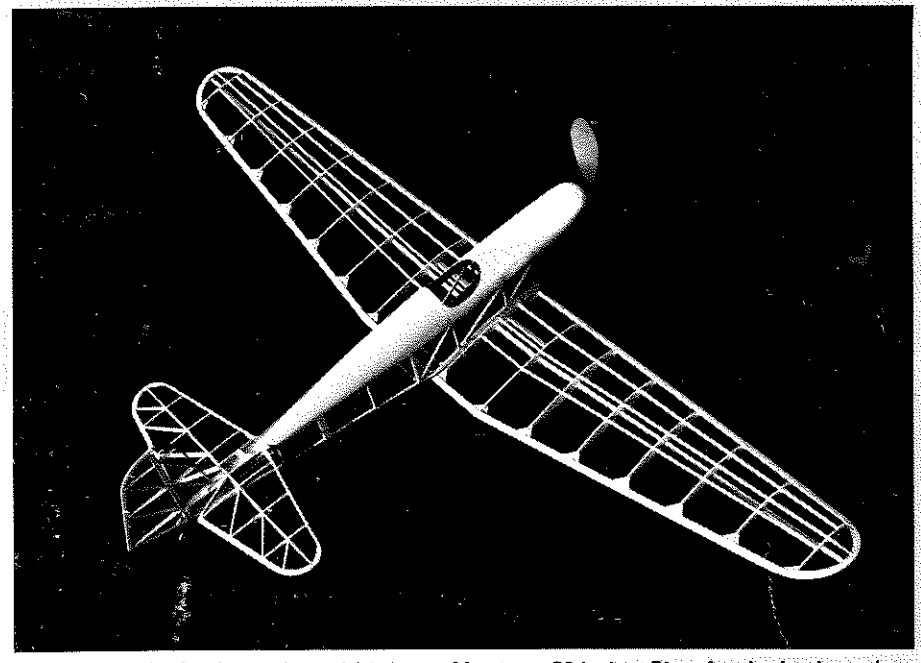
Erla 5A

By WALT MOONEY. . .The Perfesser is back, and this time with a real cutie. You can build it as a 9-inch MIAMA-rule Peanut(no longer AMA legal), or get the plans for a Jumbo Scale with a 36-inch span.

• Generally the color scheme has not been terribly important on the Peanuts presented; however, this is a model of the last Erla 5A in existence, and besides, the color scheme itself presented a large measure of the inspiration to build the model. In the August 1984 issue of *Aeroplane Monthly*, on page 413, is a beautiful picture of this airplane flying over Summenthal, Switzerland. It is a perfect side view. As soon as the magazine arrived, I knew a model of that airplane just had to be built. A small three-view of the Erla 5A with a DKW 600 cc motor and of the Erla 5D with a Zundapp Z 90a motor was available, so the project eventually got underway.



Photos show the Jumbo version, with a span of just over 36 inches. Plans for the Jumbo scale are available. Walt's model was covered in white Econokote with red trim.

It became apparent that the Erla 5A in the photograph did not exactly match either three-view, (a not exactly unexpected occurrence), and a third three-view of the Erla 5A with a VW motor was developed. The nose was fixed to match the VW engine, fenders were added to the landing gear, doughnut tires replaced the smaller ones, and the Erla 5D rudder replaced the smaller 5A rudder. With these changes the Erla 5A three-view matches the photo of the real 5A which was registered in Switzerland as "HB-SEX," an appropriate english annotation for a sweet sexy little German design of 1934.

The model in the photos was built as a Jumbo scale with a span of just over 36 inches. (Exactly 36 inches would make it one-inch to the foot scale.)

Construction of the model generally follows time-honored methods, although several items need to be covered in detail.

CONSTRUCTION

The fuselage uses a standard two-sides-built-over-the-plans approach. These are then removed from the plan, separated, and then glued together at the extreme rear end.

Cross braces are added top and bottom and then the formers and top sheet covering is installed. The thrust line of the motor, and consequently the location of the rubber motor, is quite high in the fuselage. So after the top covering is complete, remove all the top cross braces from station F-1 to F-7. The carved nose top and forward block on the nose will allow the removal of the extreme forward cross piece also.

