#357

Here is a nice, simple, easily built CL model of a ship that helped turn the tide in World War I. Build in as much detail as you'd need to compete with, or just paint it and fly the wings off it. Either way, it's a fun-Scale subject. ■ Dave and Clarence Haught

Simple and strong models live the longest. This one has been flying for 12 years (with no oil changes), and is still in top shape.

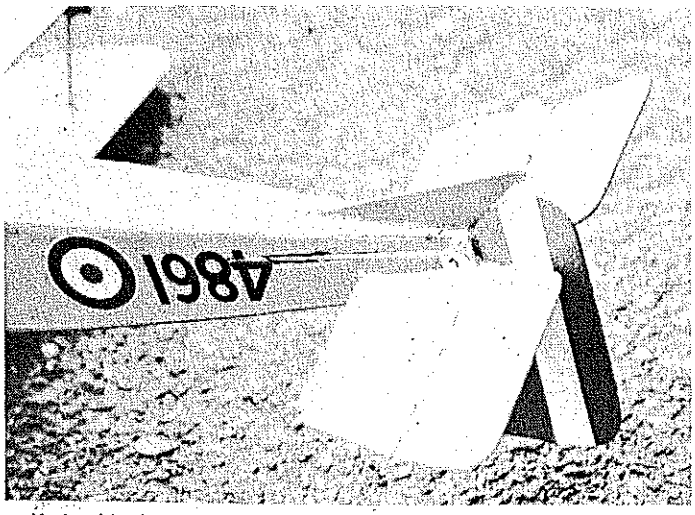
SE-5

THERE IS SOMETHING about the airplanes of World War I that keeps them alive. Aerodromes around the world sport a few of the vintage types that still impress the crowds. There is a distinct charm associated with the hum of the flying wires and the uncertain pulse of an old engine. The mention of World War I airplanes beings up images of Spads, Fokkers, Nieuports, and of course, the Sopwith Campel.

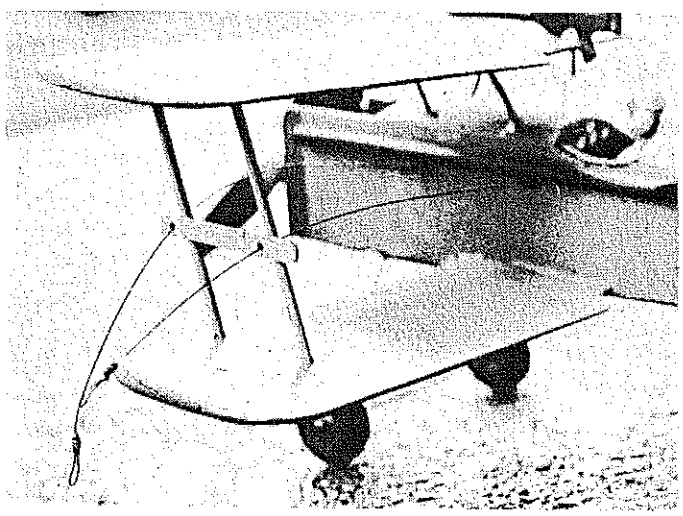
Not many are familiar with the contribution of the SE-5. The prototype rolled out of the Royal Aircraft Factory hangar in 1916. Initial performance was hindered by the lack of a suitable engine, but when it arrived, the SE-5 became a powerful adversary in the air. The boxy-but-clean lines gave it a stronger appearance that went beyond its looks. The SE-5 was stronger, faster, and smoother than the contemporary Spads and Nieuports. It made a considerable contribution to the winning of the air war—with over 2,700 surviving the war to see duty elsewhere.

Growing up among old biplanes, I have a minor infatuation with vintage airplanes. The model presented was built over 12 years ago, after I had managed to wear out my PT-19 trainer. I wanted a biplane, but it had to be rugged. After choosing the SE-5, my dad and I sat down with a stack of wood and built it.

