FORPLAY

A 2 channel lightweight super performance 1/2A glow or 05 electric powered float plane. Fly it with or without the floats.

By Bill Young

The airplane detailed in this article was designed 10 years ago to serve a specific purpose. That purpose was to compete in a local contest in which, with a limited engine run, each competitor climbed as high as possible and then completed as many maneuvers as possible during the glide, ending in a spot landing. Having been around competition for a long time, and having seen what was being done with free-flight and R/C, I designed this airplane to take advantage of both types. As it turns out, most of the criteria for this early airplane also applies to electric flight. So when I began thinking of an electric airplane, this one came to mind.

After the original contest, I wanted to continue to fly the airplane. Being involved in model boating also, it became a natural to add floats. Here, again, I added my knowledge from another field in order to improve performance. Much of my observation of model float planes indicated

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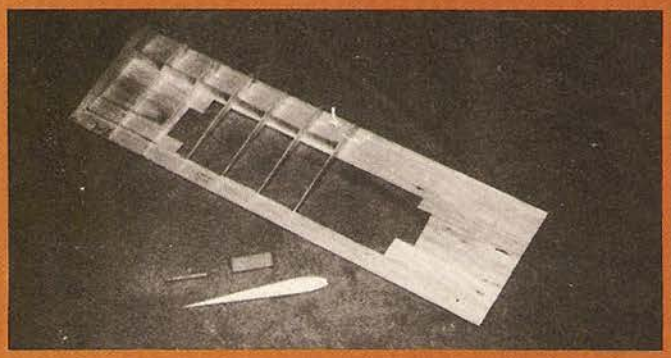
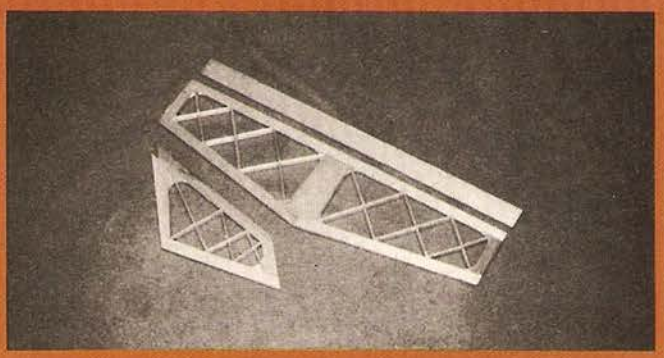
Designed By: Bill Young

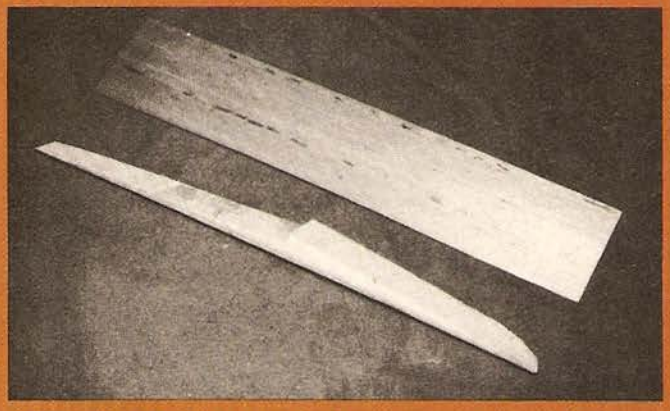
TYPE AIRCRAFT
Sport Float Plane
Glow or Electric
WINGSPAN
40" glow, 46" elec.
WING CHORD
7½ Inches
TOTAL WING AREA
300 Sq. In. glow, 345 elec.
WING LOCATION
Low Wing
AIRFOIL
Flat Bottom
WING PLANFORM
Constant Chord
DIHEDRAL EACH TIP
1⅝" glow, 2" elec.
O.A. FUSELAGE LENGTH
32 Inches
RADIO COMPARTMENT AREA
(L) 7" x (W) 2" x (H) 2½"
STABILIZER SPAN
17 Inches
STABILIZER CHORD (incl. elev.)
5" (Avg.)
STABILIZER AREA
85 Sq. In.
STAB. AIRFOIL SECTION
5% sym.
STABILIZER LOCATION
Top of Fuselage
VERTICAL FIN HEIGHT
5 Inches
VERTICAL FIN WIDTH (incl. rudder)
4" (Avg.)
Rec. ENGINE SIZE
.049-.051 glow, 05 Astro elec.
FUEL TANK SIZE
Tank Mount
LANDING GEAR
Floats
REC. NO. OF CHANNELS
2
CONTROL FUNCTIONS
Elevator, Ailerons
BASIC MATERIALS USED IN CONSTRUCTION
Fuselage ..... Balsa, Ply, Hardwood
Wing ..... Balsa, Ply & Spruce
Empennage ..... Balsa
Wt. Ready To Fly ..... 28 Oz. glow, 32 elec.
Wing Loading 13.4 Oz./Sq. Ft. elec. & glow



