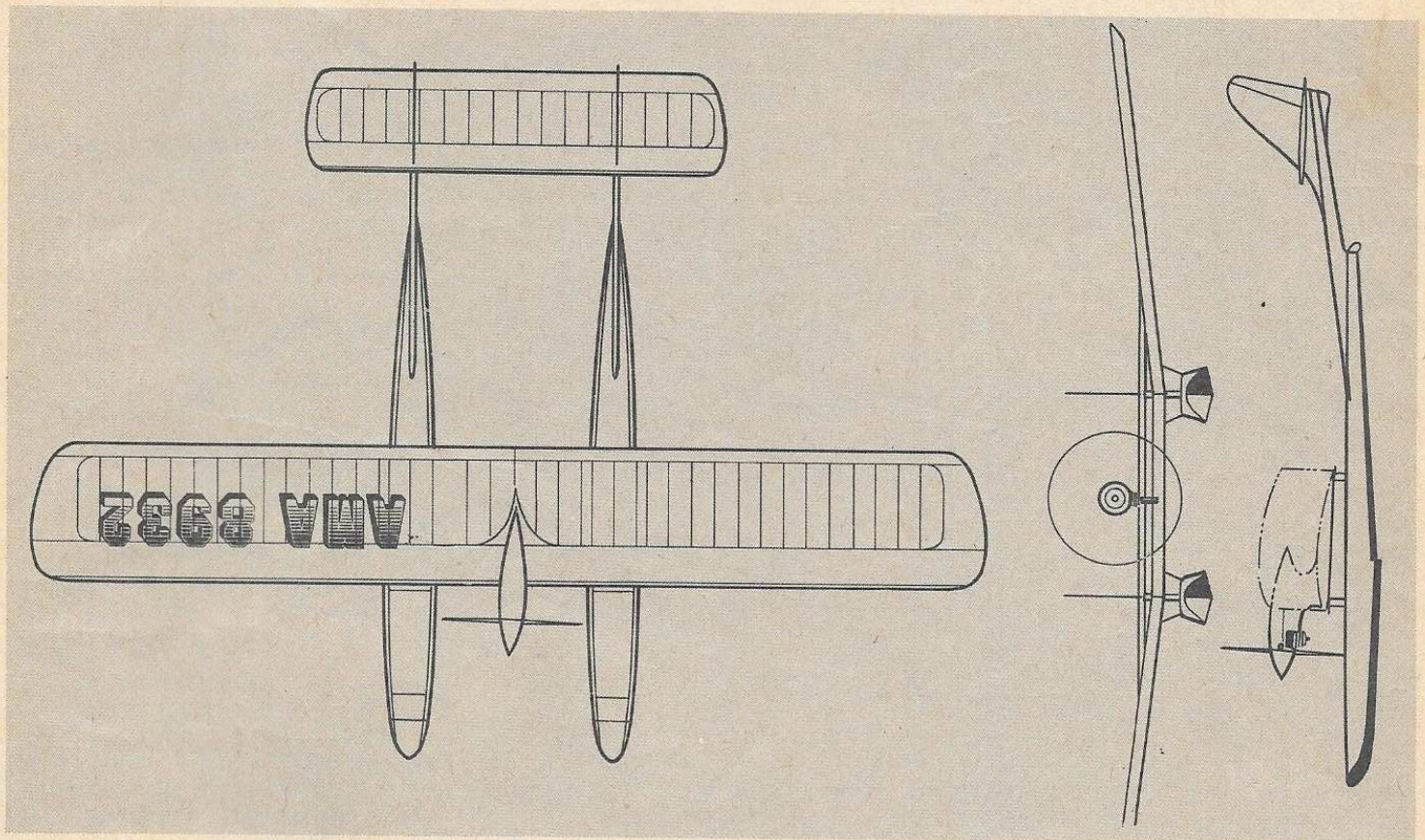


The "BARRACUDA"

Flying Boat

Floats house R/C, stable on the water, simple structure . . .

For .29 to .45 engines, 35's are perfect. 72" span.



Big and roomy, handles well on rougher water.

R/C gear waterproofed in plastic bags.

by Don McGovern

► Many a builder has tried his hand at float-flying. Many have failed, for want of a suitable aircraft, and a knowledge of the sea. Power. That is what you need. A nice hot brand new clean un-bent engine that can wind up a good prop and scream its head off. Power . . . in one word the biggest thing missing on a thousand seaplane models that fail to R.O.W.

For a dozen years this designer has been active in seaplane flying, and I can think of nothing more gratifying

than to see a big flying boat plane for take-off, rise on the step and break-off. I have had countless letters from modelers the world over who have either overweight aircraft, or under-powered aircraft which fly fine, but never quite can make a water take-off.