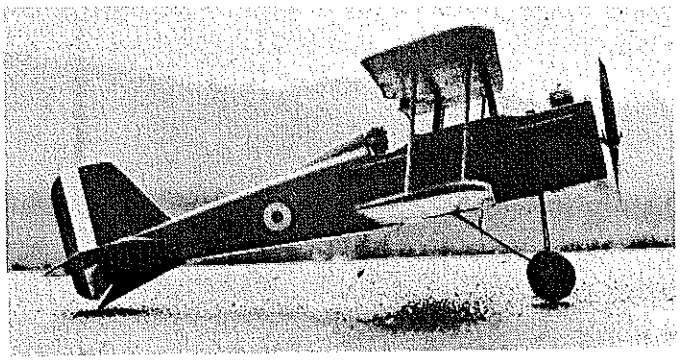
If you are interested in contest flying, the SE-5 is a good place to start. Find a copy of Kenneth Munson's book *Fighters 1914-19,* or *Profile Publication Number 1.* Both books give color schemes and details that can dress up the SE-5 to be competitive. ½A models have been showing up in Scale contests all over, including the



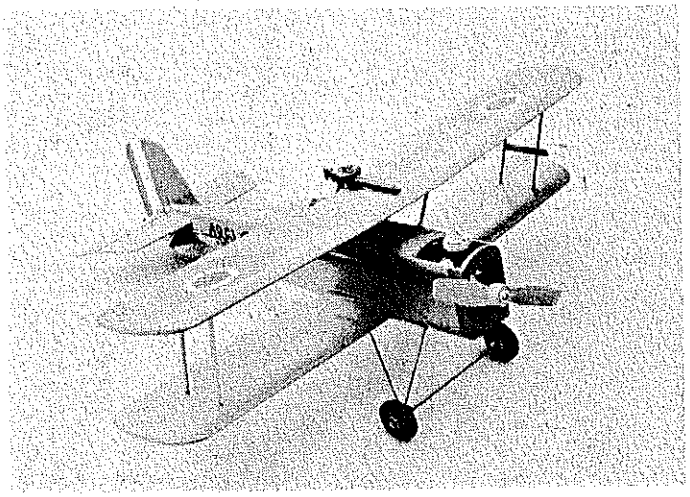
Underside view shows pushrod connection. Ply tail skid keeps grass and dirt out of the control horn. Check frequently for smooth movement.

