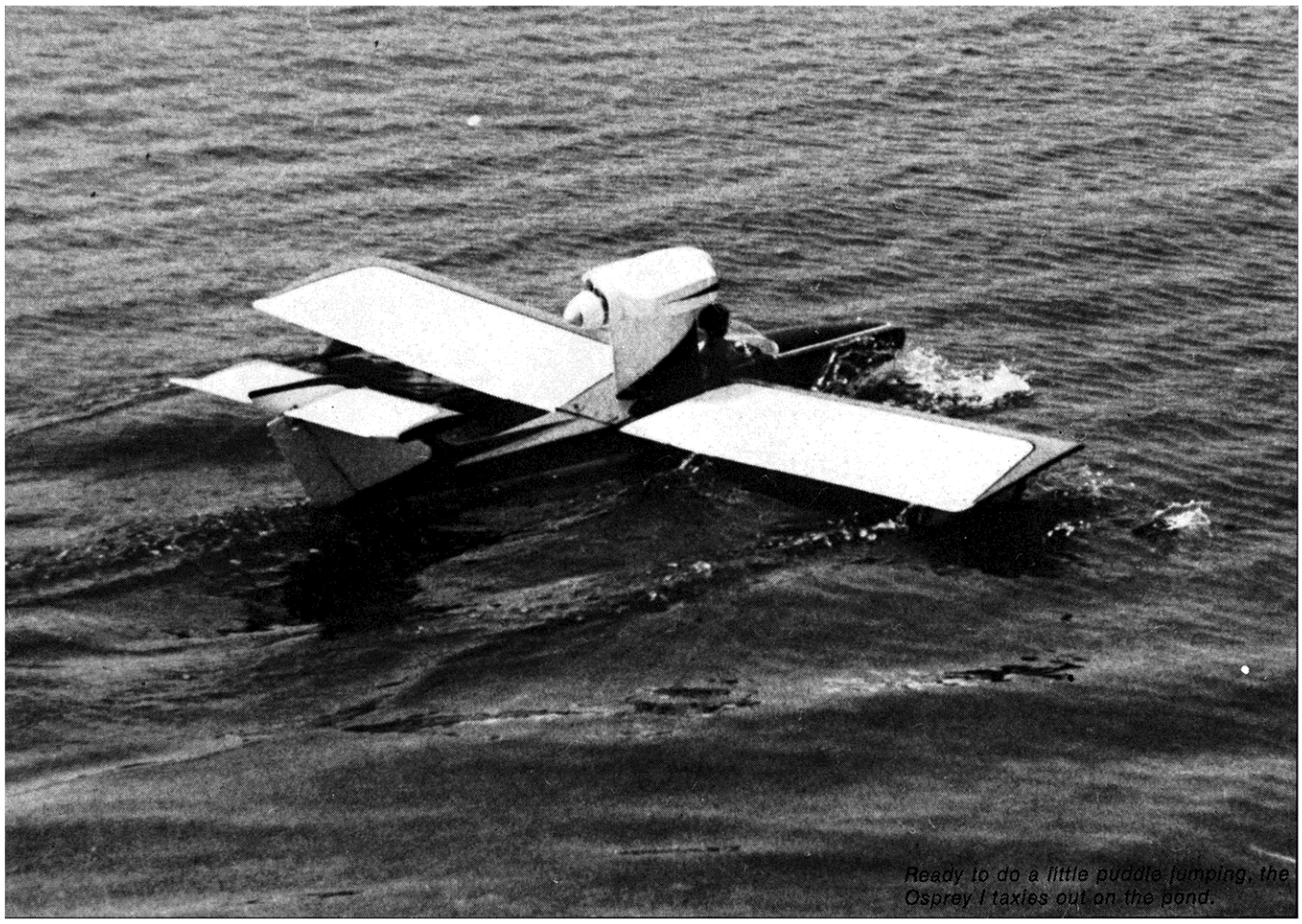


Ready to do a little puddle jumping, the Osprey I taxies out on the pond.

OSPREY 1

For a change of pace, try some scale modeling on the wet and wild side.

By Wally Zober

Photos by the author

If you live on Long Island and fly R/C airplanes, you are eventually going to get involved in R/C seaplane flying. On this big narrow sand bar, called Long Island, we have some of the greatest lakes. In the middle of Long Island, we have Lake Ronkonkoma. It has about eighty or ninety acres of fresh water for seaplane operations. A few miles east, we have Artist Lake which is about fifty acres of fresh water; but is predominantly used by R/C boaters. Out at the east end south fork we have Watermill Pond, which is well over 100 acres of fresh water. Now, if you are not afraid of flying off salt water, which I do occasionally, you will find dozens of bays and quiet inlets along the coast.

