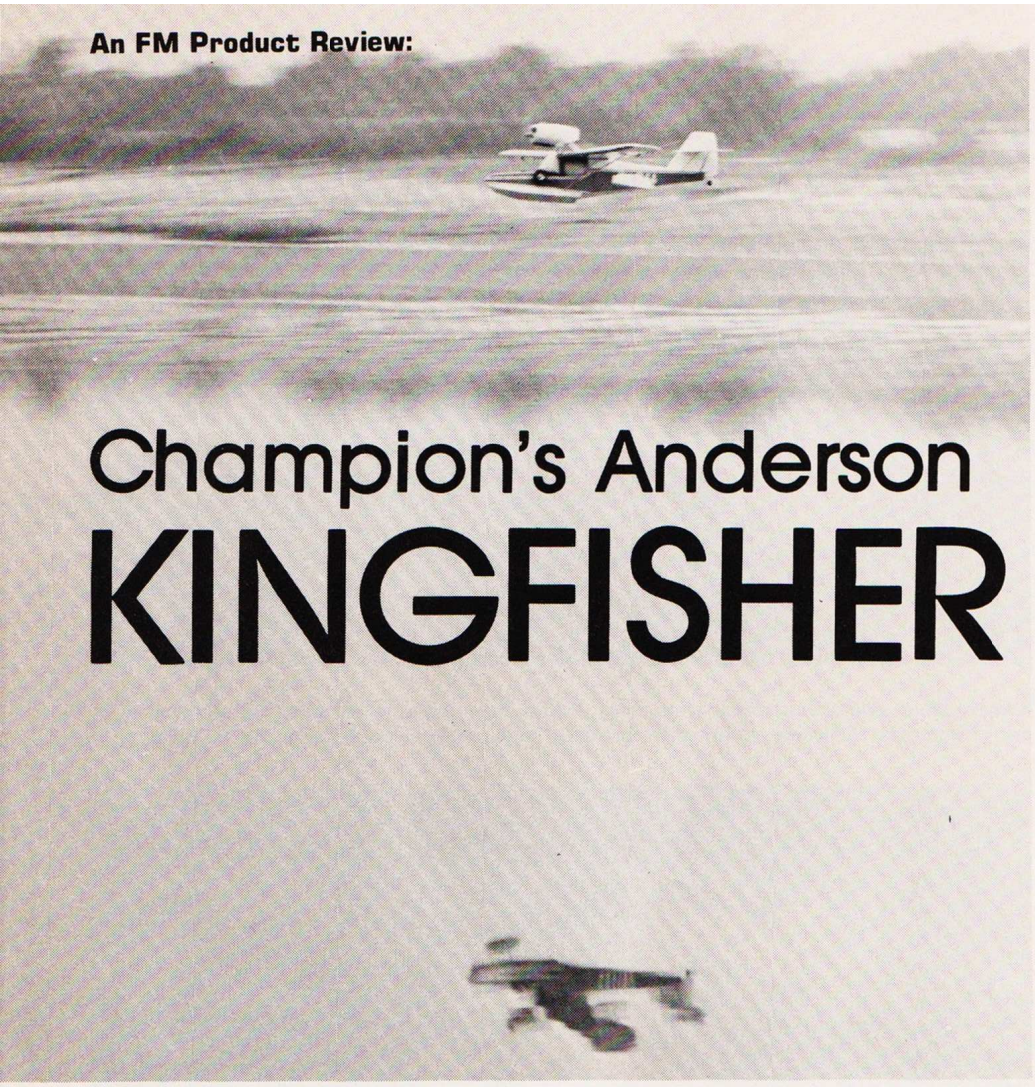
An FM Product Review:



