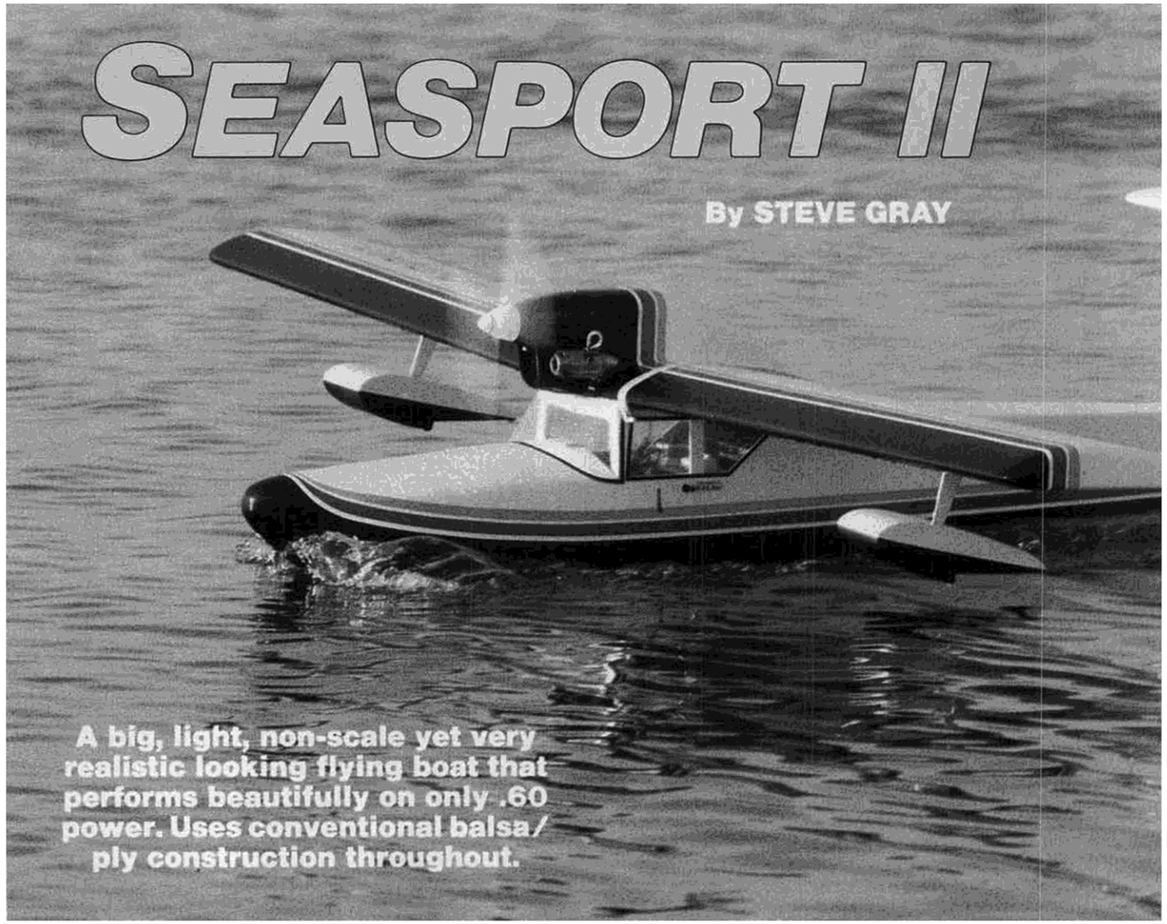
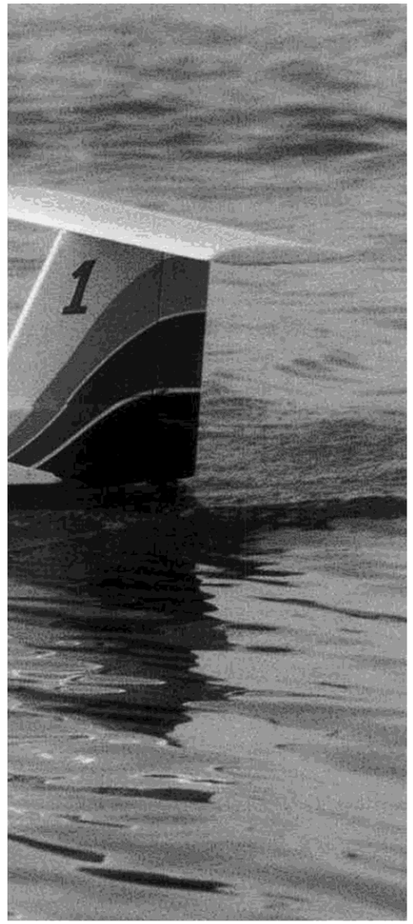
# SEASPORT II