Eighteen years ago, I started the first AMA sanctioned R/C seaplane contest at Watermill Pond. It was a great hit and has been successful for the past eighteen years. After about nine years, I moved the contest westward to Lake Ronkonkoma to make it easier for out of town contestants to get to.

I've been flying seaplanes for many years using floats on Pattern ships, Quickie 500s, fun-type aircraft, etc. I always wanted a flying boat. They seem to handle better on the water and in the air. A good example of these types of flying boats are Henry Struck's "Sea Kat," or Don McGovern's "Custom Privateer." The only thing I found wrong with these airplanes was that they were not scale. I'm at that stage in my model building life where I want my models to look like real airplanes.

One day I was going through some old magazines. I came across the 1970 Fall issue of *Sport Flying* magazine, and on the cover was a picture of a single seat pusher type flying boat, the "Osprey I." It looked just like an R/C model airplane taking off of a pond. The designer, George Pereira, had the same motivation I had to build a flying boat.

The capitol city of California is situated in a large central river basin

The author and his handiwork. Pusher engine is best started with electric starter.

of the state at the junction of two major waterways, the American and Sacramento Rivers, which head downstream to San Francisco Bay Delta country. There are a maze of sloughs, ponds, creeks and calm rivers—just right for seaplane flying. That's George Pereira's country, and the birthplace of the Osprey.

Well, I wrote a check out for the information package. Two weeks later my package arrived. I opened it and found all the information I needed to design a sport scale model of this flying boat. I cleaned off my drafting board and started laying out the Osprey I.

After the plans were drawn up, I ran off some prints and began cutting out parts. It took me about two months to build and finish the model (I'm a slow builder). The model looked great and I was quite pleased at the way it turned out. Now the proof of the pudding is in the tasting, and the proof of a good design is how it performs. Well! I made arrangements for the test flight.

I selected Watermill Pond as the place for the first flight and I borrowed a boat for retrieving. I asked my flying buddy, Sal Izzo, to give me a hand. He's our local expert for tuning model engines. We got out to Watermill Pond at 10:00 a.m. Saturday morning. I took all the static pictures I needed, Sal made some final adjustments on the Webra .40, and we were ready to go!

The Osprey I came in a little on the heavy side (8½ lbs.), with 693 sq. inches of wing area. I knew it would fly, but would it get off the water? If I were to say this airplane flew perfectly on the first flight, that would be untrue, as I ran into the same problem that the real airplane had. In the water it handled beautifully; however, in the air it had a tendency to porpoise. At full throttle the nose would pitch down and, at low throttle, the tail would drop. Also, my Webra Black Head .40 engine was new and not broken in as yet, and it was not putting out the way it should. Osprey was flying on the back side of the power curve and was a bit hard to handle.

While it was in the air, I let my friend Tom fly it and he stalled it on a downwind turn. The model went into a spin and dove into the water (minor damage). Water can be forgiving! I took the plane home, made the necessary repairs and added more positive incidence to the engine. This helped to dampen the porpoising effect; however, you have to set this airplane up slightly differently for takeoff, straight flight and landing. You can do this with the trim tabs. On takeoff use *full* up trim, then straight and level flight at cruise speed have neutral trim, while landing requires three-quarters of the down trim. Now, if you have an emergency situation where you have to go around and must hit full throttle, then be ready to add up trim. If you don't, you may have a hairy moment or two.

CONSTRUCTION

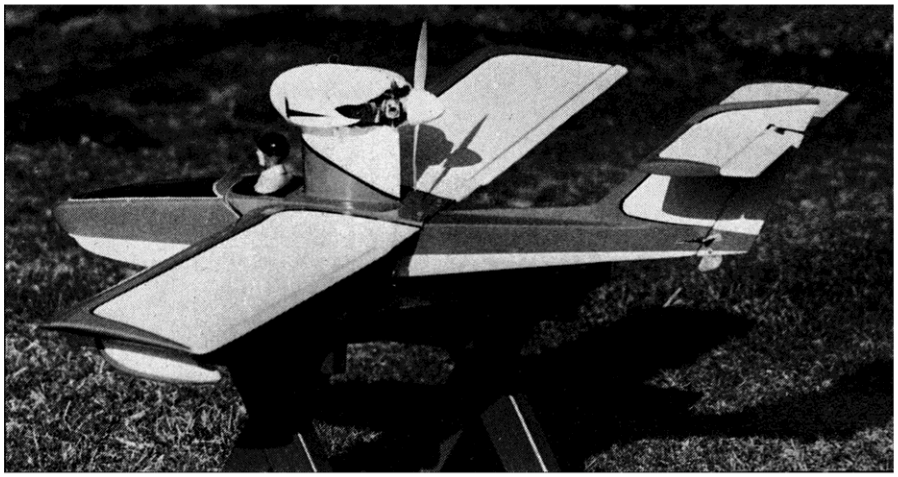
For those of you who have never scratchbuilt a model from plans, I have a suggestion for you. Kit the model first. That is, cut out all of the wing ribs, bulkheads, slab sides, etc. When you have done this, you can start building the model. I have a good reason for doing this. If you are like me and you are not too crazy about cutting out parts, you will want to get it over with quickly. Also, I find that, once I start building and gluing parts together and see my airplane beginning to take shape, I don't want to stop and start cutting out detail parts. It's like you stopped the production line. I also believe this is why so many modelers have so many partially completed models hanging on their cellar walls that are only partially completed.

