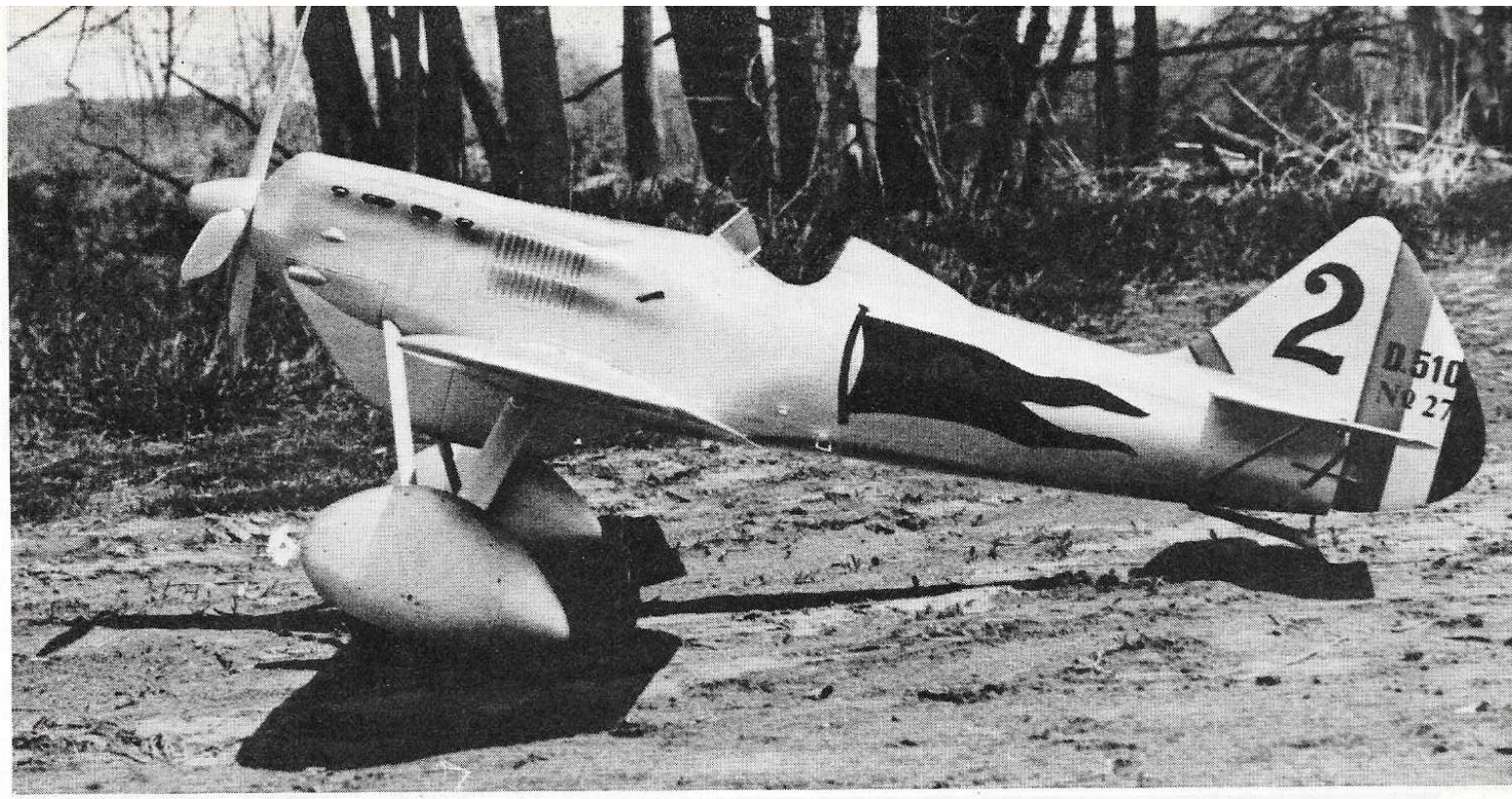


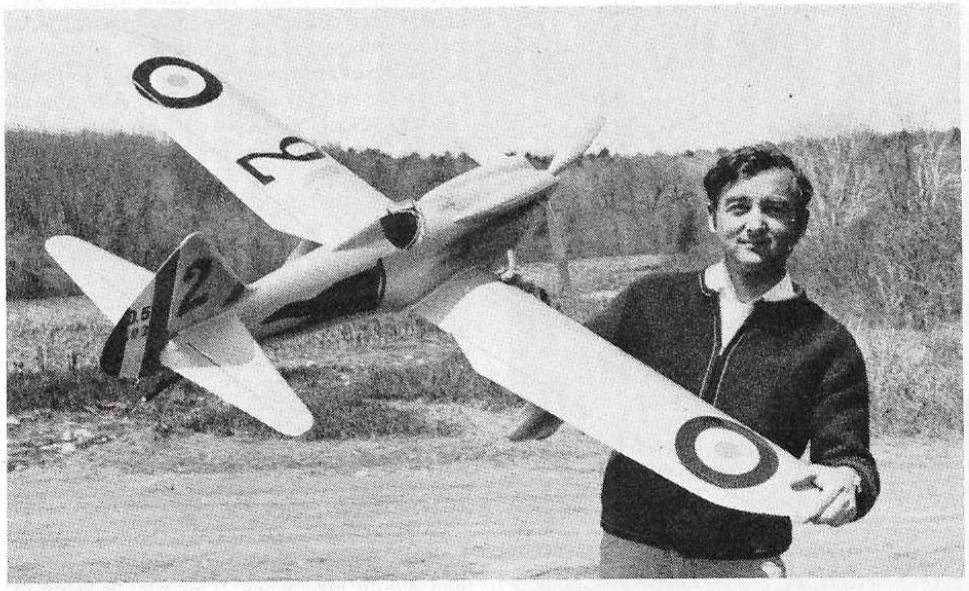
Photos by Guy Coraccio

Dewoitine D-510

by Alan Spievack

In the era between the two World Wars, aviation went from the Jenny to the P-40 through a period of sleek metal monoplanes with open cockpits and big feet.

The "Golden Age of Flight" was "golden" because new ideas, new construction techniques, new engines and a new science all grew together under the influences of individual people-and only a few flew. Todays "space age" is just as "golden" but it's all done by computer and committee, and everybody flies. In 1920-1935 it was still new.

