World War I Radio Classic

Nick's "S.E.5" on its maiden flight at the WWI Scale R/C Rhinebeck, N.Y. meet. An attempt was made to test fly it the night before in stiff wind. The tailskid pounding on the take-off run tore the rudder hinges loose, and Nick chopped throttle in time to hold it earthbound. Lucky.

Nick Ziroli's

"S. E. 5"

The S.E.5, one of very best WWI's for flying.

FULL SIZE PLANS AVAILABLE THROUGH "MODEL PLAN SERVICE"

2" to the foot scale replica of the fighting warplane:

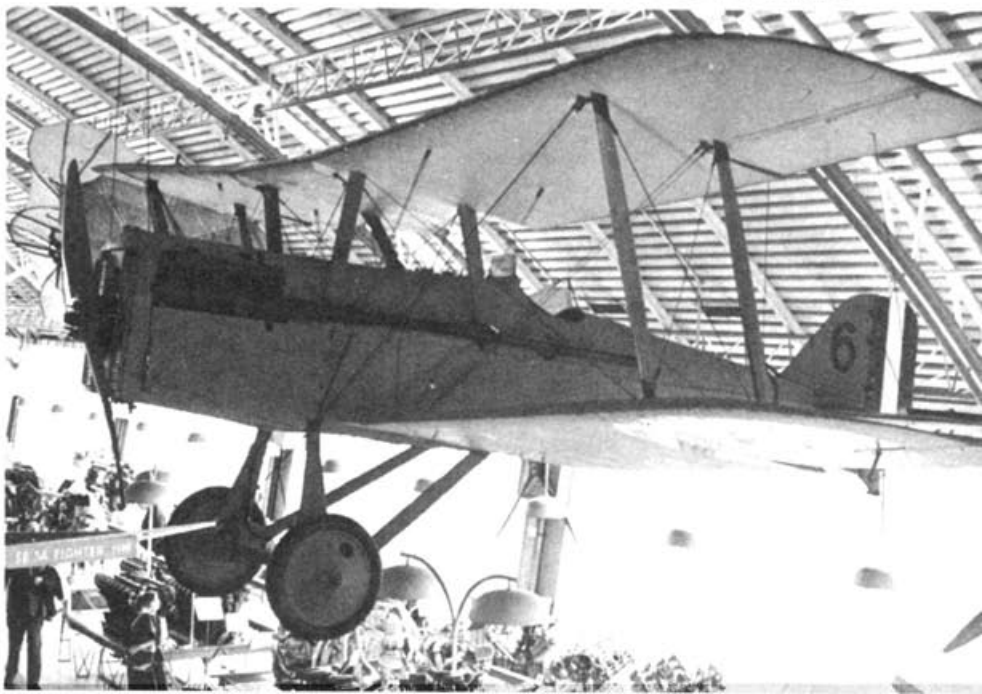
Logictrol in a famous old bird . . Museum photos for that extra detail

A rare batch of shots of an S.E.5.A, somewhat modified by private ownership over the years, but great for detailing non the less. As many shots included herewith as possible. S.E.5.A rests in a British museum. It differs slightly from Nick's fine S.E.5 version presented here.

♦ Ten years ago only the most foolhardy modeler would build an exact scale R.C. model and expect to fly it for very long. The unreliability and constant tuning required together with the lack of functions available today made a project such as this impractical. Those of us who have been down the road of the RK-61, ma. meter, portable radio batteries, key on the end of a lead, (remember) can really appreciate how good we have it today. The biggest problem these days is to remember to charge the batteries.

Reliability and precise proportional control now make scale modeling completely practical. This is especially true of WW-1 planes. These for the most part have a less than ideal nose moment arm. Any of the rotary engine powered planes usually have a very short nose. This makes it necessary to build everything behind the center of gravity as light as possible. Built up fuselages and tail surfaces are required here. The resulting structures are quite fragile and a crash of any consequence will usually result in a washout.