Champion's Anderson KINGFISHER

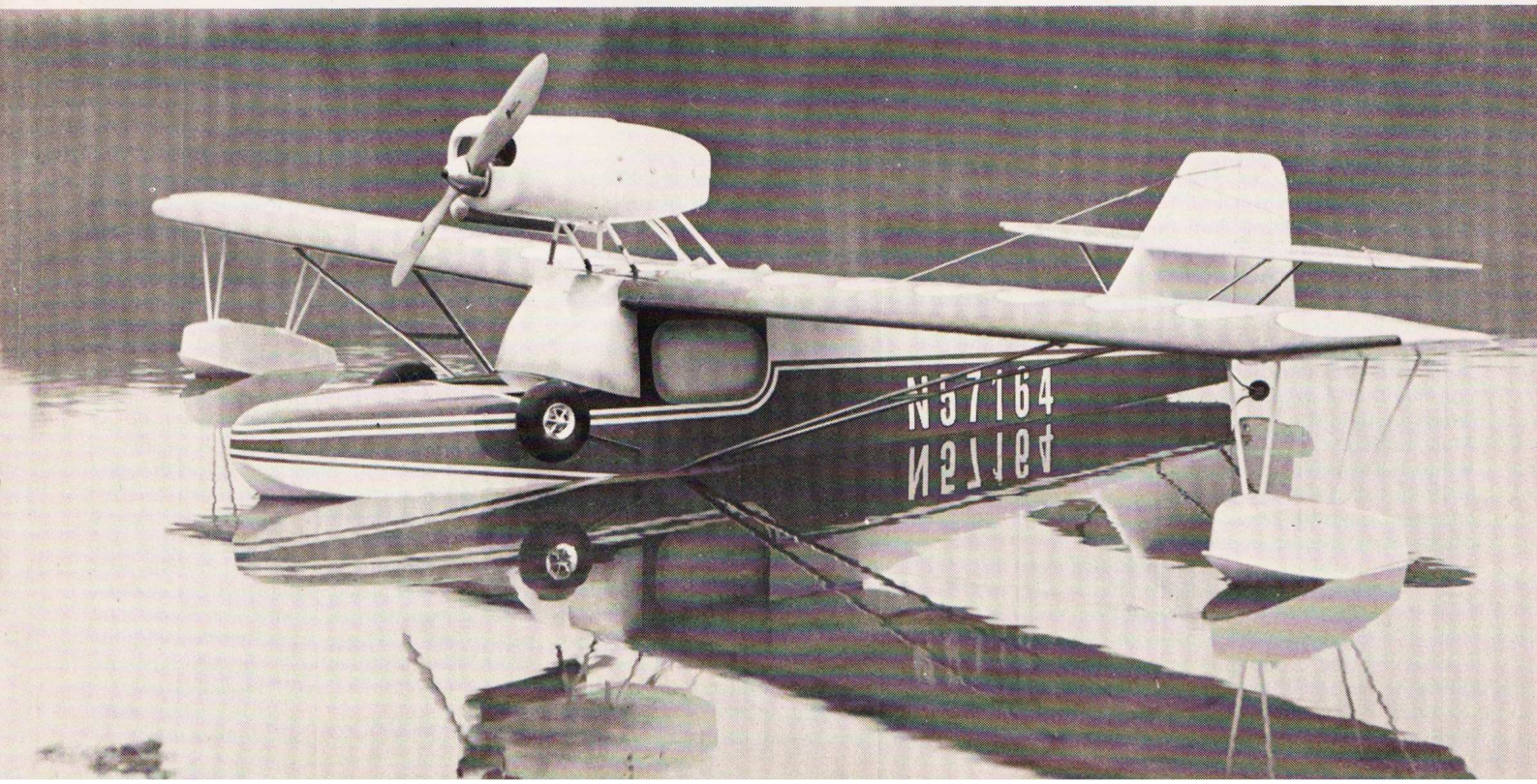
PHOTOGRAPHY: DICK SARPOLUS

A big and beautifully executed kit of the homebuilt Anderson Kingfisher. 72" in span for .60 engines/**Russell Zubach**

Seaplanes are the only way to fly. I decided this years ago, for many reasons. I have always lived close to the water, near Raritan Bay, across from New York City. Years ago, to get some R/C flying in before and after work in my father's boatyard, the only place to fly close by was over the water - so it had to be seaplanes. There were always boats handy for any necessary chasing after the airplane, and the water seemed to be kinder to the model than the hard ground when something did go wrong. Flying in the early mornings and the evenings meant there was usually little wind and the bay water was usually calm enough for takeoffs. It was all salt water of course, but at least at that time the hazards of salt water corrosion did not worry me.

To go back in time a little, of the many R/C seaplanes I did fly, two of them stand out in my memory. One was a Sterling Monocoupe, on twin floats, flown single channel/rudder only with escapement control. The radio equipment was tube type with its associated expensive set of batteries. In the nose was a reliable McCoy .29 which powered that Monocoupe on many long and enjoyable flights. One other old timer, possibly the King of all Seaplanes, was my 9½ foot span Custom Privateer—designed by FM's editor Don McGovern and kitted by Berkeley. This behemoth was also rudder only single channel escapement, but had the marvelous addition of a quick-blip escapement throttle control on the powerplant, an early Fox .59. The big Privateer would takeoff majestically after a very long, maybe 700 foot run across the water and a lot of urging as I followed it in an outboard powered rowboat.