By STEVE GRAY



**A big, light, non-scale yet very realistic looking flying boat that performs beautifully on only .60 power. Uses conventional balsa/ ply construction throughout.**

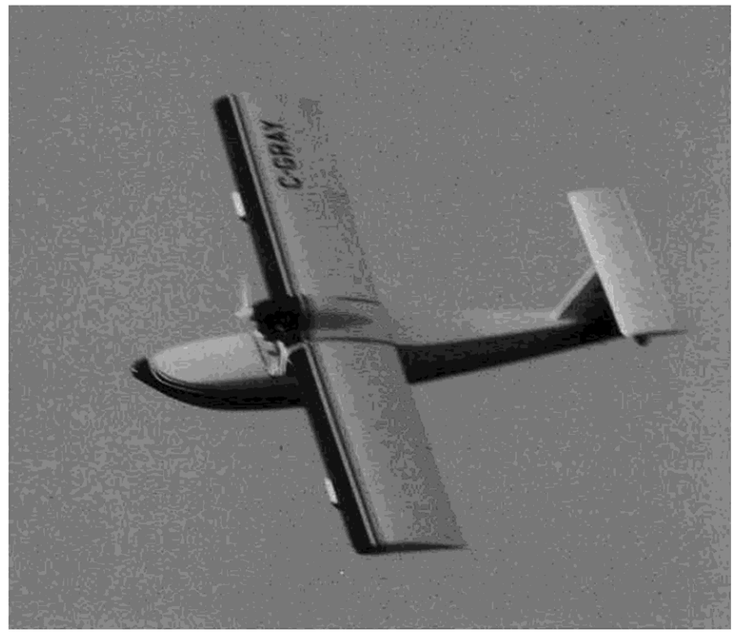

• The Seasport II was designed as a result of a burning desire I had to have a large flying boat for sport flying at the local water flying site. The design criteria were: something with a large wing area so it would float along slowly as it flew, a wide hull so that it would ride up on the water nicely and to utilize a Supertigre .60 Bluehead engine I had which always had been a most reliable powerplant.

I decided to make the model quite large so as to fly realistically and provide lots of buoyancy for good water handling. In going ahead with my working drawing I tried also to work in some pleasing lines, which meant cowling in and inverting the engine to provide a nice high thrust line, and utilizing a T-tail configuration. I wanted to keep the design realistic so as to make it believable as an aircraft, and I also wanted to occasionally fly from land, so I made provision for an add-on landing gear.

**Left: our author is not a small guy, that just happens to be a lot of airplane he's holding. Steve is a noted R/C scale modeler from Canada, so it's no surprise that his non-scale sport models retain a certain full-size look. The Seasport II lends itself well to "personalized" design changes, such as going to twin engines, altering fuselage contours and/or cowling shape, etc.**

Once the plans were drawn I was anxious to get started. Those who looked at them however, could not believe that a .60 would fly the large model. Being stubborn, I decided to prove that it would. I maintained that the size of the model was not as important as the wing loading, and things looked good from this point of view. The model was constructed in a matter of weeks and as it turned out, I proved my point. The big plane turned out to be a real honey on the water and in the air. It will loop from level flight, do nice aileron rolls, and the touch-and-goes from a placid lake are simply spectacular. All who have seen this model fly have been impressed with its performance. After many requests to make plans available, I have finally forced myself to sit down and write this construction article. Four models have been built that I know of to date, all of which have successfully flown, one of them as a twin engine version with two S.T. .29s for power.