This is where our modern equipment



"S. E. 5"

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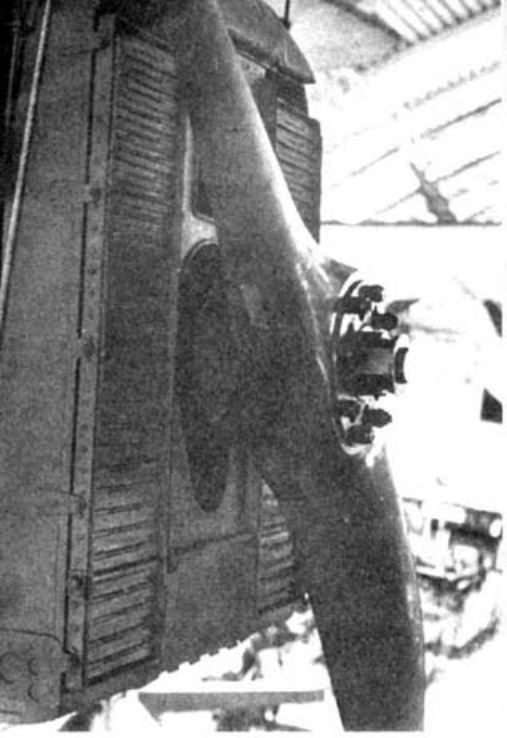
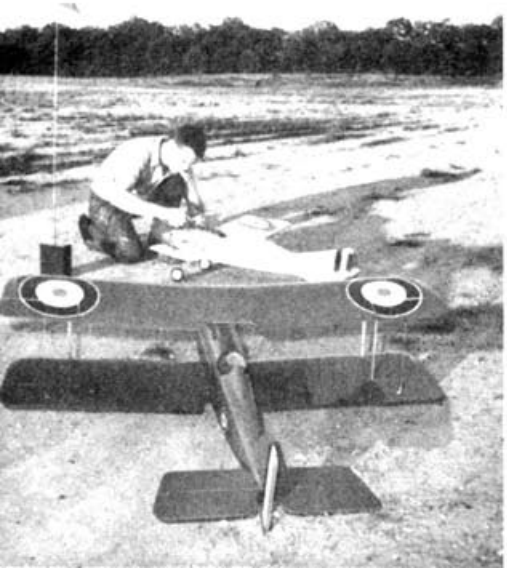


Rig it as you will, but less experienced flyers should not lavish too much time on the trifles.



enters the picture. With its very high reliability the weak link has now become the pilot. It is a fact, I am sure, that pilot error has become the major cause of crashes. An experienced pilot is a must.

Choosing a plane with an in-line or V type engine has its advantages. They have a longer nose that makes it easier to located the center of gravity. The engine can be fully cowled in a nose with much less frontal area.

The popularity and success that has been achieved with WW-1 scale models was clearly demonstrated at the Rhinebeck, N. Y. World War I R.C. Jamboree. This was an experiment that was a rousing success. Held at the aerodrome among full size WW-1 planes, the setting was perfect. I am sure that C.D. Dick Allen was surprised and pleased at the number of entrants that appeared. About 25 WW-1 R/C models were present and I believe 18 of them made official flights. Truly amazing was the performances of the models flown. Everything that flew, flew very well. There were but a few minor mishaps that came about mainly because of the rather short rough field. This made it difficult for some of the heavier models to get off. Among the planes were a number of Fokker D-7's, a Fokker and Sopwith Triplane, Nieuport 17 and 28, Bristol Bullet, my SE-5 and Morane Saulnier and others. All I believe, were flown with proportional equipment. One, a Fokker D-8 did a fine job with Galloping Ghost.

This was the first of what I hope will become an annual affair. If so it should be very popular with both contestant and spectator alike.

