cementing together precisely cut pieces of balsa sheet. So, the first effort will be to discuss methods to be used when cutting balsa to precise dimensional patterns.

First, consider the wood itself. Balsa is a light, strong wood, however, it is very variable, both in weight and in strength. Generally, the lighter the wood, the softer and weaker it is. Even so, by careful selection, you can find pieces which are optimum from a strength-to-weight basis. Weak pieces tend to crush when being cut. Balsa also is a grainey wood with variations in hardness following the grain direction.

The weapon you use to cut your balsa must be sharp. Razor blades have been the old standby for this job over the years, but the UBER SKIVER knife sold by **Model Builder** Magazine is the modern first choice. Even Uber Skiver blades can get dull once in a while, so a fine stone is nice to have available to touch up the edge of the blades, when needed.

Cutting balsa across the grain,

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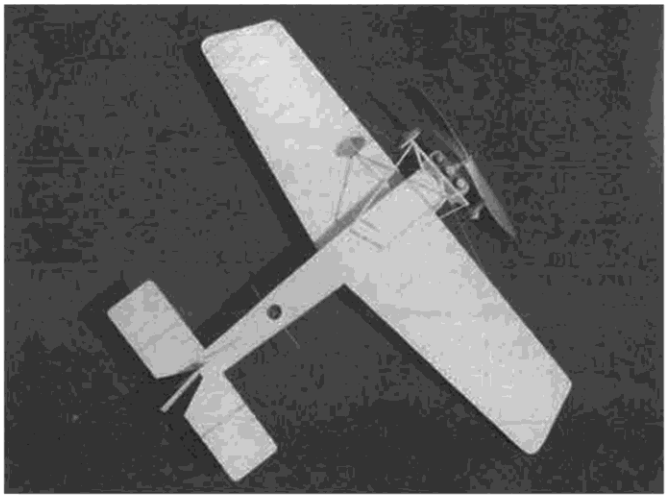
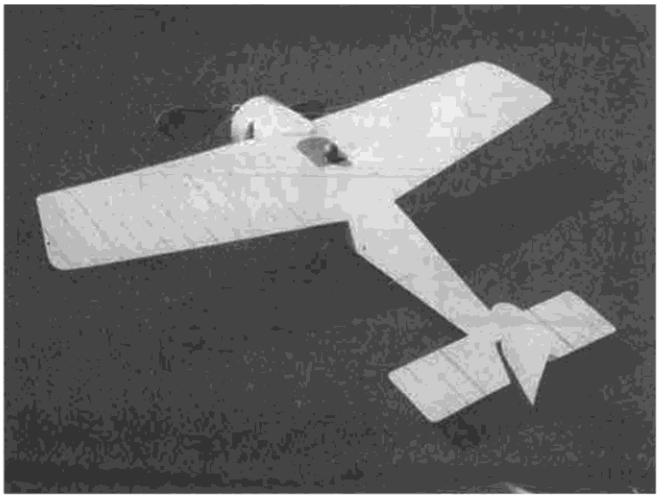


Strange . . . it doesn't look that much different from below than above! Wing is slightly Jedelsky-like in section. Plenty of lift.



Check the instructions regarding vertical fin size. Whatever you do, just tack it on lightly until your sure it will do the job.

towards the outside edge of the piece, tends to split off the last eighth of an inch. Cutting from both edges towards the center of the piece works well when cutting 90 degrees across the grain. When cutting across the grain at angles other than 90 degrees, it is important to realize that the grain will try to guide the knife blade. Therefore, it is important to be cutting in a direction such that the grain tends to hold the blade against whatever you are using as a guide. A dull blade will increase all your problem, so keep sharp!

When cutting balsa, it is almost always better to make several passes along the desired cut line, than to try to use brute force and do the cut in a single pass. A good guide for the blade is a must for accurate cuts. The very least you should have, for straight line cuts, is a metal edged ruler. A 12 inch rule is large enough for a Peanut, but it's really nice to have a three-foot metal straight edge. Some hardware stores now sell low-priced aluminum yard or meter sticks and these are great for balsa cutting guides *(Check them for straightness by holding two of them edge-to-edge. wcn)* Don't use your drafting triangles (like I do), because they will gradually be ruined by blade knicks.

Curved guides for a one or two-shot cutting effort can be made of card, or even of plastic. For a larger number of similar parts, it is useful to make the guide out of sheet metal; aluminum, brass, or even tin can material. Corners, like the tips of the tail on this model, or the wing tip, are best cut relatively close to size and then sanded to the perfect final shape with fine sandpaper.

Round holes in balsa present one of the hardest things for the beginner to do neatly. Regular drills tend to crush the balsa and bring it out in ragged chunks. Homemade tube drills work much better and are easy to make. Model shops carry brass tubing in telescoping sizes from 1/16 to 3/4 inch diameter. Another source of tubing is portable TV antenna. Most TV repair shops have a few broken ones in their trash, from time to time, that are good to no one but a model builder.

Take a length of tube and bevel the inside of an end with a sharp knife blade, until the end has a sharp edge all around it. A steel knife blade will cut brass tubing well enough to do this, although it will have to be resharpened fairly often. Brass is not a metal to hold a cutting edge very long, but we are only making holes in balsa, so it works well for us.

Use the brass tubing drill to make round holes in balsa by pushing it into the balsa with a twisting motion. Again, it is better to make many twists than to try to cut all the way through in a single thrust. With a little practice, you'll find that you can make very precise neat holes in balsa up to about 3/4 inch thick. The round pieces of balsa that come out of the holes can be saved and used for wheels, cylinder fins, or local reinforcements, as is the case in this model at the wire motor peg.

With practice, you should be able to cut balsa accurately enough that no sanding is necessary, for formers that are going on the inside of the body. However, if you haven't yet reached that skill level, a sheet of fine sandpaper can be used to slowly bring an oversize piece down to exact dimensions. For an undersize piece . . . start over . . . there is no such thing as "desanding paper".

All the struts on this model, except the main gear wire landing strut which provides the load carrying member from the axle of the wheels to the fuselage, are made from thin basswood strips. Most shops that deal in model trains have this in a wide variety of sizes and shapes. It's great stuff, stronger than balsa and easy to use. If it isn't easy to get in your area, try Peck-Polymers (as advertised in M.B.) who is also a supplier of propellers, thrust bearings, wheels, and other good things.

Why not go out and cut up some balsa to make this model? The original model liked to fly in left circles. It should have its center of gravity 1/4 inch behind former "B". The pilot's head on the model in the photo was a plastic slot car driver head. The cowl was painted silver. The tires and the simulated cowl opening is flat black. Ribs are brown felt pen. ●