Once you have all the detail parts cut out and neatly stacked on your uncluttered work bench, the plans spread out, pinned down and covered with wax paper, you are ready to go. Now there is nothing that can stop you from completing the project. So let's get started.

One thing more, I don't believe in giving step-by-step instructions as this article would be too long, and you would get bored reading it. If this project is going to be your first step into model building, I suggest you buy this plan and put it in a good dry place for a future date, then go out and buy a good R/C trainer kit. This will give you a chance to learn how to read a construction drawing, how to match up and identify parts which are called out on the drawing. You will also know that all of the building bugs have been worked out of the model. When you are working on prototypes, a new design, or developing a kit or building from plans, a mistake, a construction procedure or a slight change in the design may occur. This does not happen all the time; but every now and then a designer who is deeply wrapped up in his project may omit something. An experienced scratchbuilder will have no problem working around this type of situation.

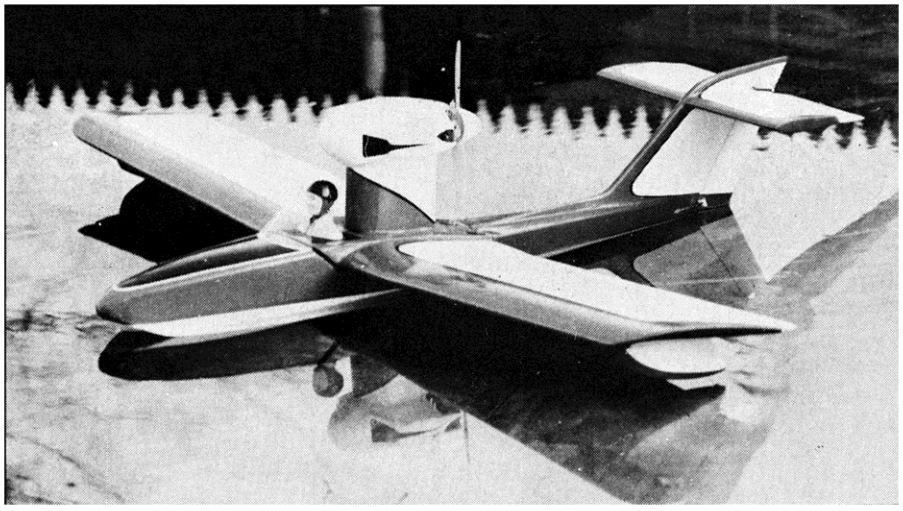
WING

Let's start with the wing. It's big and, when it's done, you will feel like you have one half of the project completed. The wing is built in three sections. Build the right wing panel as shown on the plan. Sheet the leading and trailing edges and wing tip top and bottom. Cap strip all of the ribs. Do not sheet the wing panels where they join in the center section. It will be sheeted when the two wing halves are joined. Also, leave off the inboard wing ribs, as they will be added later. After the right wing panel is framed out, set



The Osprey is very simple to construct, having very rudimentary lines.

Ready for a flight, the Osprey gets christened.



it aside and frame out left wing panel.

You will note on the drawing that only half of the wing is drawn. When you build the left wing panel, you will have to build it upside down. I don't like building wings in this manner. I usually trace the wing panel off the drawing and have a reverse print made. This will give you a mirror image of the wing panel. If you don't have access to a blueprint machine, then trace the wing half onto thin transparent vellum or mylar, turn it upside down and you will have a mirror image.

WING CENTER SECTION

The wing center section may look complicated, but it's not. Locate ribs R1 and R2 on the drawing. I show a template for the wing ribs. R1, R2, R3, R4, R5 and R6 are made from this template and trimmed accordingly. After the ribs are cut out and located, install the 1/8″ plywood dihedral brace. Epoxy all parts in place. After the epoxy has cured—join wing panels together making sure you have 1½″ of dihedral—measured at the bottom of the last rib of the outer wing panel. You will also note that rib R1 is offset to the left of the center line of the wing and fuselage. This is done so that, when the engine pylon motor mount is added, the thrust line of the engine will be located on the centerline of the fuselage. After the three sections are joined together, install the engine pylon. Then sheet the top and bottom of the wing, as shown on the plan, and install the 1/8″ plywood plate for the bell-crank and install the landing gear block.