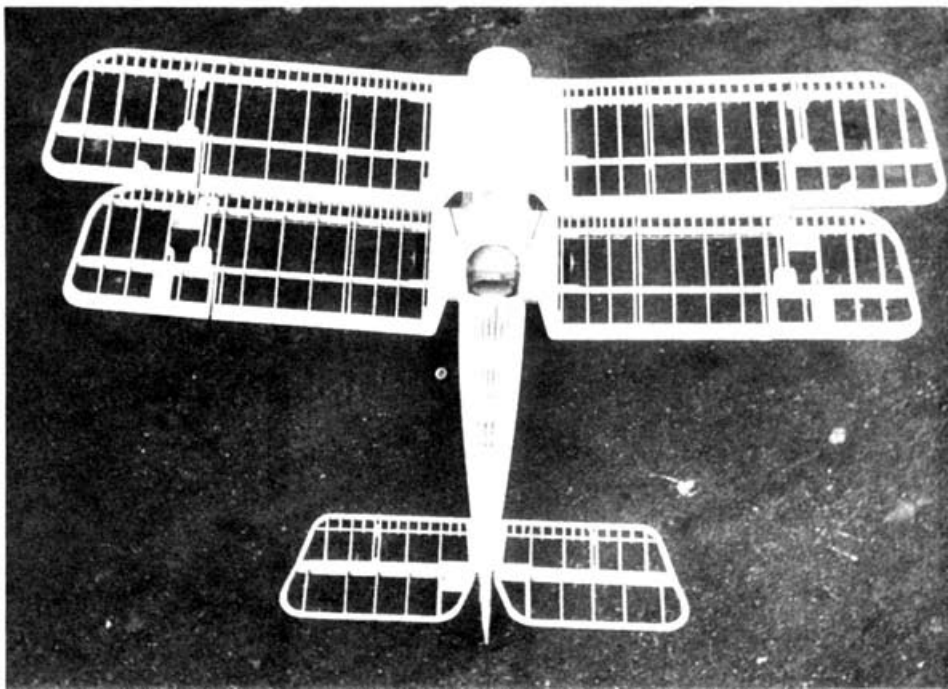
I built the SE-5 especially for the Rhinebeck contest. At 2"-1' scale the size is ideal. 53" wingspan and 1040 square inch wing area. At 8 lbs. a Merco .61 handles it with no problem at all.

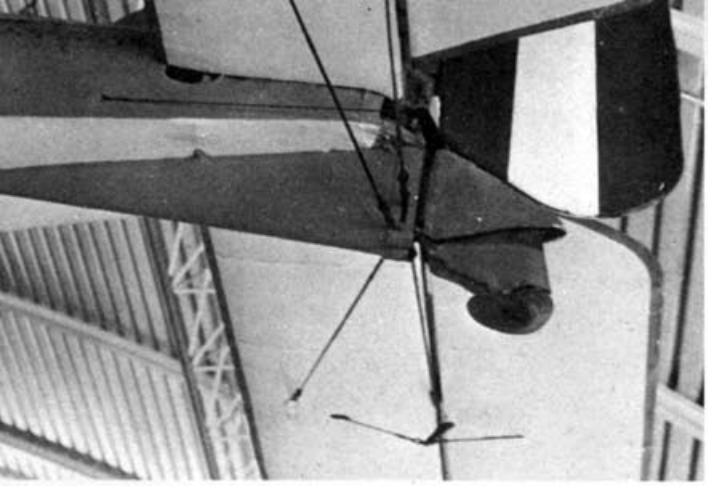
Unfortunately I did not have time to finish the SE-5 the way I wanted to, for want of time before the contest. There was no cockpit instrumentation, guns, rigging or engine detail. As a matter of fact the equipment was installed the night before the meet.

My official flight at Rhinebeck was the first flight on the plane. It was not necessary to retrim any surface on this flight. It literally flew off the board.

I can't overemphasize the importance of building as light as is practical. My tendency has always been to build for strength. I use hard wood where soft would do and rock hard where hard would be sufficient. This was finally realized with my Fokker D-7 (June 67 Flying Models). The finished weight of the D-7 was just under 10 lbs. With a ST.71 it flew great, but I did not realize it at the time that for anything less than AAA contest I could not use over a .61. A .61 was installed and the performance suffered considerably. Once in the air, it wasn't bad. The problem was to get it there and still get a decent engine run. An engine peaked out on the ground will usually start to sag after a few minutes in the air. If the engine wasn't peaked out for the take-off it was a problem to get it off and up to altitude. All the damage that has been

Nothing more appealing than scale-like frame. It must be kept light aft of C.G. to balance.





done to the D-7 has come about only by trying to get too much from an under powered airplane. If I had built it lighter it would not have been as strong, but I doubt that anything would have happened to it for lack of power. So again, build light.

Scale areas and moment arms were used on the SE-5. It lends itself very well for adaptation to an R/C model. All rig spacing and stringer location are also as on a real SE-5. The model shown was developed from Bob Holman's drawings. As further information was gathered it became apparent that Bob's drawings might really be an SE-5 and not the SE-5A that I want to build. The uneven rib spacing is the main difference. All rigs are the same distance apart on the SE-5A and they vary on the SE-5. Also the center-section cutouts are not the same. I may be wrong about this, but I can't find anything to contradict my findings. Color scheme and markings should be chosen accordingly. Profile Publications provide authentic information on both the SE-5 and SE-5A.