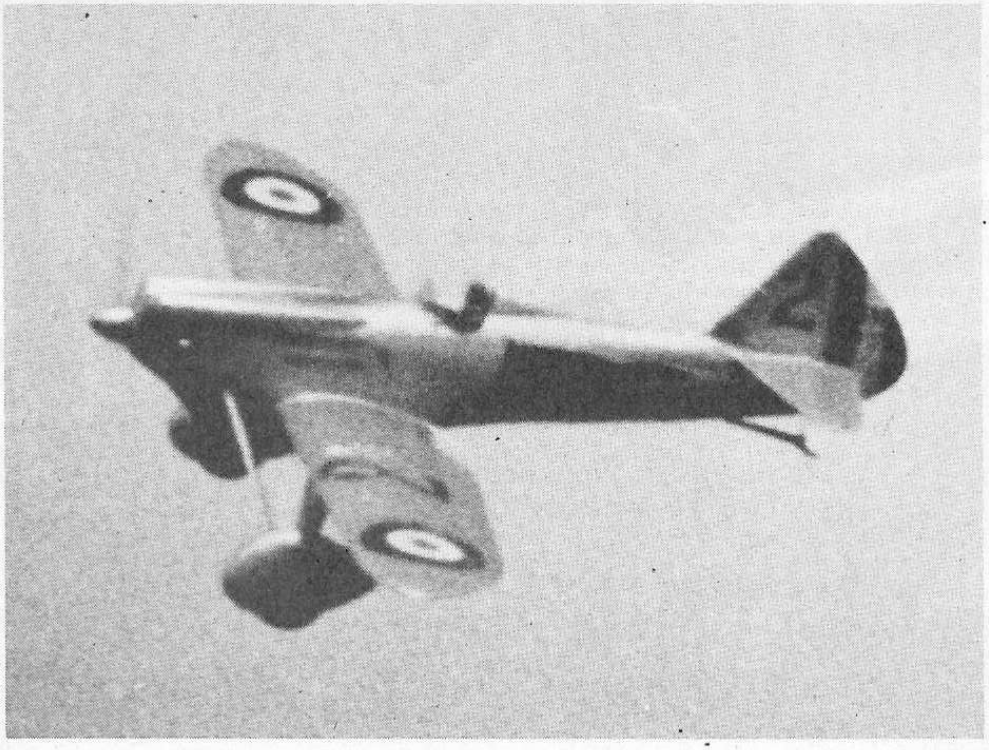


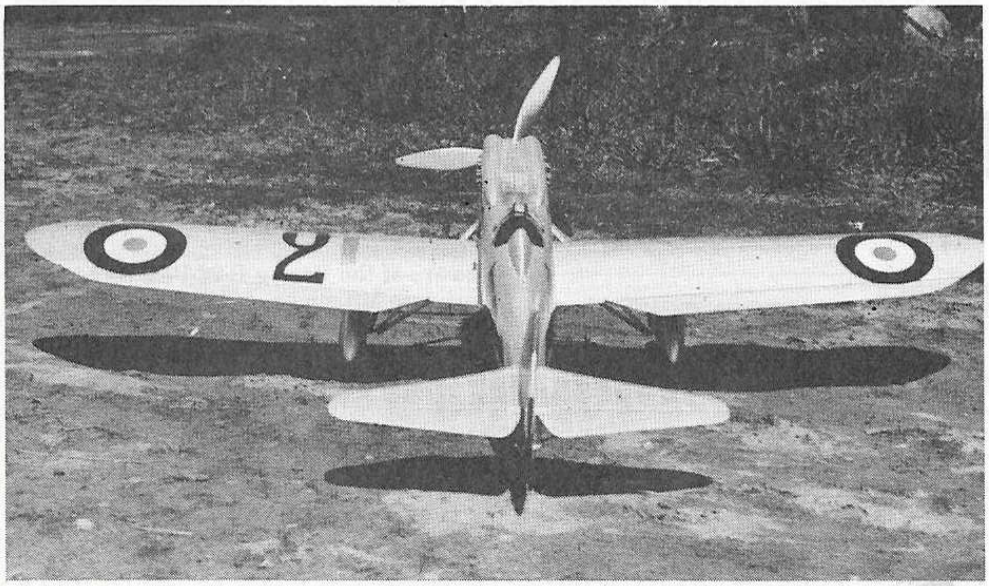
No reason a ship like this shouldn't fly superbly. Alan's "D-510" does, a proven contest winner. **At top:** It ended an era. Modern, compared to a biplane, but retracts were yet to come. A classic.

The early 1930's were characterized by new powerful (mostly water cooled) engines, aluminum monocoque construction, and because there was no war, armies of the world (there were no air forces yet) strutted their new aircraft in the brightest of colors—not drab camouflage. That was the era of the Boeing P-26 Peashooter, the Japanese Mitsubishi A5M (precursor of the Zero), and the French Dewoitine 500 series. Only the conservative British stuck to the biplane concept. These new aircraft were characterized by fairly large wing areas, high landing gear legs (so the big props could clear the ground) and colorful markings. What more could a scale modeler want? And if that wasn't enough—where can you find a real airplane with full strip ailerons?

