



PZL ORLIK

By WALT MOONEY. . . The perffesser of Peanuts is back with a new delight: a fine model of the Polish Orlik, or Eaglet. With a high wing loading and low aspect ratio wing, this design is well-suited to a Peanut version.

- This is a model of the newest airplane to come out of the famous Polish PZL aircraft firm. It is a piston-engined trainer designed to fly like a jet but to cost like a reciprocating-engined aircraft. To do this, the airplane was designed with a high wing loading and a low aspect ratio wing. This makes it a good subject for a Peanut scale subject because with the 13-inch span limit, the model is still a rather large Peanut with a lot of wing area. In addition, the model has a longer than usual nose, making it easier to

balance, even with a rather long rubber motor. The Orlik, or Eaglet in English, makes up into a very pretty model.

With the exception of a few specific structural innovations, which will be covered in detail, the structural buildup of the model Eaglet follows conventional practice, which has been covered innumerable times in the past and does not need to be covered once again. It is assumed that the main fuselage structure, the wings, and the basic flat tail assemblies are easily understood and fol-

low familiar procedures for construction.

The tail spars are additions, external to the basic flat assemblies, to give this small model a semblance of airfoil sections on the tail and increase dramatically their resistance to warping. On the model in the photos they are basswood (although hard balsa would probably work as well) and are added to each side of the tail structures after they are removed from the building board.

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Construction of this sleek little Peanut is simple; Walt says conventional building techniques will produce a flyable model in no time.



Canopy can be stretched or vacuum-formed. Walt scavenged a canopy from Golden Age Repro's P-51 kit.

The cowling for the engine of the Orlik has compound curves as shown on the top and side views, which are a little difficult to model with sheet balsa as is so often done with more commonly shaped cowls for radial engines. Because it is commonplace to find it necessary to add nose ballast on a Peanut (especially the way mine turn out; heavy), a hollowed block balsa cowl was made for the model in the photos. Carve the external shape on the block first, and then hollow the inside before adding the front end, which is laminated from three circles of 1/16 sheet and one ring of 3/32 sheet at the very front. Cement the layers of balsa together with the grain aligned in different directions for maximum stiffness. A small Williams Bros. plastic thrust bearing is used.

The canopy can be formed as a single piece if desired, but the Polish engineer who designed them was very clever and did it in such a way that the fixed front and the most aft part of the canopy are flat wrapped and so can be simply wrapped around. This also allows the canopy frames to be made out of straight, parallel-sided pieces before they are bent to the canopy contour. As a consequence, we can make them out of a straight, parallel-sided piece also. The ones on the model in the photos were made from strips cut from a piece of 1/64-thick three-ply with grain of the outer plies going across the width of the strips. Make the strips longer than necessary and cut one end to the proper angle for attachment to the upper longeron as shown in the side view. Now cement it to the longeron, flush with the outer side. When this is completely set, bend it around to the other longeron until it has the correct curve and height in the center of the airplane and is properly located in the fore and aft direction on the second longeron, then mark the cutoff angle. Cut the strip as marked and cement it to the second longeron. Make sure that the attachment of the canopy frame is flush with the outer side of the fuselage and vertical with respect to the airplane at its point of at-

tachment in terms of the front view. Of course, both frames lean in the side view; the front one leans forward and the aft one leans back.

The center part of the canopy has a compound curve and needs to be formed over a pattern. It can either be stretched or vacuum-formed. Which way it was done on the model is unknown because the Golden Age Reproductions kit for the P-51 has canopies for both the "B" and the "D" model P-51. Both canopies were left over because an "A" was put together. And the center portion of the "D" canopy fits the Peanut Orlik. Thin music wire and balsa details were used to construct the landing gear details, and they were made to plug into mounting blocks so that the model could be flown with the gear "retracted." The doors were stuck on with rubber cement for easy removal.

This model did not fly right off the drawing board, but required quite a few trimming flights. It tended to spiral dive to the right in the glide. As more and more left turn was adjusted into the glide trim, more and more right thrust was required for the powered portion of the flight. Luckily, the Polish designers saw fit to have external tabs on all the control surfaces, so flight trimming is simplified. •