The wing has conventional construction using wing ribs and multiple spars. The top spars are 1/16th by 1/8th, note that at the tips these must be tapered down to 1/16th square.

The main spar is tapered from the dihedral break to the top. The tops are cut from two layers of 1/16th sheet laminated together cross-grained. The trailing edge is relatively light, so don't forget to add the gussets at each wing rib.

Inset a piece of 1/8th sheet between the root ribs from the leading edge to the sub spar to support the landing gear which is built up on a 1/16th-thick plyload base.

The tail surfaces are built directly over the plan with sticks that are 3/32nds by 1/4th and 3/32nds by 3/8ths (unless otherwise noted), for the vertical tail and horizontal tail respectively. The leading edge, trailing edge, and tips must be blocked up during assembly so they are centered on the other structural members which are set on edge over the plan.

When the tail structures are thoroughly dry, they are sanded to the airfoil section and taper in thickness as shown on the plan.

The size of the scale horizontal tail is indicated on the plan. It simply has one rib bay less on each side. Both the enlarged tail and the scale tail were built for the model in the photos. The larger horizontal tail is recommended.

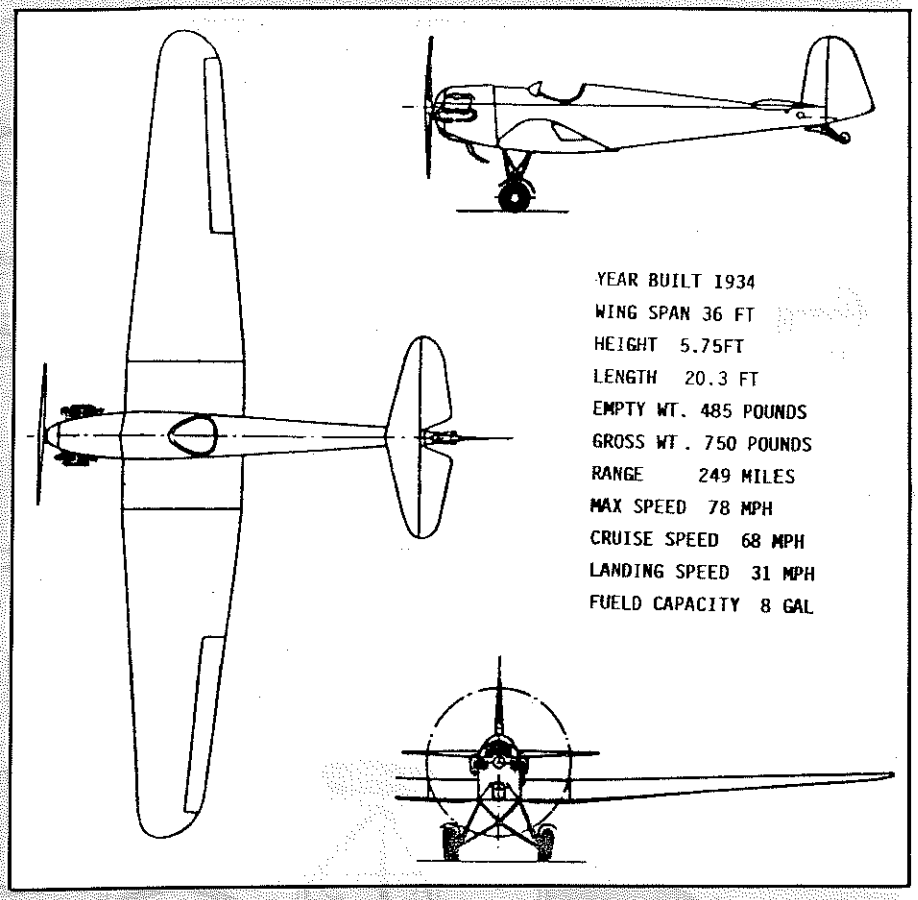
The main landing gear is probably the biggest construction challenge on the Erla 5A. After it is completed it tends to be quite rigid, so it was decided to built it on a 1/16th plywood base sheet which is then relatively lightly glued onto the wing bottom plate.