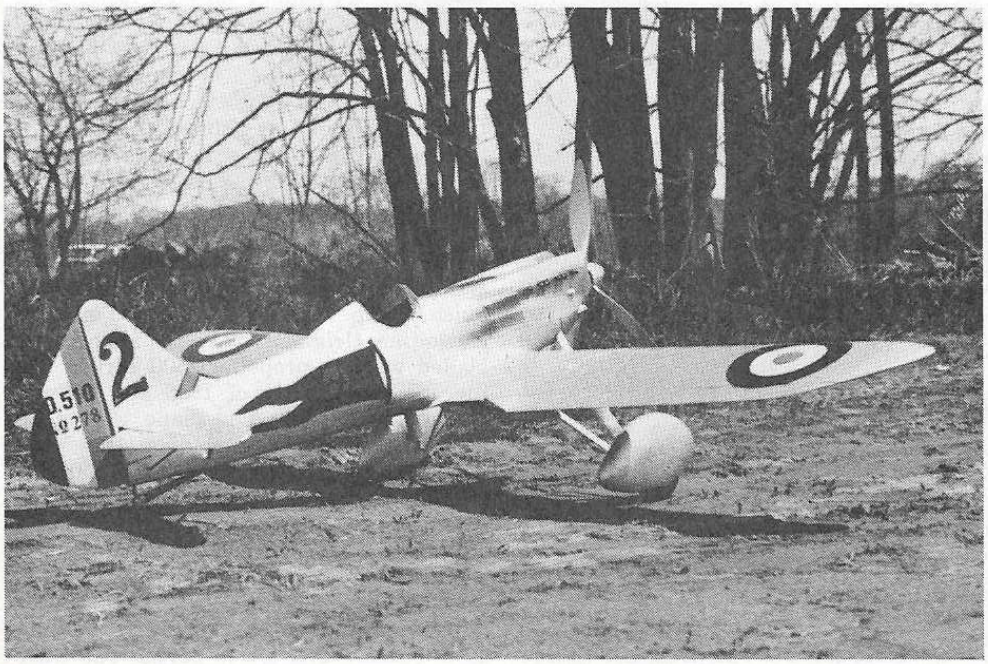
Almost as soon as it began, the Golden Age ended. By 1936 war was arriving—and someone said, "Those are 'nice' airplanes—but wouldn't they go faster with retractable landing gears?" So the 1930-35 "Dewoitines" became extinct when the Spitfire, Me-109 and P-40 made them obsolete. Even the French went on to the retractable model Dewoitine 520.

The Dewoitine 500 series was designed in 1930 to replace the "line" fighter of the French Army, the Nieuport-Delage D.62. It, and the Morane MS 230 fighter were parasol wing airplanes, restricted by drag and lower powered engines. The Hispano-Suiza 875 hp. engine was designed into the Dewoitine. Originally it swung a large two bladed wooden propeller (500 series) but the 510 modification of 1933 had a three bladed metal prop. The plane was of all metal construction, including the wing which had full span ailerons! The 500 series had two cowl machine guns, but was modified later to a pair of wing guns and a cannon firing through the prop hub and spinner. The airplane flew well and was liked by its pilots, but by the time war came in 1939 it was obsolete and used only as a trainer. The D-510 series was built





It'll kind of drive guys crazy, not too many can pinpoint the more obscure designs that readily. **At top:** Airborne, it's in its element. A well balanced machine, power in reserve within the cowl.



