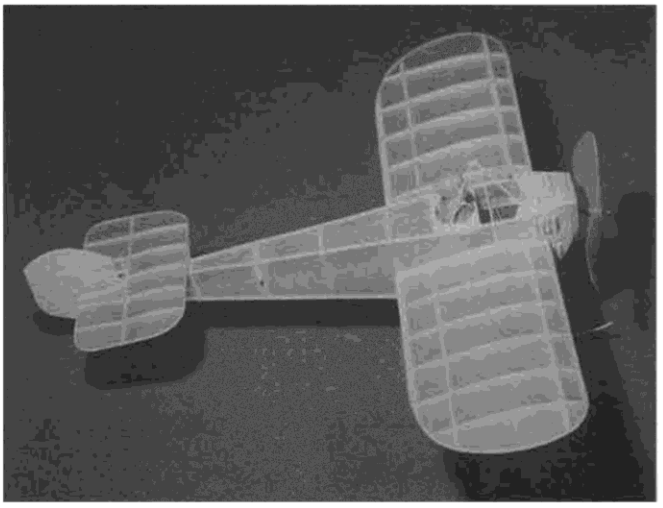
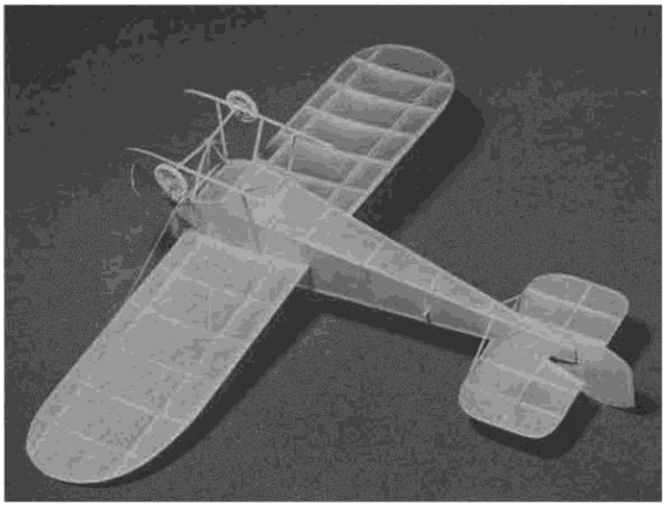


Super-short nose requires making the tail end as light as possible. All-sheet rudder is shown built-up on the plan.



This photo should clear up any questions about the landing gear assembly. Note Hungerford spoke wheels with white tires.

CHIRIBIRI N.5.

By WALT MOONEY . . . The Ole Perfesser presents yet another interesting Peanut, this one a Bleriot-like Italian flying machine from 1912.

• This airplane is a classic shape from the year 1912. Except for the fact that it has brace wires and fixed landing gear, and the old-fashioned engine was so heavy that it only took a short nose to balance it, the configuration is quite similar to the configurations used in the modern Goodyear type racers. It is a midwing, short span monoplane with relatively small tail surfaces. We have learned a lot over the years about structural integrity and aerodynamic drag, but the basic airplane shape has been around since at least 1912.

A pair of white-tired Hungerford wheels that happened to scale into a Peanut-sized Chiribiri was the true inspiration for this model. The white wheels and the skid type of landing gear strutting make this a very interesting model.

All the struts and wire bracing make this a very draggy model. Interestingly, the very fact that the model tends to be aerodynamically dirty, makes it imperative to keep it as light as possible. The heavier a model is, the faster it has to go to stay in the air. And the drag forces increase as the square of the velocity. Therefore, it is much more important to make a draggy airplane light than, for instance, a very clean airplane.

After that lecture, lets just say, "Make every effort to keep your model of the Chiribiri as light as possible." In an attempt to improve the model as drawn with respect to the one in the photos, you will note that the drawing shows a built-up rudder. The sheet balsa rudder of the prototype model is a lot easier to build, but its weight needs to be balanced by ballast in the nose. Because the nose length forward of the center of gravity is only one-eighth of the tail length to the rudder, any weight saved by making the built-up rudder will allow you to remove eight times as much nose ballast weight. That says, "All other things being equal, you'll save nine times the weight saved when you lighten the tail." And this is just in structure and ballast. The power necessary to fly the model at its lighter weight and speed will also be less, so the rubber motor can also be lighter . . . why do these thoughts always intrude *after* the model is built, rather than before?