Enough reminiscing—possibly Don let me write this Kit Review because I told him of my admiration for his Custom Privateer design. I still look back on it as the most complicated, time-consuming model I ever built; but it was worth it. I still have a com-



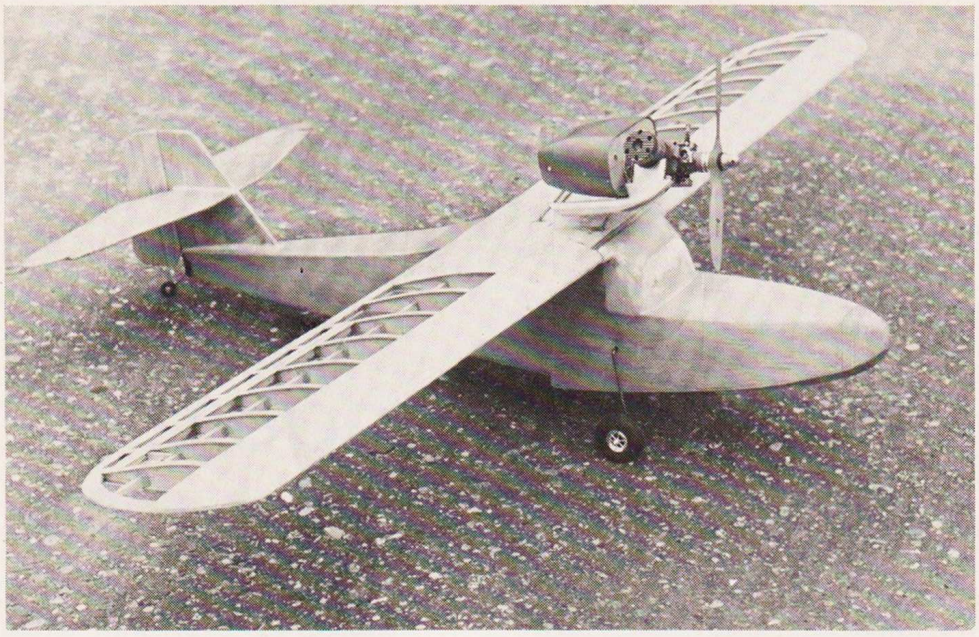
plete kit for another one; someday, I'll build it. Now, I still live near the water, radio equipment is better than ever, and I continue to feel that seaplane flying offers more enjoyment than land flying. In this area, there are more ponds to fly from than normal flying fields so I naturally want to fly seaplanes.

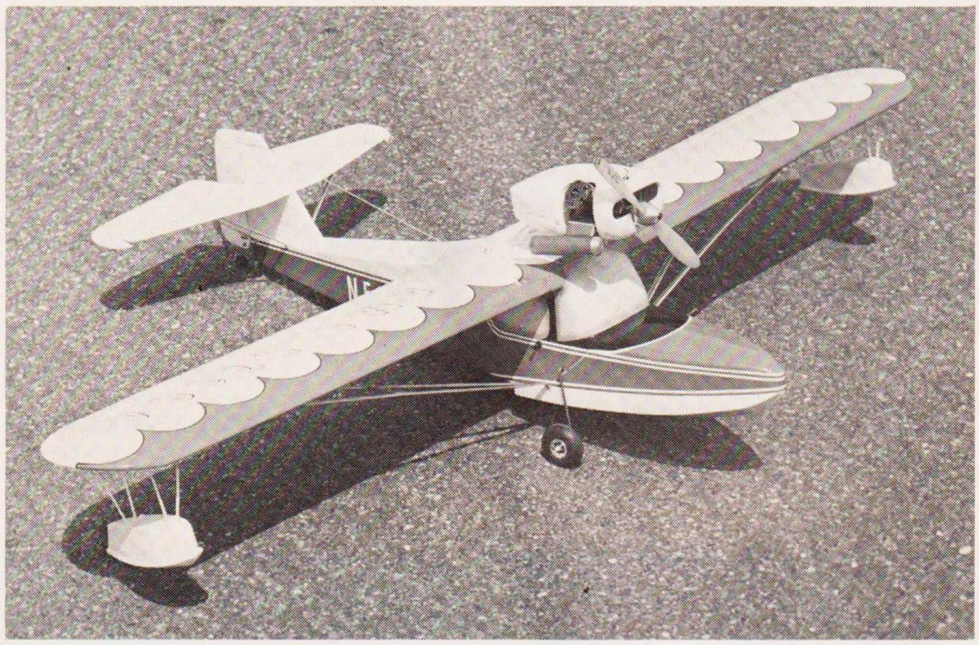
There really are very few seaplane kits on the market to choose from; Champion's new Kingfisher offers a large sized model (72" wingspan) and a scale appearance. It is set up to be convertible with very little effort for water or land operation and would appear to be a good choice for a competitive sport scale model. It is a fairly complicated project, definitely not one for a beginning modeler. Being a seaplane enthusiast, it appeared to be a welcome change from twin float equipped conventional models, and when I first saw it advertised, I couldn't wait to get hold of one.