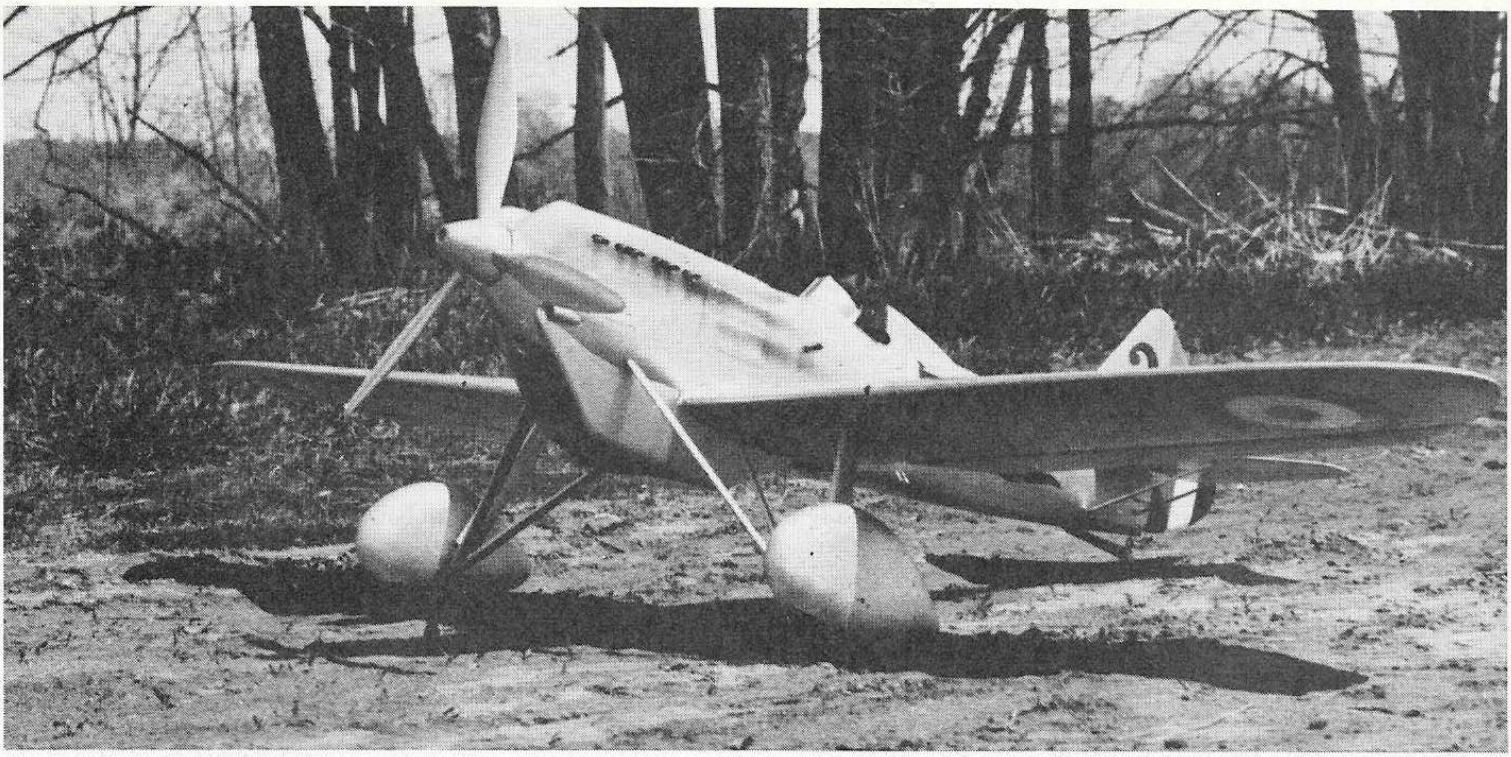
from 1933-36. There were about 230 production aircraft built. To my knowledge none are in existence today. Sadly, not even the Musee de l'air in Paris has much information. No cockpit photos can be found.

The model you see on these pages has been a winner from the beginning. It won the New England Regional Stand-Off Scale event in New York. Both times getting 91 static points and the comment, "What is it?" At 7½ lbs. it flies great. With a Webra Speed .61 or similar .60 engine it is off the ground in 20-30 feet (which is very unscale like). With all that aileron area axial rolls are easy. Just remember to hold "up" elevator as you begin to takeoff and let the tail come up slowly. Feed the power in slowly as you accelerate, and you'll get beautiful smooth takeoffs. Anyone who can fly a pattern type aircraft will have no troubles in the air. The model is built to 1.75″:1′ scale and has no intentional deviations from scale. (Some sneak in when you aren't looking.)