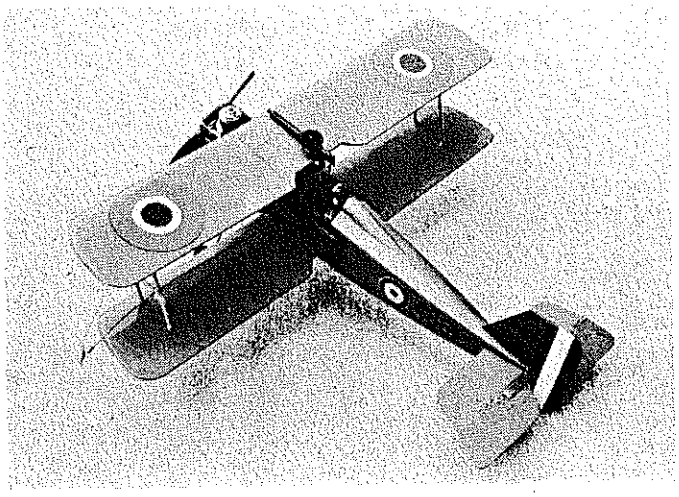


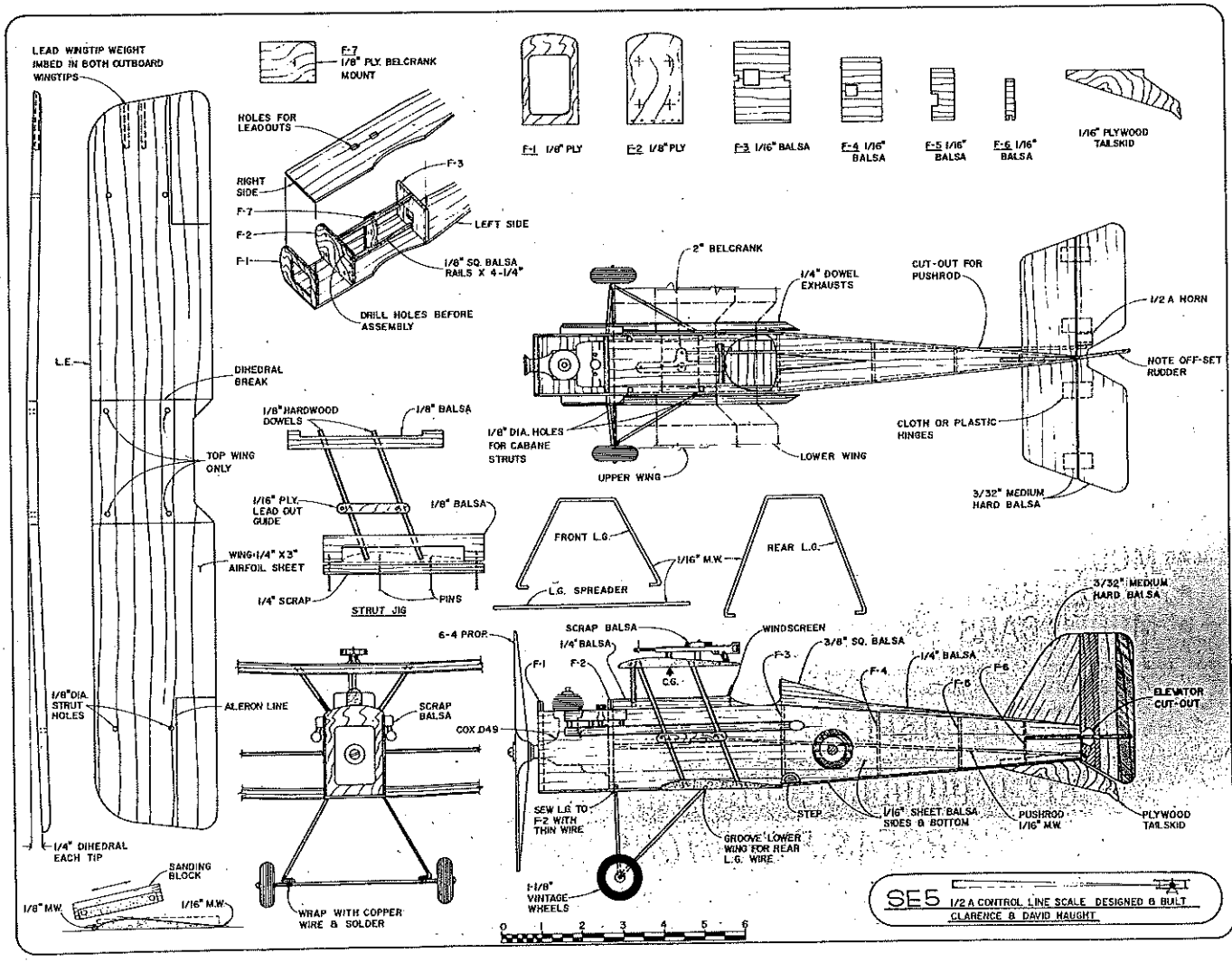
Steel wire leadouts and flying lines are recommended, since they are safer than Dacron. Note the leadout guide and hardwood dowel struts.



Reminiscent of the Dawn Patrol on a foggy French morning, the SE-5 shows off its distinctive profile. Boxy, clean and rugged, the model flies like its full-scale counterpart. Good moments make it smooth and responsive. Biplanes attract a lot of attention in a CL circle.







FULL-SIZE PLANS AVAILABLE . . . SEE PAGE 140

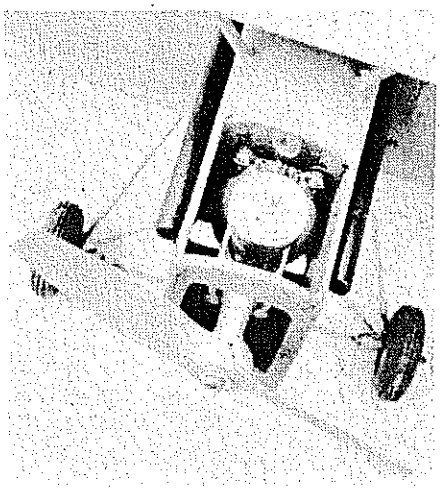
Nationals. It's easy to see why, when they are inexpensive to build and take up little space in the car.