On hitting an obstacle during a landing, (there is no such thing as scale gravel; it's all oversize) the landing gear can be knocked off with very little damage to the airplane.

Study the landing gear detail perspective to come to understand how all the wires must be bent. (We bought 100 feet of #14 wire with red insulation to do our landing gear.)

Remember to slip the insulation over the wires before they are finally assembled. A drop of solder at each joint can be used; however, on the model in the photo no solder was used, and the landing gear assembly seems overly rigid, if anything. The wires must be cemented to or inserted in the plywood base.

The brake disks inside the wheels are balsa, the fenders were made on a Mattel toy vacu-form, but can be pulled in the fashion of a canopy out of plastic. A form is made like a slightly oversize smooth-tired wheel. This is then sliced diagonally from the edge of the tread on one side to the other edge of the tread on the opposite side. You now have two wheels that are full thickness on one side and zero thickness on the other. One is all you need. Remove about one third of the thin side, and you have a male mold to pull the fenders on. The skirt of the fender is trimmed to match the brake disk and notched to go over the axle. The fenders are cemented to the inside of the brake disk, between it and the wheel.



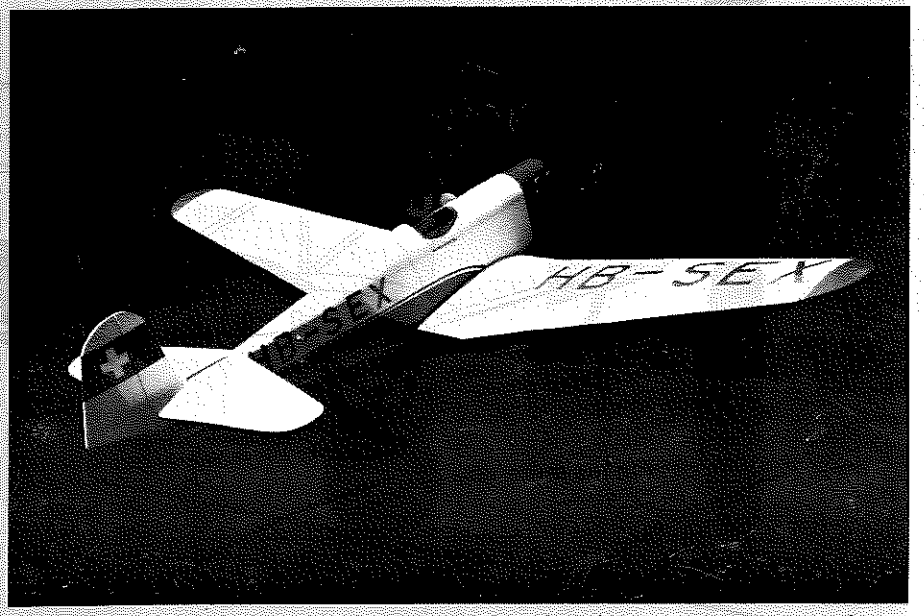
Cover the model with the material of your choice. The Erla 5A in the photo is covered with white and red Econokote. It's tougher than tissue and doesn't get holes poked in it as easily.

Assembly is simple. Just cement all the components in place. Add details; such as, the dummy engine, tail wheel assembly, cockpit combing (the red insulation works here too), exhausts, windshield, etc.

The model should balance on the sub spar. It was flown with both horizontal tails with this center of gravity. Although it did not ever crash with the scale tail, the flights were somewhat erratic and scary. It's really quite tame with the larger tail.

The model has about 3/16th washout in each wing and otherwise neutral control surfaces. A 1/32nd shim of left thrust was used, and the model flies a left-right pattern.

Have fun with your sexy Erla! •



Finished photo of the Erla. Registration designation was from full-size craft registered in Switzerland, denoting a sweet, sexy German design from 1934. Full-size craft was VW-powered.