There is a lot of wood in this plane, so pick it carefully for strength and lightness. Use cyano glue or waterproof glue of some sort for construction for obvious reasons. Build the tail as light as possible so that a minimum of nose weight will be required to get the balance point right.




**FUSELAGE CONSTRUCTION**

The fuselage is built by cutting out and joining several pieces of light 1/8 balsa to make the two sides. Glue to the insides of the sides the landing gear mounts (if required), the 1/8 balsa doubler behind the wings, the 1/4 x 1/8 strips along the top and bottom of the rear portion of the sides, the 1/8 balsa doublers along the bottom of the forward fuselage, and the 1/4 x 1/2 balsa strips along the front top section of the fuselage. Be sure to position this 1/4 x 1/2 strip up high enough so that half of it protrudes above the fuselage side. Also, glue in the 1/8 ply doubler at the front of the cabin and the 1/8 x 1/2 spruce cabin top rail. Cut the slot for the landing gear and glue in the 1/8 ply doubler around it, if you will be building a landing gear.

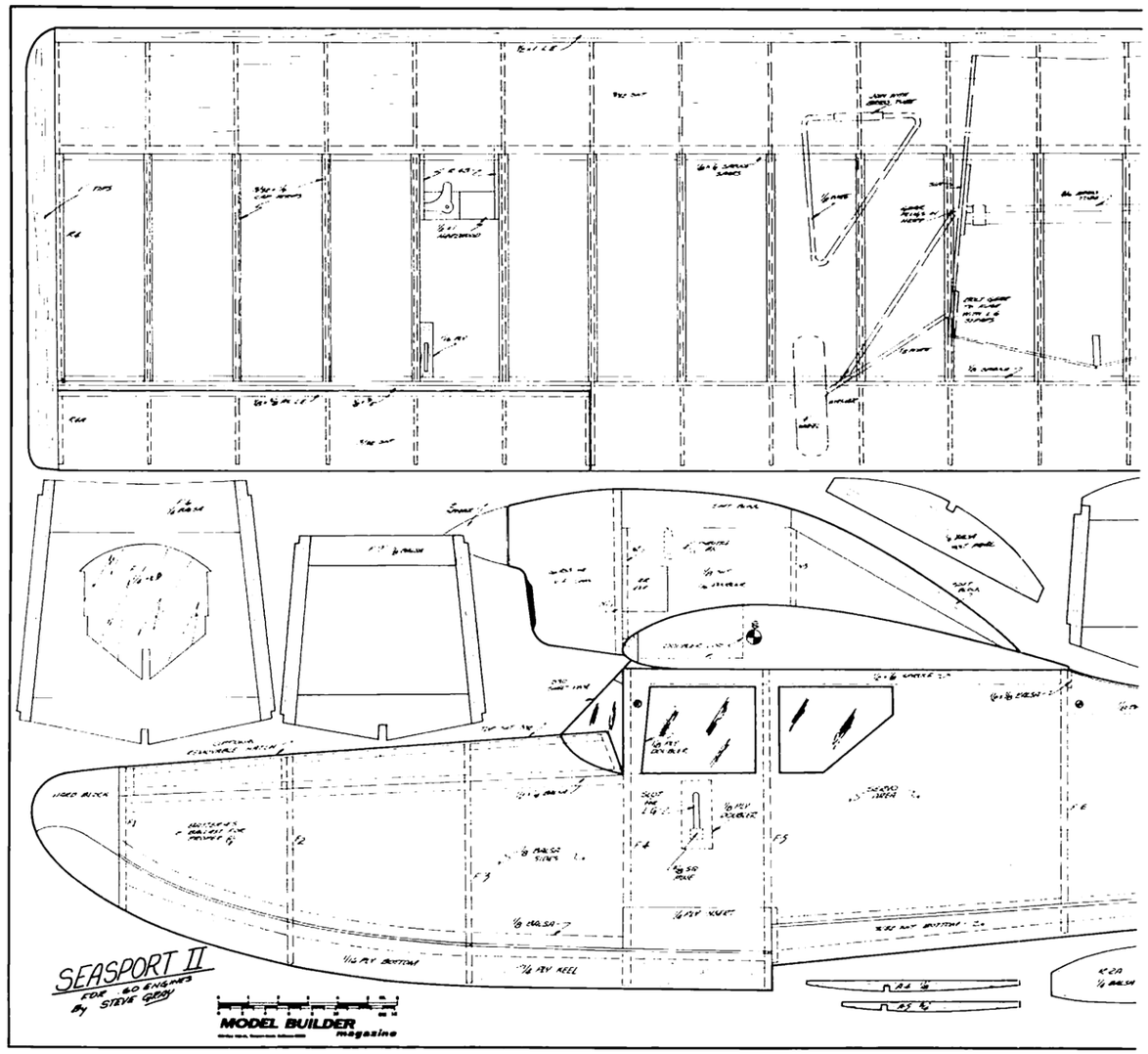
Once the sides are built, they may be joined at the tail with F-9. Build all the other fuselage formers at this time and when all are dry begin installing them as follows: Install F-4, F-5 and F-6. Keep things square as you do this. After this assembly is dry, it will be time for the tricky part, bending the forward fuselage around F-2 and F-3 to F-1. This requires quite a bend, so take your time and be careful. Epoxy in F-1 when you have everything lined up and clamped. After things have dried, fill in the rest of the formers but don't glue the tail together. This is done after the fin is built.