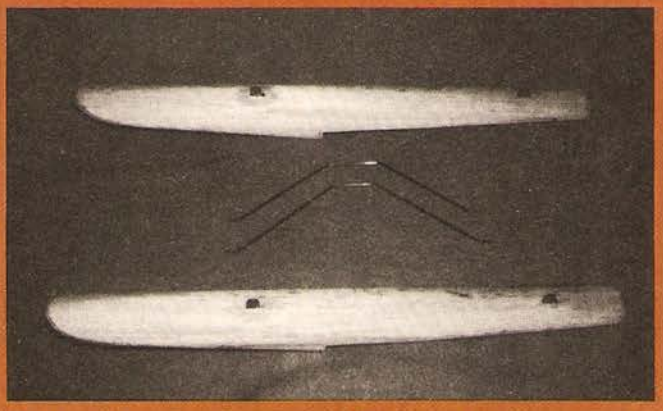
Wing uses some interesting weight saving techniques, in keeping with size and strength requirements.



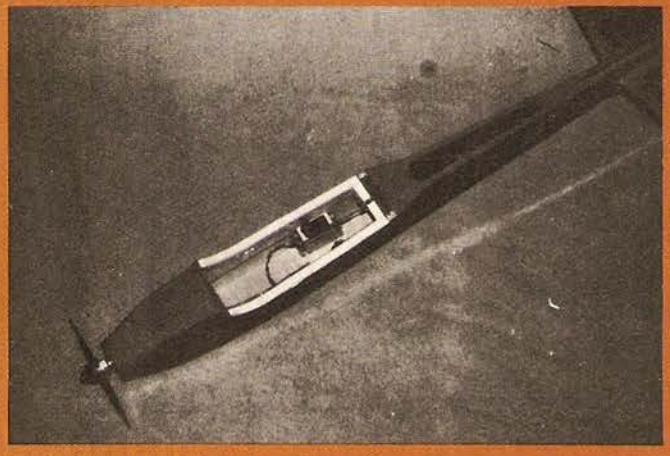
Tail surfaces are assembled from stick balsa and sanded to shape. Don't forget — don't use water soluble glues!



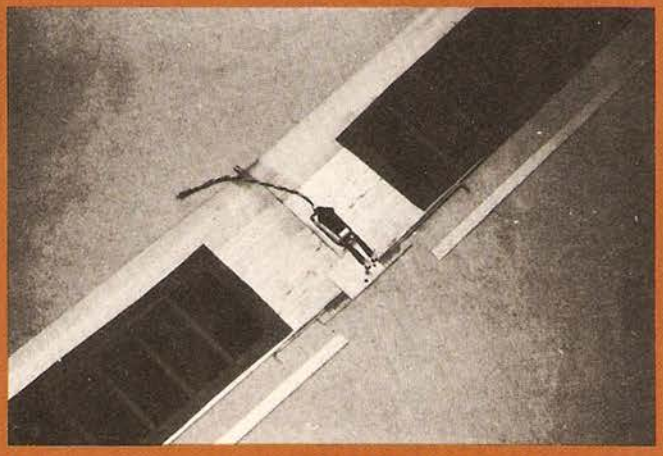
Completed float, with sheet planking before application. Sheet is rolled around foam float core, ala wing building techniques.