Construction is not difficult or too time consuming. The most difficult job is the wire bending required. This must

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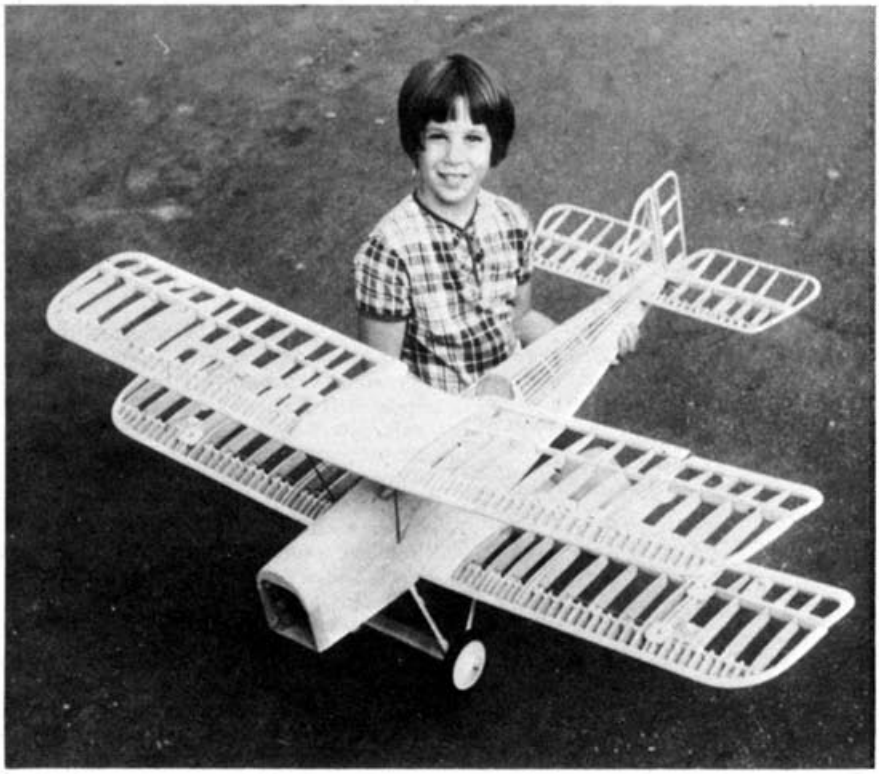
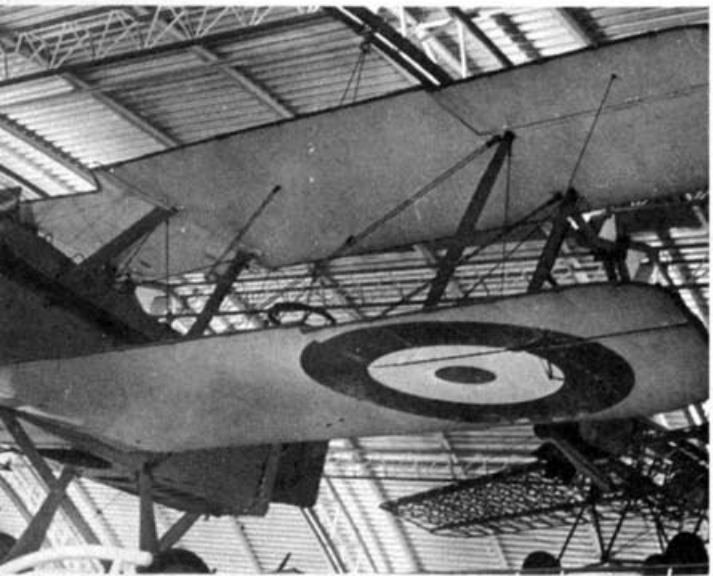
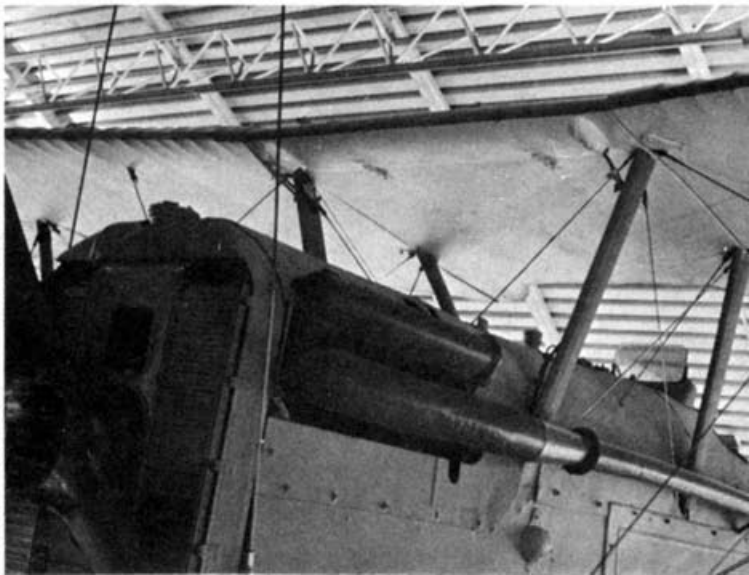


