



## + EULER D-2 +

By WALT MOONEY . . . Walt had problems with his Fokker Triplane, but his Euler D-2 flies well enough to compete against larger models.

plane wants to fly, and a helicopter wants to crash!" On that basis, I classify the Fokker Triplane Prototype Peanut I built as a helicopter. Forgive me, Frank, Stanley, and Igor.

The Euler D-2 is one of the few WW-I biplanes that was equipped with a rotary engine and that had a reasonable nose length. It also had a reasonable vertical tail size. The only changes from exact scale on the model are an increase in size of the horizontal tail and the addition of a small amount of dihedral. The model as built flew very well, and on its first outing managed to take second in the Flightmasters WW-I flyoff. The other models were all larger rubber models, so the Euler D-2 is able to compete fairly well.

The Euler construction methods follow pretty standard practice in almost every respect. The flight surfaces (wings, horizontal tail, and rudder) are built directly over the plans. The top wing is identical to the bottom wing except that there is a cutout in the center in the trailing edge. The fuselage is a box structure, and the sides are assembled directly over the plan. They are then removed from the plan, separated, and then cemented together at the aft end. Cross pieces are then added between the top and bottom longerons at each of the uprights. Use the top view of the fuselage to determine the length of each cross piece. The fuselage tapers from almost a knife edge at the aft end to a maximum width of the basic structural box at the back of the cockpit. From this point forward, the fuselage structure is the same width. Top formers are added at A, B, C, D, E, and F. Side formers are added at G, H, I, and J. The top decking is 1/32 sheet balsa (the raised portion of the decking directly forward of the

cockpit will be discussed in detail shortly). Five 1/32 sq. stringers are added on each side of the fuselage forward of station C.

Landing gear and struts follow standard practice.

Two items require more detailed discussion. These are the raised combing forward of the cockpit, and the engine cowling including the dummy cylinders. First, the area forward of the cockpit: After installing the 1/32 sheet balsa top decking and before cutting the cockpit hole, select a soft piece of A-grain balsa 1/8 inch thick and about 1-1/2 inches long, wide enough to cover the entire width of the deck. This balsa should be soft enough to wrap easily around the top contour of the decking. Cement the 1/8-inch thick piece in place on top of the decking with its aft edge at point C and its forward edge about 1/4 inch forward of point B. Now lay out the cockpit outline as shown in the top view and cut out the cockpit hole. Using a very sharp knife, carve the top decking to the proper shape. Use fine sandpaper to fair the edges of the 1/8-inch thick second layer of the decking smoothly into the first, but do not cut into the bottom layer.

The dummy engine and engine cowl are built as a unit and are used like a removable nose block. This is necessary to provide access for installing the rubber motor and to allow the motor to be stretched out for maximum winds. The cowl on the real airplane is cut out from the bottom up to a very small radius directly around the propeller shaft. A normal removable nose thrust bearing with a hole large enough for adequately installing and winding the motor is thus out of the direction. Instead, the whole cowl is made to plug

into the front of the fuselage structure.

Cut out the back face of the cowl to the shape of your fuselage outside contour at station A. Remove 1/32 of an inch from its curved outer edge to allow for the wrapped sheet part of the cowl.

Cut a round rubber clearance hole in the back face, as indicated by the dotted line in the front view. Cut two forward cowl faces from 1/8 sheet balsa. Note the pie slice cutout in the lower quadrant, as shown in the front view. Make the hole in the front faces to accommodate the Peck-Polymers nylon thrust button or equivalent. Now cut two 1-inch long pieces of 1/32 sheet balsa from a standard sheet. Butt-glue these together so that they can be wrapped around the cowl back face and one of the cowl front faces. The cowl is left open at the bottom. Make sure the front and back of the cowl are parallel and the proper distance apart. Cement the most forward face in place. Fit a piece of 1/8 sheet into the rough cowl to provide a dummy motor support. Use a narrower second piece to simulate the bottom of the engine crankcase and install the three dummy cylinders as shown. The real engine was a twin-row rotary.

The model should be covered with lightweight tissue in the normal manner. Don't be afraid to spend a lot of time with fine sandpaper before covering it. Probably the biggest cause of poor-looking covering jobs on a model is because the builder has become too impatient to get the model finished and neglects the job of completely sanding all the structure. After its been done, carefully inspect the entire structure for flaws before covering it.

The model in the photos was covered with white tissue. The fuselage was given three coats of very thin dope, and the wings and tail a single coat. India ink was used to indicate the control surface separation lines. Black Japanese tissue was used for the insignia. The cowl was painted with silver dope. Cylinders and tires are flat black. The propeller was painted a mahogany brown. A styro-foam pilot was carved and painted (only his head and shoulders), and using white glue, cemented in the cockpit. I like to see pilots in models.

For flying efficiency, I omitted all the flying wires. They are really draggy, and when the model is being flown they are unnoticeable anyway. It's a decision each model builder can make for himself. Personally, I like models that fly, and I suppose in this case I was over-correcting for the pain of the Fokker debacle.

I hope all you Peanut enthusiasts out there enjoy these little obscure birds as much as I do. My next Peanut is a really clean, nice flying modern airplane, the Bellanca Aries. ●