Fuselage Construction

Most of what is said here will be obvious from looking at the plans. I build contoured fuselages by what I call the "Guillow Method." I learned it as a 7-10 year old when building rubber models. The beauty is that you can build light, without a crutch or jig—and still be warp free. The fuselage is built in two halves (one right, one left please). This means that each former is cut by placing the former pattern over two pieces of wood—so that you cut out two (exactly-the-same) half formers. (They can be exactly-the-same "wrong," as well as "right," so be careful). Next lay out 1/8″x1/4″ balsa stringers over the outline edges. Pin firmly to your working table or board, and glue on the ½ formers from nose to tail (rudder post included). Following this, glue in the motor bearers (epoxy) and you're ready to lay down stringers as shown. When they are dry, sheeting can begin. The plans show 3/32″ soft balsa sheet. I sheeted the rear of the prototype with 1/64″ ply. It worked well, but is harder—and when painted you can't tell one method from the other. Sheet the wing saddle area and don't cut out the wing saddle blocks until the wing is together—so the fit is well aligned. When the first half is well dried (over night) build the opposite side. Before you put the two halves together install whatever type of control rods you plan to use for rudder and elevator. Also install the tail skid block and tube for shock spring. Now glue the two halves together, cut out cockpit hole, then fit your engine and tank. Install blind nuts for your engine hold-down bolts and then place and shape the balsa front block above the motor mounts. Next glue on the rocker-arm cover formers (three on each side) and plank with strips of 3/32″x1/4″. Now the balsa nose block can be glued on and shaped to fit the rocker arm covers above and the cowl below.

The cowl and front section of radiator are one piece and comes free to service the engine—the cowl is fiberglass, the "Easy-does-it" Hobbypoxy method. I used styrofoam for a mold and laid the cloth over that, but a balsa block cowl, well resined would also work. The rear section of the radiator stays attached to the underside of the wing. Use micro-balloons and



resin filler around the rocker-arm covers to fair into the fuselage and to fill cracks. Sand smooth and move on to the tail.

Empennage

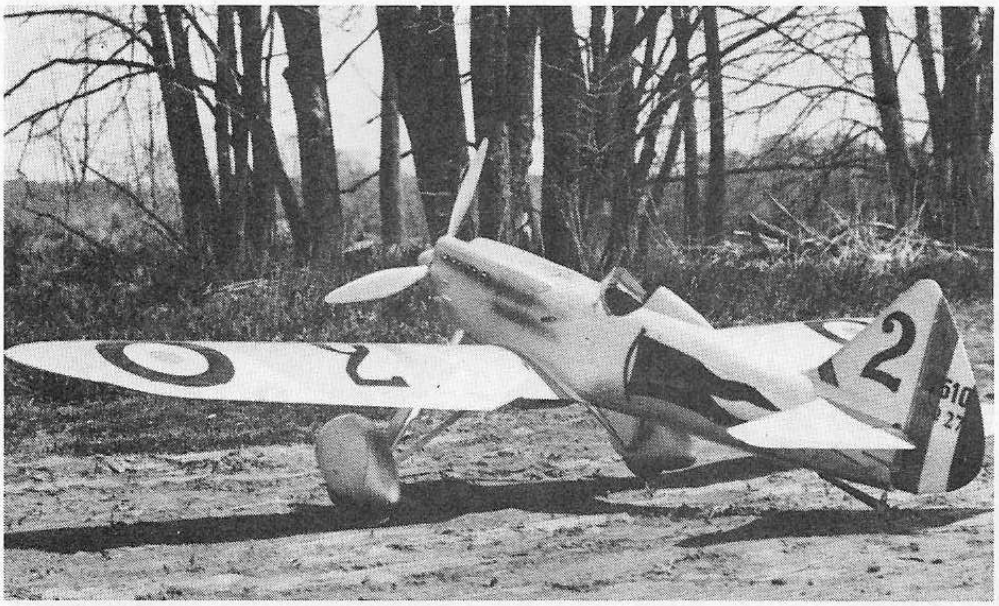
The vertical fin was built with the fuselage, as shown on plans. It is sheeted with 1/16" balsa. The stabilizer can be 1/4" soft sheet formed to airfoil or built up with 1/16" ribs and sheeted with 1/16" balsa (as shown) or 1/16" balsa sheet over a foam core.