Nick's daughter Ann Marie angles the framework.





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be done accurately to obtain a well aligned model.

I am not going to go into a lengthy step by step description of assembly procedure. Since this is not a model for a novice, I think he should be discouraged from attempting a project of this type. Not that it is very difficult to build or fly, but one wrong command on take-off or landing can transform a lot of time and effort into popsicle sticks. Only when complete confidence has been gained on more conventional multi's should a model of this type be considered. By then, the building know-how will have been obtained that will make a detailed step by step procedure unnecessary.

Fuselage: Before beginning construction, plan your radio and servo installation. The fuselage is rather small and you may find some internal changes may be necessary to fit everything in. Logitrol equipment just made it with very little room to spare. I allowed ample room for a large fuel tank which I think is important. However, if a smaller tank will suffice, F-4 may be moved forward and the engine mounts made shorter to gain additional room.

Make up the two side assemblies. This should include the 1/16" ply doublers, 1/2" x 3/4" engine mounts, 1/4" sheet tail doublers and 3/16" x 1/4" stringers and uprights. Join the sides with F-2, F-3 and F-6. Add the 3/8" x 1/2" tail post post formers F-7 to F-10 and bottom crosspieces.

Make up the stabilizer framework and cement securely in place. This may be covered before it is installed if desired. Install rear deck stringers and 3/32" sheet bottom. Taper the stringers as necessary to fit at tail.

Bend the cabane struts to shape and install with grooved 3/8" x 1/2" hardwood blocks and epoxy. Notch the engine mounts to clear the struts. Wrap the .045 dia. strut brace wires in place with fine wire and solder to secure. Cut out, drill and form the top wing mounting plates. These are made from about .040" thick brass or steel. Solder in position so they are all parallel to each other.

Plank the top from F-3 to F-7 with 1/8" x 3/8" strips. Epoxy the grooved landing gear mounting blocks and wing mounting blocks in place. Drill 3/16" dowel holes in the front block before installating. Do not drill the wing mount block at this time.

Cut out engine plate and mount with 6-32 screws and T nuts. Add 1/2" blocks under the engine mounts. Epoxy 1/8" plywood radiator former between the sides against engine mounts. Cement the 1/8" hard sheet bottom in place.

Assemble the cowling framework in place on the fuselage. Remove and

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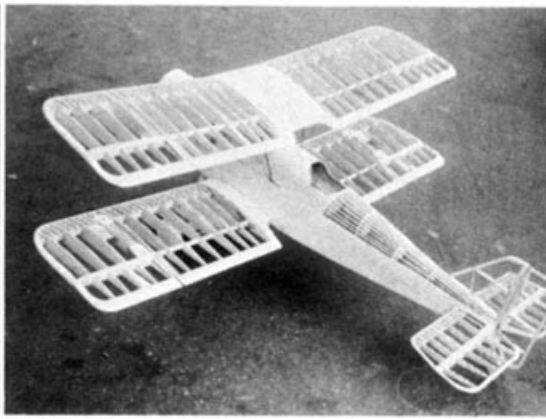

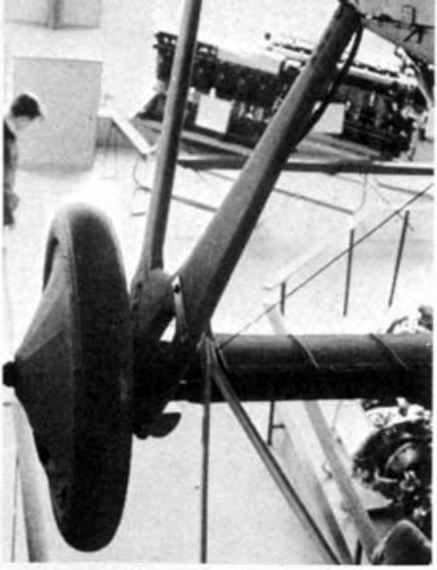

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plank with ⅛" x ⅜" strips. Add the ¾" radiator block and carve to shape. Sand, dope and cover the fuselage with Silron. Apply a couple of coats of clear dope. Carve the head rest to shape and cement to rear deck, then bend the landing gear legs to shape from 5/32" dia. wire. Bind the axle to the legs and solder. Next, epoxy the axle fairing and shock strut housings in place.