Their dilemma is not unique, for I too have had plenty of muffed attempts. In short I find when the engine is really howling, a trimmed-out design of known ability will R.O.W. in short order. Years back my original 9½ foot Custom "Privateer" grossed 9½ lbs. with single channel R/C, lifted off easily with a .65 Anderson Spitfire. Letters arriving recently speak of the design breaking off with Super Tiger .56, Fox .59 and similar potent engines at gross weights of 14 pounds. All

state the engines were roaring. Water is akin to glue, and the suction qualities are enormous. An engine must wind up to make an aircraft even taxi. This lightens the aircraft through slight wing lift, permitting the hull to rise a fraction, lessening drag, thereby allowing further acceleration, and on up to the lift-off.

As a case in point, I once turned a seven-foot twin float Super Cyke free-flight loose for take-off. It would normally be airborne in fifty feet or so. The engine sagged, and it plowed across the glassy-smooth bay for a half-mile, while I in hot pursuit shouted suitable comments to that tired old antique fan. Effective they were too, for as the last slops in the tank straggled into the engine in-nards, it leaned out with a tubercular roar, and took off. Climbed to three whole feet, and succumbed to the rarified air. The moral is, you need a good engine, running well, and anything

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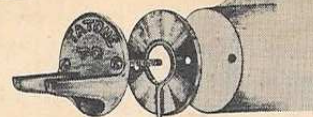


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THE "BARRACUDA"

else will give you difficulties becoming airborne consistently.

That's problem number one. I've got a list. Once you take-off, you have too much power, the ship stands on its tail and goes to the moon. Fine for a checked-out, trimmed out free-flight, but watch first flights. Best to hand-launch until a new ship can handle peak power. And . . . while a land based contest type can hold an adjustment moderately safely, a dampened aircraft is a horse of another color. Wing and tail structures must be reasonably rugged without the covering, as silk, tissue or whatever tends to loosen just a speck while at

the beach, re-tightening itself when returned to a drier climate. Moral here, not too much uncontrolled power, a more forgiving ship than a contest type.

Excess power is easily controlled, once you understand the problem. On free-flights, a timer or water-actuated vane trailing in the wake can provide a high-power setting for take-off, reduce power to a moderate setting for the remainder of the powered flight once airborne. Radio seaplanes need all the more power, to lift the weight of the equipment, but once airborne, the problem of shifting power to a lower r.p.m. may be handled nicely by the radio on command. The aircraft is also under control (in theory) and your rudder etc. can handle most of the power pattern problems at they develop.

Wet engines: If water pours out of your engine, it is wet. Soggy, hard to

start. Pour it all out, blow it dry, remove glow-plug if need be, squirt it with fuel, flip, prime, flip and run dry. A good hot booster, short leads, new plugs and it will quickly re-start. A few wet splutters kick the last drops out, then a steady run. Run engine dry after each flying session, then squirt inside and out with fuel, oil etc. Rinsing salt water off first is a good idea, but I have found that engines stand up well to extensive salt water flying far better than land based aircraft that gobble up grit and sand as a regular diet.

Nothing is more pathetic than a converted free-flight, on too short poorly braced floats, resplendent in its two coats of dope. It just sort of slowly melts. This kind of an approach to hydro flying is responsible for its tremendous development lag. One such flimsy attempt is witnessed by a dozen other builders, all vowing to never

do likewise. Seaplanes should be fairly big, bigger the better, to handle the wave conditions, and land without tipping over. They must be very well glued, and highly doped. Waxed even! Drains in the formers, pin-holes at each trailing edge/rib joint to permit airtight covering to breath in heat of the sun, and water to be drained from wing prior to each flight. Do not treat these items lightly. Properly doped seaplanes will bloat in the sun and burst their covering, and a few spoons of water in a wingtip will introduce you to our next subject.

Water: This is very, very hard. Try a belly-wop off a ten-foot diving board and you'll see. Water is forgiving if you stall your engine on the launch, or something like that. You'll break the prop and that's about all. If you get up nice and high, and spin in, that's a little different. The flotsam is yours for salvage. Just don't, that's all we can advise. From five-hundred feet it will take a ship apart the same as concrete. Windshields and wings in particular.

On the plus side of the ledger, re-treiving by boat is the greatest. You can follow under an aircraft, fly with extremely long engine runs, or fly point to point and return if R/C is used. Water flying gives you access to seldom used flying sites, avoids lines of flyers waiting for a turn to fly radio, and so on.

The type of aircraft is your next consideration. The larger the body of water, the bigger the plane as a rule of thumb, as they can handle larger wave conditions. Usually, you will find that if it is calm enough to fly land aircraft, it is calm enough on the water. A brisk wind will kick-up white-caps, but on land you would tend to pack up for the day also. When it is truly calm, you can expect glassy smooth sea conditions even 10 miles offshore. If your body of water is wide and treacherous, you will do well to have a seaworthy boat beneath you for trips far from shore, as a sudden quickening of the wind can swamp a small row-boat.