The plans are fairly simple, and since this series has been going along for some time, a part-by-part instruction lesson will be dispensed with in favor of discussing some of the more obscure details.

The landing gear structure is probably most likely to give interpretation trouble. First, there are two skids, one on each side. These are supported from the fuselage bottom longerons by three members, the most forward and the two rear ones shown in the side view. The second strut in the side view is a center "V" that goes down to the center of the cross axle brace. There is a straight crossbrace between the skids at the location of the most aft struts. The cross axle brace has a slight bend at the center. The wheels are mounted on the ends of a straight axle wire that is connected to the cross axle brace at the center. Wrap that connection point with three turns of fine thread and cement. There is a single cross diagonal brace at the aft legs running from the left longeron to the right skid. These details were determined by studying a couple of old magazine photos and the three-view. They are probably correct. If somebody happens to have a better idea, perhaps he'll let us know about it.

Interestingly, there is no tail skid on the airplane. That's because the skids are long enough to keep the rudder from touching.

Wing warping was used on the original airplane, so there are no ailerons.

Wing tips and tail outlines are made from basswood laminations. This technique has been discussed in many articles, including my last Peanut, the Polish "Lublin," published by **R/C MB.**

Details are generally rather sparse on Pioneer models, and this one is no exception. However, there are a few that give it a distinctive character. The top and sides of the engine cowl have significant louvers. These are added by making short lengths of triangular cross-

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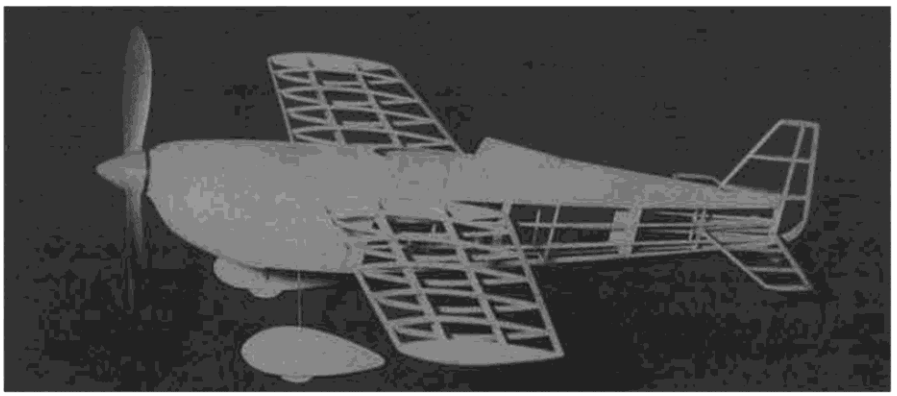

Walt's next Peanut is an Owl Racer... quite a jump in years over this month's feature! Should be pretty fast with that thin wing and symmetrical airfoil.

Peanut . . . . . *Continued from page 59*

section wood pieces and cementing them in the proper locations. A fine gridwork of lines can represent the radiator on the front face of the nose block.

The cabane struts form a four-legged pylon above the cockpit. They meet at the center and are cemented to the top longerons.

There is a kingpost at the center of the horizontal tail on top. Wire bracing is used to support the wings and the tail. Small "X"s mark the points where the bracing will penetrate the covering. If desired, put a small pad of wood at each "X" where there isn't already some structure.

Propeller diameter is restricted by the skids, so either carve one to suit yourself or cut down a commercially available plastic one.

A realistic covering for this model can be condenser paper. To keep your lightweight structure from warping, omit the dope. Condenser paper is already pretty impervious to the flow of air, so it really doesn't need doping. If it is water shrunk it will be smooth until you get a humid day, when some wrinkles may appear. These are not necessarily out of scale, considering the date the original was made. They will disappear again when the weather gets dryer. A close look at the photographs will reveal that they were taken on a humid evening.

The original model flies in smooth left circles. It is heavier than it should be at 3/4 ounce, counting about 1/4 ounce of ballast in the nose. Best flight time so far is 25 seconds. Average flights have been about 18 to 20 seconds long.

Oh yes, a carved styrofoam pilot also adds weight, but adds something to the impression of scale. •