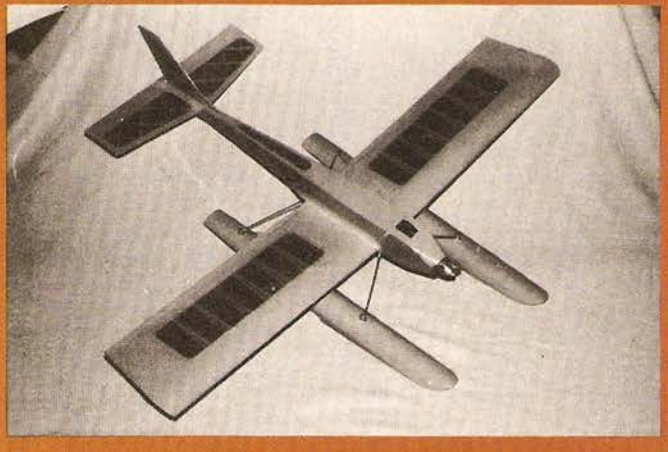
Finished floats with wire mounts. Floats are fully detachable for transportation and/or flying on land.



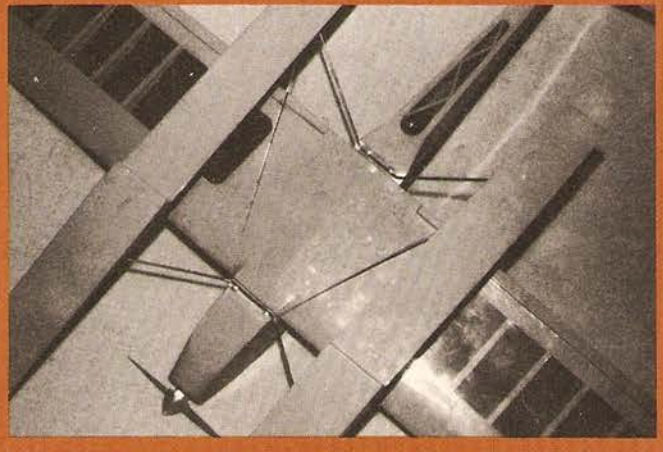
Two channel installation is simple, elevator servo is shown here. Extensive waterproofing is not done or felt necessary.



Aileron servo and strip aileron detail. Easily obtainable standard hardware items only are required.



The electric version, differs only by the addition of a cowl. Both are excellent, consistent flyers.



Close-up of bottom (electric version). Note floats are flat bottom and perform excellent.

much needed improvements which were easily solved by using my racing boat knowledge.

In the original design, weight was a problem that would detract from obtaining high altitudes. Thus a very light airframe, with free-flight construction for rigidity, was called for. The covered airframe weighed 9 ounces. In order to insure similar weights, the use of Sig contest balsa (or weighing your own balsa) is a must, otherwise you will probably end up with a weight of 16 ounces. Weight is also a problem when carrying an electric motor and battery pack. Substitution of sheet tail feathers and fuselage construction would probably add another 5 ounces.

This airplane is intended to fly and the floats only get it into the air and keep it afloat until it can be retreived. Therefore in order to keep weight down, I use no internal waterproofing other than attention to details. I carefully overlap the MonoKote and seal the corners, etc., with epoxy. I use non-water softening glues throughout and I keep it out of the water as much as possible.

The radio installation weighed 5 ounces using the smallest servos and a 225 mah battery pack. Again, some of those older radios may add so much weight that the ship's ability to become airborne is in question. The .049 version, without floats, would climb nearly vertical. With the floats, it climbs at about a 45 degree angle. The electric version with floats climbs very gently. The long tail moment helps this ship to point where you want it to go and it does not wander.

The complete float assembly weighed 7 ounces. The construction I used has subsequently appeared as an article by Dick Hansen in the November 1978 issue of RCM. It is straightforward and results in a float that gets loose in a hurry. Resist all urges to put rounded corners on the floats as this will slow them down faster than anything else.

The rest of the construction is very straightforward and is adequately detailed on the plans and in the photographs. The .049 version and the electric version are both shown on the drawings. The only thing you will have to make allowances for is the different wingspans.

Have fun.

Editor's Notes:

Reliable power, and the greatest possible amount of it, is always nice to have up front. We suggest you look into the Customized Cox Engines, available from Kustom Kraftmanship, P.O. Box 2699, Laguna Hills, California 91653. A number of different versions can be obtained, including a fully customized version with increased bypassing, improved timing, fitted and lapped piston/cylinder, 128 thread per needle valve assembly, pressurized back plate, enlarge venturi, etc.; all of which improve engine rpm and power. The modified parts mentioned are also available separately; crankcase pressure and the custom needle valve assembly themselves will result in a surprising increase in power. Complete information and price list is available for a business size SASE, from the above address. □

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