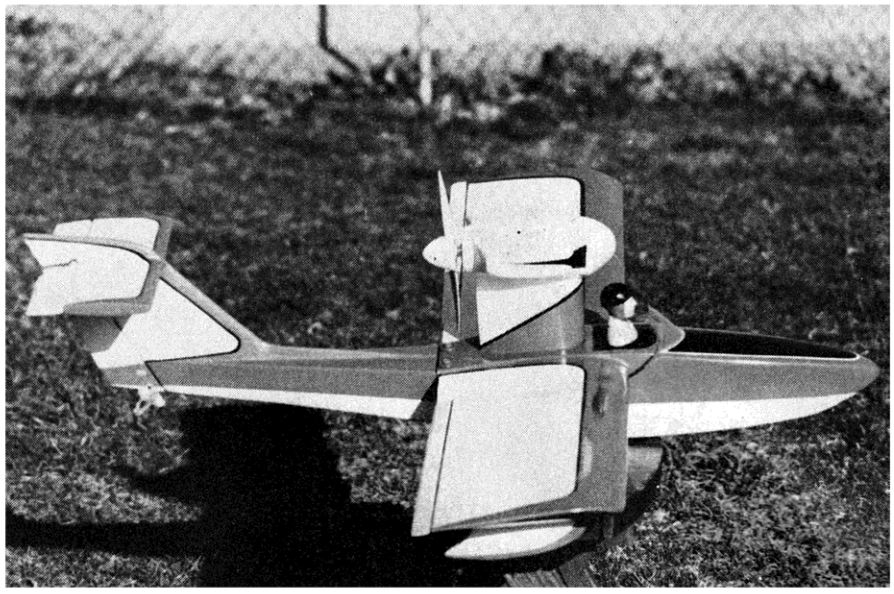
EMPENNAGE

This is probably the simplest part of this project. The most important thing is to build the components accurately and without warps. Also, drill ¼″ dia. holes in the fin ribs for the Golden Rod tube installation. I used Du-Bro Kwik Links 30″ steel push rods for rudder and ailerons, and Golden Rod for the elevator and motor.

FUSELAGE

Now we're into boat building—after all, this is a flying boat. This hull is very easy to build. Cut out all the formers and trim them to the datum line. Bulkheads B4 and B5 are shown cut below the datum line; but when you cut them out, leave the amount shown between the top of the bulkhead and the datum line. Later, this amount will be trimmed off. On bulkheads B1, B2, B3, B6 and B7, trim off the portion above datum line, and mark it so that it can be identified later when it will be glued back. Now take all these bulkheads and lay them over the plan view of the fuselage (upside down or bottom up). Glue in the ¼″ spruce keel, locate fuselage sides and cement in place.

Do not use water-base glue on this airplane, for obvious reasons. I used ambroid and epoxy throughout. Sheet the bottom of the fuselage as shown on the plan. After the adhesive is cured, remove the hull from plan. Glue on parts that were trimmed off bulkheads B1, B2, B3, B6 and B7. Trim off extension from bulkhead B4 and B5. The rest of the hull construction is straightforward.



The Osprey has a lot of character, with its swept tail, yet square wing.

ENGINE NACELLE

This is probably the hardest part of the whole project. You will have to call upon your building skill. I suggest that you build the nacelle as a plug and use the balloon method for making a fiberglass engine nacelle.

COVERING AND FINISH

I covered the wings with Silk-Spun Coverite. I sealed the entire airplane with Balsarite (three coats) just before covering. As the directions on the Balsarite can states, I began covering within forty-five minutes of application for best adhesion of the Coverite to the balsa wood structure.

I sealed the hull with Softglass resin. This stuff is great, because it sands so easily and gives a dynamite finish. I painted my Osprey with automotive lacquer, with a 50/50 combination of fire engine red and orange. Eyeballing my finished color against the cover picture on *Sports Flying* magazine, it came out pretty close. I added about 20 percent retarder to the paint mixture in order to slow down the drying time and to preventing blushing. This also lets the paint flow out more, which cuts down on the wet sanding and compounding time.

TIP FLOATS

These were band-sawed out of low density foam, then sheeted and glued to the bottom of the wings, as shown on the plan. Also, you will note on the plan, that I show landing gear blocks located in the wing if you want to put wheels on the airplane. I made mine a tail-dragger. It handles a lot easier on grass and dirt fields.

TRIMMING AND FLYING

As I stated earlier in this article, trimming the airplane was a chore. One problem I had was water spray while taxiing. This was solved with the addition of spray rails. Another problem I had was with the step—it wasn't deep enough. I corrected this by adding trailing edge stock. You will see this on the plan. It also created a better burbling effect at the step, which helped the model break free from the suction of the water and made the takeoff run shorter. After these problems were worked out, I found I had a nice flying airplane.

Try seaplane flying!

□