I might say that this type of landing gear is not the ideal set up. It is too rigid to offer any shock absorbing action, especially with the William Bros. Vintage wheels. These are too hard to be expected to absorb all the landing shock. Therefore, I might suggest, if your touchdowns aren't what they could be, the more conventional gear arrangement is advised. That is, without the solid axle, with the front leg bent out to form the axle. A dummy axle may be used for display and removed for fly-

While on the subject of the landing gear, if you haven't noticed already, the fact that the rear legs must be removed from the fuselage to mount or remove the lower wing. This may seem like a lot of bother but really does not take long. The only alternative I could see was to use a two piece lower wing. I have found this to be acceptable on smaller ½A models, but personally I don't like it on larger models. Besides a hatch must be provided somewhere and the wing opening is the logical location.

Fair the landing gear struts with 3/16" hard balsa and the cabane struts with ⅛" hard. Spiral wind the struts with ½" wide strips of silk epoxied in place. Make the mounting plate and install the landing gear with ⅜" #4 sheet metal screws. Drill a 1/16" pilot hole for each screw. These screws may be installed and removed many times without ruining their holding power. I have mounted a Super Tigre .71 with ¾" #6 sheet metal screws and have never had trouble with them vibrating loose. I can't say this for machine screws.

Tail Surfaces: The stabilizer has already been built and installed. Build the fin in place on the fuselage. Cement the ¼" rib over the covering on the deck followed by the tip and leading edge. Add the center rib and ⅛" sq. braces. Sand to shape and cover.

I have tried all types of hinges on many models. For built up structures as used here, Tatone hinges have been found to be ideal. I hinged all the movable surfaces before the covering was applied. The hinges are inserted into slots as usual but then separated on the inside and folded up and down against the spar. Epoxy bonds them providing a very secure hinge that is not likely to pull out. I substituted a longer hinge pin with a short 90 degree bend on one end. These are easily inserted or removed. The bent end is pushed into the spar to hold the pin in place. A drop of cement can be put over it as an additional anchor. I used this method on all control surfaces.

Build the rudder and elevators. Assemble the steerable tailskid and mount on the rudder. The elevators are joined with 3/32" dia. wire at the rear of the spars. This is necessary to clear the rudder post. I did not wish to weaken it with a large notch. Hinge as described above, cover and install.

Wings: The upper and lower panels from the center-section out are identical except for the control system in the lower wings and the interplane strut mounts. These outer panels are built first and then joined to the center-section as it is built.

Cut out the ribs and slip onto the spruce spars. Hand pick the spars carefully, checking them for good grain and lack of warps. Pin down on the plan and align ribs, then add the leading edge, trailing edge and tips. The false ribs were made oversize then installed after the panels were joined, and lead-