The kit is not cheap; its list price is $120.00, but when you feel the weight of the kit box and get a glimpse of its well packed contents, the price is understandable. The model is of completely balsa built-up construction, and the individual balsa parts are extremely well finished. The fuselage formers are all built up, and the fact that those parts are plastic bagged for each former simplifies their fabrication. The hardware furnished is impressive; due to the design features of the strut-mounted engine nacelle, the retractable (really rotating up above the waterline) landing gear, and the strut mounted tip floats, much wire forming is necessary. All the wire parts are preformed, brackets for the firewall are brazed on, and the metal and machined wood parts for the unusual landing gear configuration are all very well done. My only criticism of the hardware furnished, and there are a lot of items there, is that a few more clevises and bellcranks would have made it really complete.

There are several formed plastic parts supplied which save a lot of carving. The tip floats are in two parts, joined at a flange, and appear well designed to do their job. The engine nacelle has a top and bottom cowl which serve to hold the fuel tank in place behind the firewall, and a front section, made from two pieces which must be joined, to enclose the engine. The plastic used seems to be substantial, can be sanded and painted, and epoxy can be used for assembly of the plastic parts.

The packaging and overall quality of the kit is excellent; it is obvious that it was put together by someone who cares. The wood was very good and in all cases was cleanly machined. The ribs are die cut, and it is high quality die-cutting. I noticed that the plywood and hardwood parts were particularly well finished. Before getting into the construction I will mention several areas where I made slight changes to the aircraft. Most modelers have certain features or ideas which they prefer, and can change a kit built airplane accordingly; of course, if major changes are made it would not be fair to blame the designer or manufacturer if the changes did not benefit the model. One change I made was to increase the wing dihedral slightly; the original aircraft had very little dihedral, and to keep the model's wing from appearing to droop, I put in about 1" dihedral under each tip. Another change, in the interest of extensive off-water operation, was not to use the plastic windshield and