A twin pontoon arrangement can be fashioned to fit almost any conventional aircraft, though they should be large enough to properly support the models weight. About 70% of the fuselage length for each float is a good rule to follow. Twin floats work well, but aim to keep the height of the model to a minimum for water stability.

The typical flying boat hull configuration is excellent, in that the hull is long, with a good turn-up at the bow, ideal for rougher water conditions. It usually requires stabilizing wing floats or hull sponsons for lateral water stability. Try to have them support the model with a minimum list to either side for good take-off qualities. It is advisable to mount the wing floats at about mid-wing, rather than nearer the wingtips, as further outboard mountings tend to wrench the model

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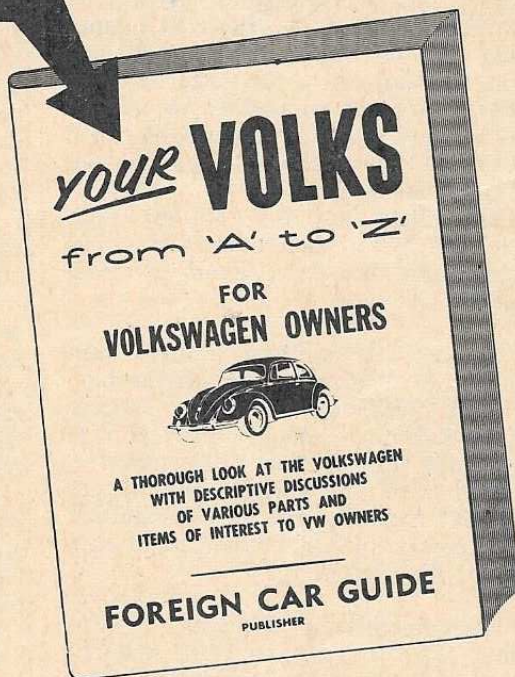
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THE "BARRACUDA"

to left or right as each ripple is struck. Wing floats are subject to violent shocks from wave action, and should be made to pull loose on hard impact on larger aircraft. The model is then lightened on one side, and floats up-right until retrieved.

The "Barracuda" design was inspired in part by a flight of ancient Italian flying boats which visited the U.S. in the early 1930's. While it only vaguely resembles the basic planform, it does add up to an interesting and off-beat model aircraft design, and quite practical for model flying. The twin hulls give excellent water stability at all times, plane well for take-offs, and are easy to build. The wing is of simple construction, as is the stab. Rudders are boom mounted, and the general aircraft is the minimum required for the tasks at hand. The engine is mounted in a circular nacelle, well braced to the wing, and ample in size for the aircraft. Displacements of .29 through .45 are suitable but extreme. A .35 is a better choice for free-flight R.O.W., while .35 to .45 mills may be used for R/C work, depending on the weight of equipment carried. Try smaller engines first, shifting to increased displacement engines as the need arises. Even a .19 would keep the aircraft airborne by hand-launch, so all you might loose is a water take-off with an under-sized engine. Better that than being initially over-powered for testing.

The general planform is easy to build, light, strong and a good dependable flier in the air. It can handle the power, and tends to trim out easily, free-flight or with radio. It is advisable to keep weight down as much as possible, for the smaller displacements. If more than single channel R/C is installed, it will require more thrust to reach take-off speed as mentioned.

Construction: Start with the wing, laying out all panels over a plan. The working surface must be flat, and all wing edges, spar stock etc. should be true. Select good quality wood throughout, medium grade sheet for the ribs, and pre-coat all end grain for a good cement joint. This is important on seaplanes. Gusset all panels, and add sheeting as indicated. Trim and sand to the desired airfoil.

Stabilizer: Assembly is similar to the wing, sizes indicated on the plan. Keep it light, straight, warp-free. Kick-up elevators may be added if desired. It is not necessary, but helpful at times to assist the break-off from the water with a touch of up-elevator.

Rudders: Of sheet, two required, slip into slots in the stab. The ship may be turned with one rudder, or both may be linked together to move as one with a rod arrangement passing through the stab.



IN A SQUEEZE

It's pretty discouraging. Right in the middle of a big building project, and out of cement. What do you do when you are out of glue? You wait. Wait until you can get some more.

Meanwhile your progress stops. Your plans gather dust. And you wait. Your dreams, your enthusiasm for this new model—they must wait. It's pretty discouraging.

The Academy of Model Aeronautics is waiting, too. It has plans gathering dust, and dreams and enthusiasm on the shelf. The AMA is out of glue, too. Cementing AMA together is its members. It has enough to build the framework, but not to finish the job.

There are over 100,000 model builders, but only 20,000 AMA members. An increase to 50,000 might be enough.

Let's help this kid get into the air.

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