Construction is kept as simple as possible to speed up the building time. Start by cutting out all the fuselage parts. Drill the holes for the landing gear wrappings, engine mount holes, and bellcrank mounting bolts. Follow the assembly sketch on the plan, taking time to ensure that all the formers are glued in square. Bend up the landing gear from music wire or welding rod. Install the bellcrank, leadouts, and landing gear. Wrap the landing gear to the firewall with fine copper wire, and epoxy well. The rear landing gear wire will be fitted into a notch in the bottom of the lower wing.

The bottom of the fuselage can now be planked. Note the direction of the grain of the planking. I prefer to do it this way because it adds more strength to the fuselage, and the planking will not sag between the formers. Check the control system for smooth operaton, and add the ¼ sheet top blocks. When dry, carve the blocks to shape, sand, and cut out the cockpit opening. The headrest can now be carved and added. Set the fuselage assembly aside.

Cut out and sand all the stabilizer and rudder parts. Glue the offset into the rudder and fin as shown on the plan. Hinge the stabilizer and elevator with cloth or plastic hinges. Make sure the hinges are free and smooth. When the glue has set, notch the fuselage to fit the stabilizer. Carefully align and glue the rudder and stabilizer assemblies in place. Add the elevator horn, and hook up the pushrod wire. Free up any binds that develop.

The wings are made from Sig's ¼-in. airfoiled



Open cowl lets you get at the fuel lines and needle valve. Note offset thrust washer.

planks. If they are not available, find a medium-soft sheet of ¼ x 3 in. balsa that is flat. Cut out both wings. Carve and sand them to the airfoil shape on the plan. The sketch on the plan shows a way to sand a fairly accurate and consistent airfoil shape. Place the wing on a flat surface, and put the wire up against the leading or trailing edge. Carve the balsa away down to the wire at the angle indicated. Sand the wing as shown. Repeat for the other edge, and finish-sand the airfoil. Drill two holes in each outboard wing tip as shown, and insert lead or solder to serve as wing tip weight. Cut the dihedral joints, and prop each wing tip up ¼ in. Use a slow-drying epoxy here to assure a good strong joint.

While the wings are drying, build the wing strut jigs. Make one with the leadout guide, and one without. The struts are made from ⅛ hardwood dowel, and the crosspieces from soft ⅛ balsa. The balsa crosspieces will be cut off after the wings are assembled. Drill the holes for the leadouts in the plywood guides, and glue the guide in place. By building the wing strut assemblies over the plan, the wings should be easy to align accurately.

Sand the wings to remove any rough spots caused by the glue. Stack them together, and drill the four holes for the outer wing struts. Separate the wings, and drill the four holes for the cabane struts in the upper wing. Carefully fit the bottom wing to the fuselage. Glue it in place, and let it dry. Cut a groove for the rear landing gear strut into the bottom wing and glue the wire into it. Cover the wire with a small piece of cloth reinforcing. Fit the strut assemblies to the wings, both upper and lower. This will involve trimming the holes to accept the angled dowels. When the struts fit the wings properly, glue them onto the bottom wing. Pin the jigs in place as shown on the plan. Add the glue to the top wing holes, and set the upper wing in place. Check to see if the wings are aligned from the top, front, and tips to ensure that they are parallel. Once you have it all aligned, let it sit overnight.

Fit the cabane struts into place from above. Trim away the balsa strut jigs, and give all the strut joints an extra coat of glue. Slip the leadouts through the guide, and bend the ends to suit your method.

Give the model five coats of clear dope, sanding it well between coats. The engine compartment should be given a few extra coats to preserve it from the fuel. Drill a ⅛-in. diameter hole in the

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amphibians. Its configuration makes for a very compact Class I model, even with a 200 square inch wing.