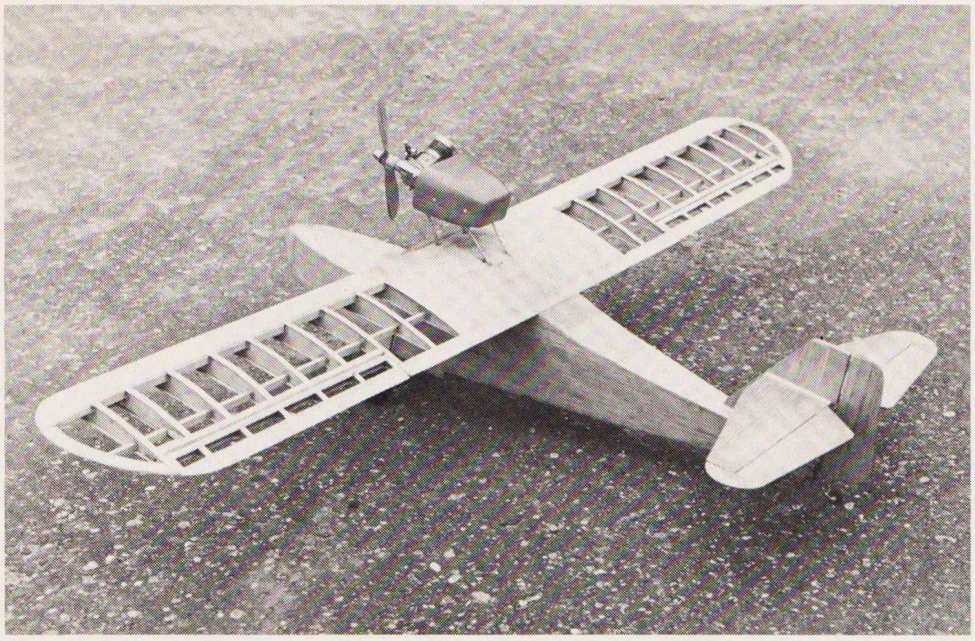


It's a six-footer, ailerons, rudder, elevator, engine. Seen here unskinned, and in a like shot (**below**) in painted splendor. Scale-like performance, a real fun ship for those vacation lakes. Worth building!

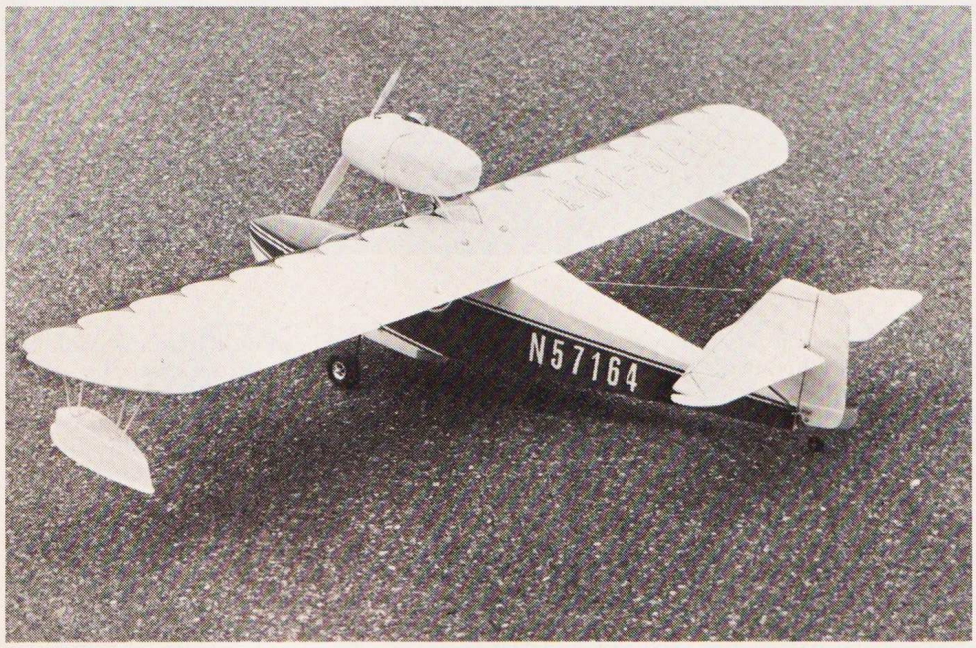
side windows as shown in the kit. For the windshield, I shaped a block of urethane foam to fit and covered it with lightweight fiberglass cloth and epoxy. The side windows were not cut out. When painting the model, the window areas were masked out and sprayed light blue, with darker blue airbrushed around the edges. The appearance is good and there are no worries about a wave of water knocking the windshield loose. One more change was to add a water rudder of aluminum sheet which swings down out of the rudder for water use; it was felt a water rudder would be needed for taxiing. For the wing struts, rather than use the spruce provided, I used aluminum streamline tubing with aluminum mounting tabs heli-arced together. The spruce of course would be satisfactory; the struts are merely decorative.

The instructions and drawings on the plans are sufficient to build the model; they did get quite a bit of careful study as this model is more complicated than those I have been used to. The basic fuselage construction is more like a boat than an airplane, with its built-up formers, stringers, and planking. The fuselage itself is not bad to build, but care must be taken not to let it twist out of shape as the planking is applied. I built up sort of a jig to hold things in place, which helped.