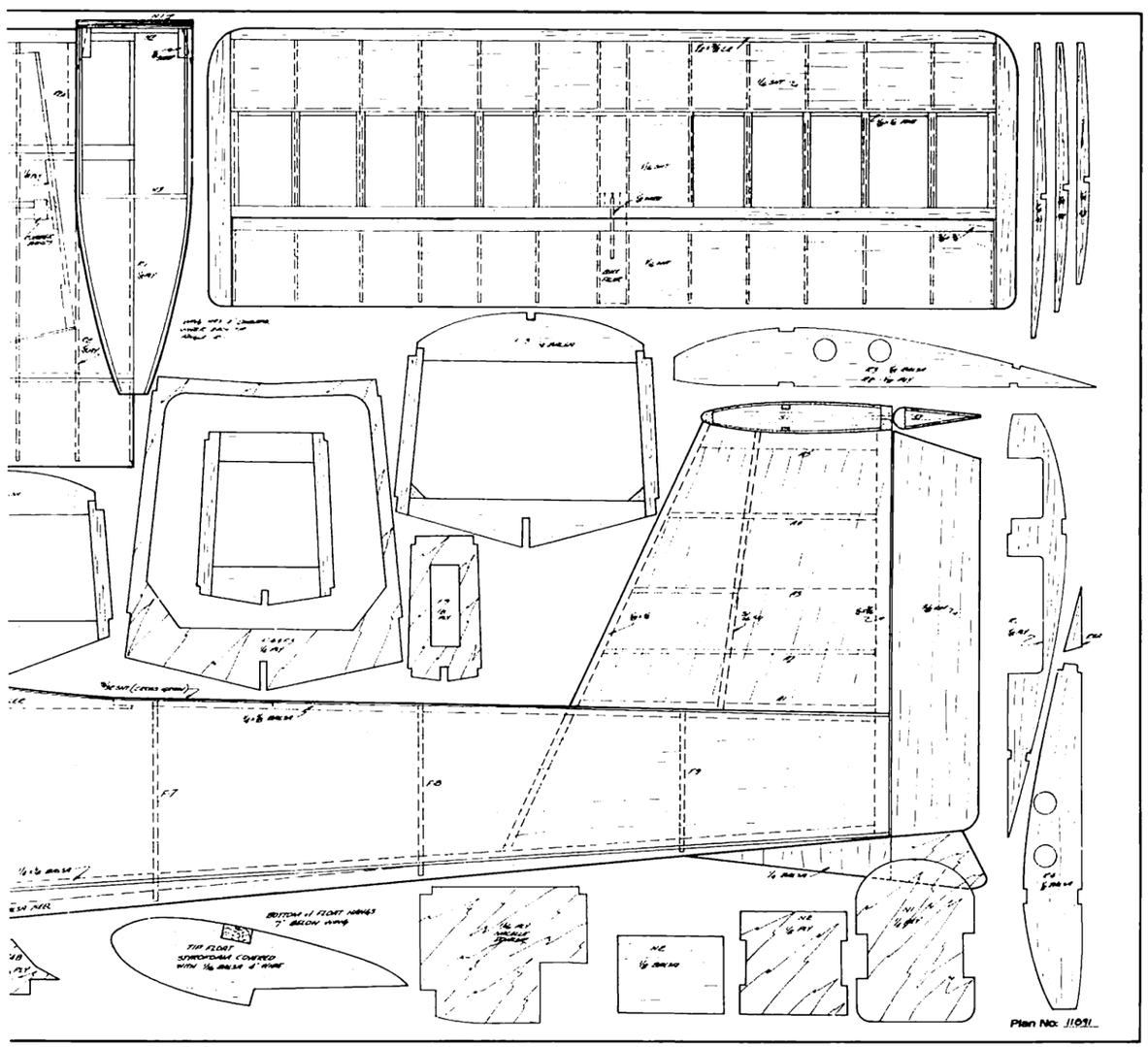
Now lay in the 1/4-inch ply keel in the front and the 1/4 x 1/2-inch keel at the rear of the fuselage. The bottom may now be covered with 1/16 ply at the front and 3/32 cross grain balsa at the rear. Decide if you will want an access hatch at the front of the fuselage. While this may be desirable, it isn't necessary as there is room for most arms to reach through the cabin into the nose. If you do, build up the hatch or even use solid block. There is no problem with weight up here. Lay in the 1/4 sq. top stringer and instrument panel. Plank the top with 3/32 balsa from the instrument panel forward. The rear of the top of the fuselage can also be sheeted with 3/32 cross grain balsa (lightweight). Carve and add the nose block and glue on the 1/4-inch balsa sub fin.