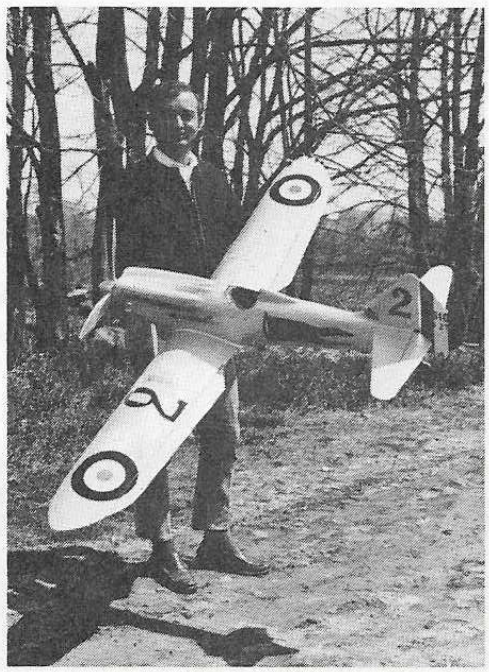
To translate: Do it any way you like, but remember the four hard points for attaching the stabilizer struts (two on each side).

The elevator is shaped 3/16" sheet (soft) and the elevator horn is a *Mid-west* 4" controline horn. Bend the arms so the horn (internally) is angled forward. This gives differential throw (more "up"). Do not epoxy the horn into the two elevator halves until the very end—when all painting and finishing is done—and after it's been hooked to the control pushrod. The rudder is also an anyway-you-like-it method, but I did it by gluing small ribs to a 1/8" sheet core—then covering the left and right sides with 1/32" sheet. The plans show a solid rudder and that is easier. Both work well.