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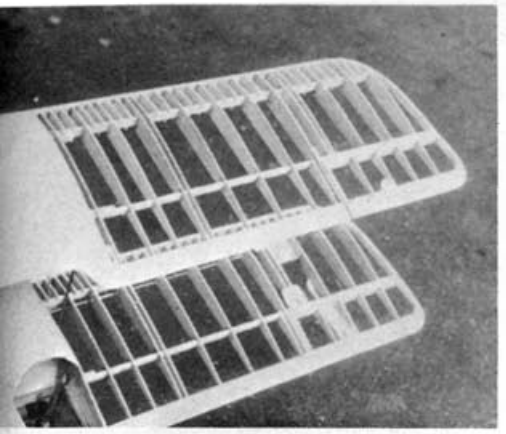
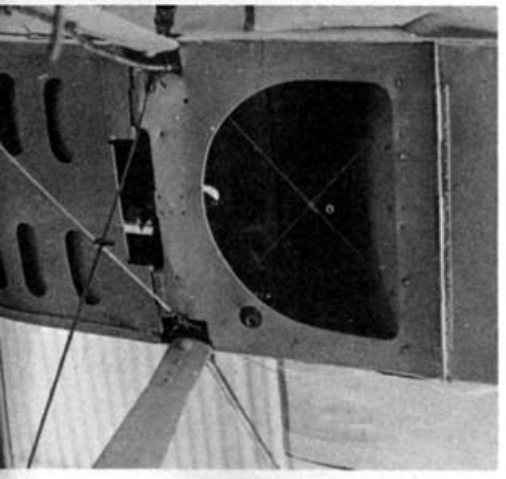
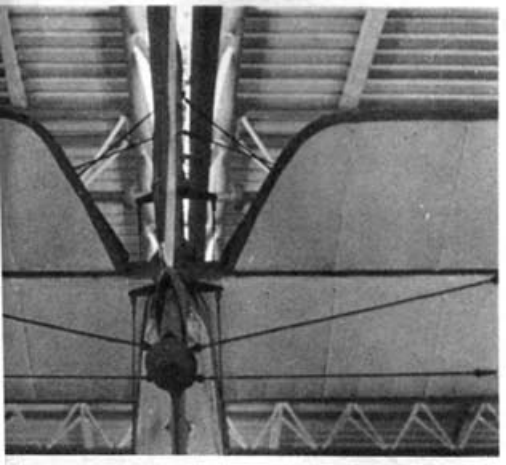
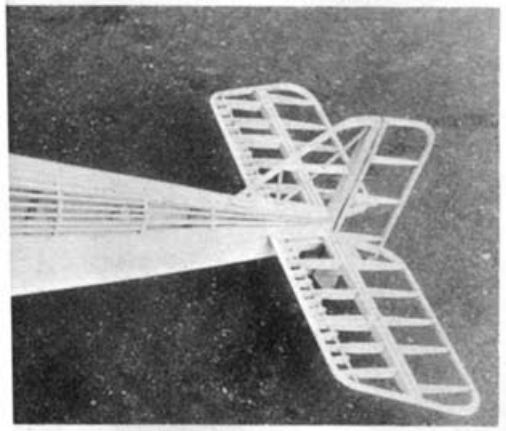


Durable, easy structure throughout. The S.E.5 stands up to active flying, but not for novice.





The tail. Light, yet sturdy, ample in area too.



ing edge shaped. A sanding block is used to bring them even with the main ribs.

To join the lower wing, pin the 3/32" bottom sheet over the plan and cement the spars and ribs to it. Cut the hardwood wing mount block to shape and drill screw holes. Cement in place along with the leading edge. Join the outer panels to this assembly, blocking up each tip 1¾". Frame out the aileron servo well. Cover the top surface from the front spar back.

The front dowels are located off the holes already provided in the fuselage. Make two 3/16" dia. dowels that are pointed and if inserted into the fuselage holes will protrude about 3/32". Accurately locate the wing and press against the pointed dowels. Remove and drill holes through the leading edge into the spar. Epoxy the dowels into position. Complete the sheeting. Install the aileron controls. Put the wing in position on the fuselage. Drill through the holes in the wing into the mounting block with a #21 drill. Remove and tap 10-32.

The top wing is joined in a similar manner, except the top sheeting is omitted until after the mounting nuts are installed. The holes are located from the cabane struts. Holes are drilled and 8-32 T nuts epoxied in. Cover the top section.

Make the ailerons and hinge as described earlier. Sand assemblies to shape after cementing false ribs in.

Cover the wings with Silron. Use a two yard length so no joint will be seen, especially on the top of the top wing.

Assemble the wings to the fuselage. Make up the interplane struts and mount with 2-56 screws. The ailerons are connected together with a long Qwik-Link. I used nylon brackets available on the Midwest accessory assortment to connect the Qwik-Links to.

Disassemble and finish painting in the scheme you desire. The insignia are masked and painted. I don't think decals are available as large as required here, but you might check the Finishing Touch Co. assortment to make sure. Add the details that pertain to the version you are depicting.

Install the engine tank and radio equipment. Again if you are not completely confident of your flying ability, let someone who is, make the first flight. Once your over the first flight jitters you will realize that the SE-5 is very easy to fly.

There is a lot of detail that can be put on to make this model a real winner. I don't consider mine completed yet but it will be ready for the upcoming contest season. Then it will have a chance to prove its ability. We were fortunate in obtaining a group of close-up detailed photos of one of the few museum S.E.5's still in existence, reproduced herewith for your further scale detailing.

Go get the Baron!