Sand everything to a smooth contour.

**TAIL CONSTRUCTION**

The fin is built in two halves. The left half is built directly on the plan complete with sheeting to keep things flat. Once dry you can remove it from the plan and build




The prototype Seasport II is fitted with a removable landing gear for dry-land flying. This is detailed on the plan, but dyed-in-the-wool seaplane fliers may want to leave the gear off altogether.

## FULL-SIZE PLANS AVAILABLE—SEE PAGE 106

onto it the right side. You will want to plan and install the elevator linkage within the fin before you completely finish sheeting the right side. A flexible nyrod can be installed to take care of this. When complete, glue the fin to the top of the fuselage, inserting and gluing in the tail post fin leading edge. These two structures key into the fuselage to provide strength for the high tail. The rudder is simply cut from some soft 3/8-inch balsa and sanded to shape.

The stabilizer is built on the plan by pinning down the bottom 1/8 x 1/4 spar and 3/8 x 7/8 trailing edge. The 1/2 x 3/8 L.E. is blocked up 1/8-inch and also pinned to the plan. Glue in all the stab ribs and the top spar. When dry, glue on the 1/16 sheeting and cap strips. Remove from the plan when this is dry and sheet and cap the other side. Add the 3/4-inch balsa tips and sand everything to shape.

To build the elevator, lay down a piece of 1/16 sheet 2-1/2 x 26 inches and glue onto it the small triangular elevator ribs and filler block in the center. Add another 2-1/2 x 26-inch x 1/16 sheet to the top and let dry. Then remove the elevator, sand the front flat and glue on the leading edge. Carve to shape, final sand and you have your elevator and stabilizer completed. You can wait to hinge things and glue the stab to the fin until after things are covered. I used Robart steel pin hinge points for all tail surface hinging. They are easy to use and look good. You can file notches in the leading edge of the elevator and rudder so that the hinge line will be set in a bit and the gap will be closed.