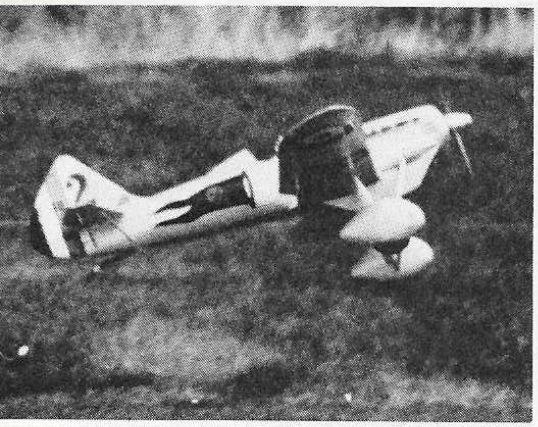
The Wing

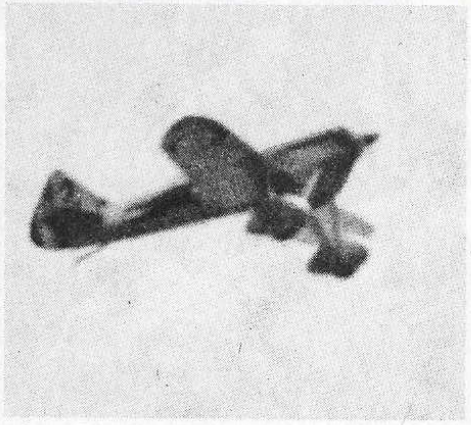
This is the easiest part. Cut two foam cores each 28" long using the root rib and mid-wing rib. Then cut a pair of tip cores (using ribs on plans) from the 7" foam piece left over from the original 35-36" foam block. Next cut the elliptical shape to the tip and epoxy glue the tip section to the 28" portion. Remember one left wing and one right—please. Epoxy the halves together with the appropriate dihedral as shown on plan. Cut out slot for the 1/4" balsa spar. Turn the wing over and cut out the slots for three standard grooved landing gear blocks (one in the center—one on each side). They will butt against the wing spar for very solid construction. Now epoxy spar and blocks in place. Add the balsa tip around edge of wing tips—sand to tapered edge. Add leading and trailing edges and sheet the core with 1/16" balsa. Ailerons are 2" stock cut to shape. Now using the wing root rib, trace and cut out two wing saddle blocks using 1"x4"x12" soft balsa. Be sure the chord line is parallel to the block edge (i.e. zero incidence). Then drawing a zero incidence line on the side of the fuselage and lay the saddle block in position against the zero line. Mark a line around the block on the fuselage. Cut away the fuselage sheeting and replace with the saddle block, but do not glue it yet. Set it up on your table with the wing and fuselage on saddle blocks. This way you can be sure it's all square. Let the blocks lie at the angle they take on the wing. Sand the blocks as necessary to make the alignment correct. Now glue the blocks and sand them flush with the side of the





A lean kind of beauty when viewed from rearward angle. Agile, almost a Pattern kind of performer. **Above, and right:** A massive gear, as if afraid to land. A fine choice for modeling. Alan and ship.





fuselage. Then epoxy hardwood threaded blocks to hold the wing nylon bolts.

Landing Gear

The landing gear is next and I won't try to describe it. Just follow the pictures on the plans. It is very rugged. Remember all the K&S aluminum fairings are attached to the wires by RTV (silicone cement) *except* the piece that attaches to the *fuselage*. It slides up and down freely to give shock effect and to dismantle the wing.

The wheel pants are "Easy-does-It" fiberglass also. I used foam for molds. Then cover them with Saran-wrap and lay up two layers of Hobbypoxy cloth and Hobbypoxy Formula II. After they cure (24 hours), they can be removed from the mold by cutting down the center to create two halves. The Dremel Carborundum cutting wheels works beautifully for this. Now any work can be done to prepare the pants—the axle hold down units installed etc. When ready to install on axles put on inner half, wheel spacer, 4″ wheel, spacer, then outer half of pant and glue the two halves with 5-minute epoxy. They could be done from balsa block if you prefer. The wheels are 4″ Vantage Williams Brothers.

Finishing

I used fiberglass (0.6 oz. cloth) and two coats of resin-sanded smooth, then K&B primer, but good old silk and dope will work as well (and be lighter in weight). After the primer, put on all the panel lines (the tape and "Stuff" method), add the Louvers and rivet heads. Now a pause here to note: The panel lines, louvers, and rivets "make" the airplane. But everyone will ask you, "How did you do the rivets?" *No* one will ask you how you did the louvers or the panels. The rivets are easy, 22,000 drops of Titebond glue—each applied via syringe and needle individually. They only took about 8-10 hours of work and are not hard. I've tried four different methods of making louvers and finally built each one up individually from a dowel stick and micro-balloons. Now you're ready for final coloring. There are a number of attractive color combinations available for this ship. The references below give sources to look for. The only thing you might find hard to get is the 3-views published in M.A.N. in 1960.

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4) **Pictorial History of the French Air Force,** Vol. 1 1909-1940 Andre Van Haute. Ian Allen Ltd., Shepperton, Eng.
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6) **Aviation News** (Available from Squadron Shops), Issue no. 1-24. pg. 4,5,6.