The HPS-1 was an experimental fighter built by Handley Page in 1923. No more than three were built, interest in the design being rather low. The full-span flaps and leading edge slats gave it good landing characteristics in spite of a relatively high wing loading. The flaps were what drew me to the design in the first place. Built for Class II at about 210 square inches of wing area, the 4-in. wide, 6-in. high fuselage gives ample room for fuel tank and control system.

I'll leave the remaining aircraft for you to identify. The first reader to correctly name the plane will receive a year's free membership in the Navy Carrier Society. I'll publish the name of the winner in my next column if I get a correct response in time to meet my deadline. Send your entries directly to me.

Richard L. Perry, 416 Woodhill Dr., Goldsboro, NC 27530.

SE-5/Haught

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right rear corner of the engine compartment floor to serve as an oil drain hole.

Choose a color scheme, and paint the SE-5 to match. Common colors were olive drab upper surfaces and fuselage, wiht light tan undersides. After the paint has cured a few days, start adding the details. Make the exhaust stacks from ¼-in. dowels and the manifolds from scrap balsa. The machine gun can be made from aluminum tube and scrap balsa. Paint flat black, and epoxy well in place. Cut the windscreen from clear plastic, and epoxy it in place. A pilot adds a lot to the realism of the model in flight; you can carve one

up from foam or wood, or salvage one from a kit.

Mount the wheels, engine and propeller, and balance the model as indicated on the plan. This is an important step; don't skip it. Add weight as required to get it to balance. Check the model for any warps. Steam will work to remove slight warps from balsa sheet wings. Hold the wing flat, and pass it over the steam. Keep holding the wing flat until the wood cools to room temperature, and the warp should come out. Repeat if necesary. Adding out-thrust to the engine may also help to make the first flight successful.

I suggest that you get a set of 35-ft. steel lines for flying the SE-5. ½A models fly so much better on steel lines than on dacron, and they last much longer too. Pick a calm day to test fly the SE-5, and be ready to spend a lot of time flying it. The original model has been flown to exhaustion, having been flown weekly for several years. I hope you will enjoy it as much as I have.

Show & Tell/Shepherd

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the other hand, crowd control is a must! The space limitations and unpredictable flight patterns of Indoor models means that the audience gets strict instructions on how to handle a model that lands near them. In 36 shows, only three models have ever been damaged, and only one needed extensive repair. I think that's an excellent record.

I believe that our hobby desperately needs youngsters like these as tomorrow's builders and competitors. Unless we encourage them and give them the attention they deserve, there may be no tomorrow for modeling! I believe that the complex and glamorous models that we advanced modelers are so anxious to show off discourage many youthful builders, especially if they attempt one before success is possible. In my lectures I have tried to return some dignity and glamour to simple, fun-flying models. To go beyond the "show and tell" stage, local modelers, teachers, and parents have to follow up and capture that enthusiasm while it is there.

I hope to continue these programs in other nearby towns and cities, and to encourage other modelers to begin programs similar to mine. If anyone would like information about how to start such a program, I'll be glad to assist in any way possible. *Jesse F. Shepherd, 2713 Summit View, Bedford, TX 76021.*

FF Duration/Meuser

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bination of blade shape and pitch distribution that was supposed to give a blade-loading distribution close to the ideal one. Other combinations, presumably, would have done as well. For example, a helical pitch, and a blade shape designed to match it, might have performed as well, but I have no idea what the blade shape would have had to be; it might be a bit grotesque.

Many designers of outstanding models have used the "Schwartzbach pitch distribution," but their own blade shape. Of course, that blows the whole thing; it's the *combination* that counts. But if their blade shape isn't too far off Schwartzbach's, they're probably not too bad off. It takes rather gross changes in blade shape to produce mild changes in blade-loading distribution, and such changes in load distribution have a proportionally smaller effect on performance.

Does the fact that these *pseudo*-Schwartzbach props drive models that perform exceedingly well prove that they are indeed superior props?

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