### WING CONSTRUCTION

The wing is of standard "D" tube construction and is quite thick so it is extremely

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strong. Cut out all the ribs required and pin down to the plan the 3/32 balsa leading edge and trailing edge pieces. Add to the plan the cap strips and center section sheeting. Glue on top of this the 1/8 x 1/2 spruce lower front spar and the 1/8 x 1/4 lower rear spar. The ribs can now be glued onto the spars and sheeting. When all the ribs are installed, pull up the leading edge sheeting to meet the contour of the front part of the ribs. Let the assembly dry. Do not glue on the leading edge yet.

Glue on top the 1/8 x 1/2 spruce top forward spar and the 1/8 x 1/4 rear top spar. Now lay on the 3/32 leading edge and the trailing edge sheeting, center section sheeting and cap strips. When all is dry, remove the wing from the plan and sand the front straight. Glue on the 1/2 x 1-inch L.E. Add the tip blocks, build the ailerons as you did the elevator and sand everything to shape. Install the aileron linkage and hardwood float mounts.

There is no dihedral brace. The wing is quite thick and therefore needs only to be butt-glued together with epoxy. Fiberglassing the joint will provide the necessary strength. Once the wing is joined this way, making sure of the 2-inch dihedral under each tip, the engine nacelle can be built.

Start the nacelle by gluing together N-1 and N-2. Cut out the nacelle sides and doublers and glue these together as well. Contact cement works well for this. Glue the firewall to the sides and add N-3. Install some 1/4-inch scrap balsa behind the firewall to allow for carving out the air exit channels. Carve out these channels to allow cooling air to exit from the cowl. Pull the nacelle sides together at the rear and glue on the top blocks. Make the glue joint temporary for the front top block as we will want to make this removable for access to the tank. Sand the nacelle to shape and glue it to the top of the wing with the firewall against the leading edge. Epoxy this well. Install the fuel tank, radial engine mount and fuel lines. Install an aileron bellcrank inside the nacelle to operate the throttle. The cowling was vacuum formed over a pine plug carved by hand. Fiberglass would also make a fine cowl. The cowl is held in place by several #2 screws.

**LANDING GEAR AND FLOATS**

The tip floats are made by hot wire cutting styrofoam blanks and covering them with 1/16 balsa. A hardwood block is imbedded in the top of the float to accept the 5/32 wire mounting struts. The parts for the main gear are bent to shape and are bound and soldered together. The drawing shows the assembly in detail. You purists, however, may not even bother with this step.

**FINISHING**

The model was finished by covering it entirely with Solartex. It was then sprayed with coats of clear butyrate dope to seal the joints and conceal the fabric weave. Follow this with two coats cf color dope and a final coat of clear and you have a fuel proof, waterproof, puncture resistant, good looking finish. Other coverings can be used such as Sig Koverall etc., but it is important to seal them well with dope or similar to prevent edges from coming up and leaks appearing. Do not use Mono-Kote or other films for this reason.

Install your radio and batteries as far forward as possible to prevent tail heaviness.

**FLYING**

Be sure the model balances as shown on the plan; I don't care how much ballast in the nose is required. My plane came out at about 12 lbs. ready to go with about 16 oz. of ballast and a 1200mAH battery pack in the nose. When taking off from water, head into the wind, apply full power and some up elevator to keep the nose up. As soon as the model starts forward, neutralize the elevator and allow the model to build up speed. Use the rudder to keep straight and the ailerons to keep both floats out of the water. When you're skimming along on the step give a little up and you will gently lift off pretty as can be. The model has good slow speed characteristics and flies on the wing. A good .60 has ample power and a .75 has lots. Flying on land is just like flying any other taildragger.

Flying off the water is a real thrill for me and I know it will be for you if you build the Seasport. •