The fin and stabilizer assembly is quite complicated, as the high mounting position of the stab requires internal linkage to actuate the elevator. The fin uses plywood sections to hold this linkage and it and the stab must be joined before adding that assembly to the fuselage framework. To be able to add the fin and stab, I blocked the fuselage at a level position so I could add the fin/stab assembly and measure to insure the stab incidence was correct. After it was epoxied in place, the fuselage framework could be skinned to complete it. As mentioned earlier, a shaped urethane foam block was substituted for the plastic windshield. The landing gear must also be installed as the fuse-



The engine nacelle sits on a wire birdcage. Strong enough? It is very rugged, handles the .60's roars with no problems at all, simulates full scale steel tubing mounts. **Below:** For land or sea, nice option.



lage is being built; if the model is to be used strictly for water flying I would recommend leaving the landing gear off entirely for less weight and complication. Again for water use, I covered the entire fuselage and tail assembly with lightweight fiberglass cloth and resin, scraping the resin to keep the amount used to a minimum. This adds tremendous strength and insures a watertight hull. Also important for use in the water is keeping the lower fuselage edges, or chines, as sharp as possible—don't round these edges off. There is enough room in the fuselage for several radio installations, so there is no problem putting the gear in.

Going on to the wing, the construction isn't difficult, there is just a lot of it. It is flat bottom, which makes it easy to build directly over the plans, without getting any warps into it. It is somewhat unusual in that it is built in three sections, the flat center-section getting the engine nacelle mounts. Addressing the center-section first, it is a rugged assembly, as it must be to hold the nacelle. The nacelle mounts are formed of 5/32" dia. steel wire, with mounting brackets brazed on to mount the ¼" plywood firewall. These mounts are clamped and bolted to the plywood wing spar doublers, and the drilling guide for the holes in the plywood spars are shown on the plans. Here I did find an error on the plans—the hole spacing for the nacelle mount clamps is incorrect. I spoke to the Champion people and they advised that a plan correction sheet would be furnished in all subsequent kits.

I had some doubts about putting a .60 engine, on a radial mount, on a ¼" plywood firewall held to the wing only by wire struts. When completed, my doubts left—that engine nacelle is strong, and it is rigid. I would say it is very well designed. The rear portion of the nacelle, made up of a top and bottom piece of vacuum formed plastic, serves only to contain the fuel tank. A 10 ounce tank appears to be the maximum size that will fit; 10 ounces will suffice, for a mild .60. In this plane, full power is not even needed for realistic flying. The front half of the cowling encloses the engine; it is made of two pieces which must be joined. The two piece construction provides a reinforcing flange which makes the cowling quite sturdy, but it is a bit more work to fill in the seam. I mounted the engine, an OS .60 gold head, at a 45 degree angle to put the Semco muffler well clear of the wing; I feel the 45 degree mounting is more convenient than a side mounting, and certainly is better looking than a vertically mounted engine.

Getting back to the wing, the three wing panels are joined together with the plywood dihedral reinforcements; as mentioned earlier, I added about 1" dihedral under each wing tip to prevent a sagging appearance. The built-up tip ailerons are a little more work; when installing the pushrods for the aileron control, block the holes in the ribs for a close fit to the pushrod to prevent flexing of the pushrod. I covered the wing and ailerons with Super Coverite which adds considerable strength to the structure. For the wing struts, spruce strips are furnished with the kit which can be sanded to a streamlined cross-section. The struts are for appearance only—they are not needed for strength so they can be retained to the fuselage and wing with small screws when desired. The wing is mounted to the fuselage with two locating dowels in the leading edge notch and two ¼" dia. nylon bolts at the trailing edge. It should be fitted closely to the fuselage; with soft foam wing rest tape on the fuselage, when the wing is bolted on it should be quite watertight.

The tip floats are formed plastic, two halves to be joined together along a flange which can be trimmed down. They are mounted to the wing by formed wire pieces and are easily detachable from the wing. In their scale location, they are far out on the wing, close to the tip. I had some thoughts of moving them in closer to the fuselage so they would be less likely to spin the plane around if they caught the water during a takeoff run—however they do clear the water by quite a bit and the float bottoms are correctly angled up and quite wide, so I did install them as called for.

The entire model was assembled, checked for alignment and control surface throw, then taken apart for finishing. The complete fuselage and tail assembly had been covered with light fiberglass cloth and resin, and the wings had Coverite ironed on. I sprayed on K&B Superpoxy primer, several coats with a good sanding between coats. I feel an epoxy paint is the best choice for any seaplane since its sealing and waterproofing qualities are so good. Considerable masking was done to put the orange and black trim over the base color of white. The window areas were masked off and sprayed light blue, with a darker blue fogged around the edges. All masking was done with plastic electrical tape, stripped to ⅛" width for some of the trim lines and the curves.

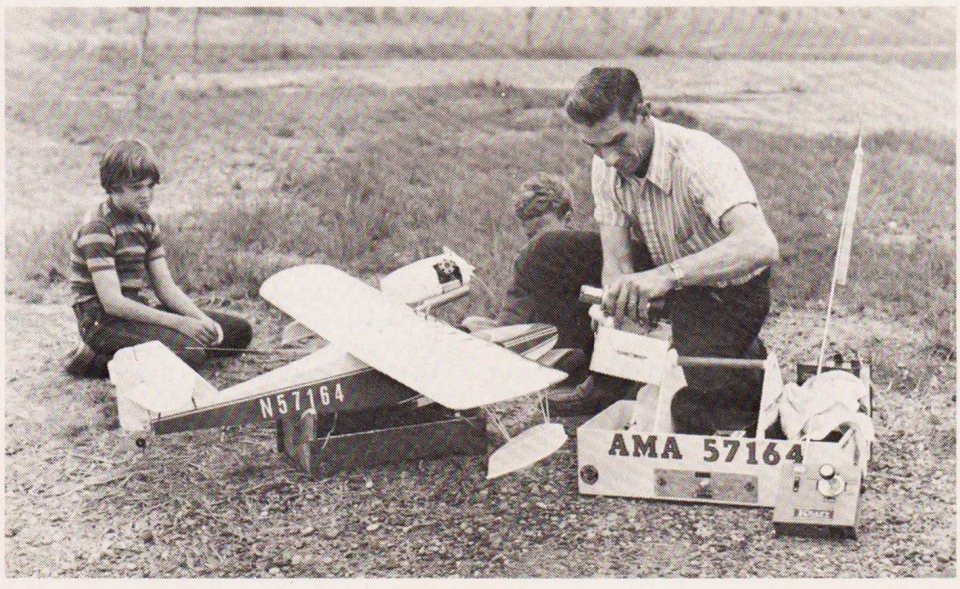
The radio equipment used was my trusty single stick Kraft with KPS-11 servos. This radio had survived several active boat racing seasons, with at least a few dunkings, and had then been checked and turned by the factory. Its reliability has always been excellent, and I wanted a radio I could trust in this model, after all the work invested in it. Another important thing to do is to check the balance, before flying—I had to add quite a good sized piece of lead up in the nose (bow?) to get a nose-heavy balance. This

brought the weight up to about 8½ pounds, but it's better to have a heavier plane that balances than a tailheavy plane that crashes. I also assembled the plane in the back yard and ran the engine; I'd rather adjust the carburetor at home than out on the field, before the test flight. I even set the plane in the swimming pool, and it looked good!

For test flying I called on the services of a good friend, Dick Sarpolus. With his years of flying every type of model, I felt the plane would be as safe as possible with him. I did take the precaution of getting all the photographs before we went out for the test flying. We postponed the first flight for a number of weeks, waiting for some reasonably good weather. I finally couldn't wait any longer, and the first flight was made in very windy conditions. We had decided to fly it off the ground first; on the take-off run it tended to nose over forward (later cured by bending the landing gear forward slightly) and lifted off beautifully. It flew well, but we did find the ailerons to be quite ineffective—typical of a large, flat bottom wing aircraft—so the rudder was used frequently. Later, freeing-up the aileron hinges and moving the horns to get differential throw (more up movement than down) increased the aileron control.

Next was the off-water flying. The first water taxiing showed that I had added so much weight to the nose (not really needed) that we could not get it up out of the water, on plane. The excess weight was removed and it handled fine on the water. When taxiing, up elevator and part throttle will keep the nose high; it rides on the rear portion of the hull. With more power, the elevator can be returned to neutral, and the plane rides on the forward portion of the hull—it rides smoothly, and lifts off easily. It is the most realistic model I have had; when throttled back and flown in a low fly-by, or for a touch-and-go on the water, it looks just great! No aerobatics have been tried; that's not my interest, I'll stick with the straight and level. The water take-offs and landings provide plenty of pleasure and excitement.

To sum up, I found the aircraft quite a bit of work to build—but the kit is well done, the parts fit, and with careful work, the end result will be a beautiful model. The scale appearance, to me, is well worth the work involved. It flies fine, looks extremely realistic, and of most concern to me, off-water operation is completely practical. My dependable Kraft radio continues to perform well, the OS .60 engine provides plenty of reliable power, and this whole project was certainly enjoyable.



At the shoreline. Calm water is always an invitation. When starting flying boats remember where your prop arc is! **Top photo:** Wheels make it an amphibian, they rotate forward manually for water operations.