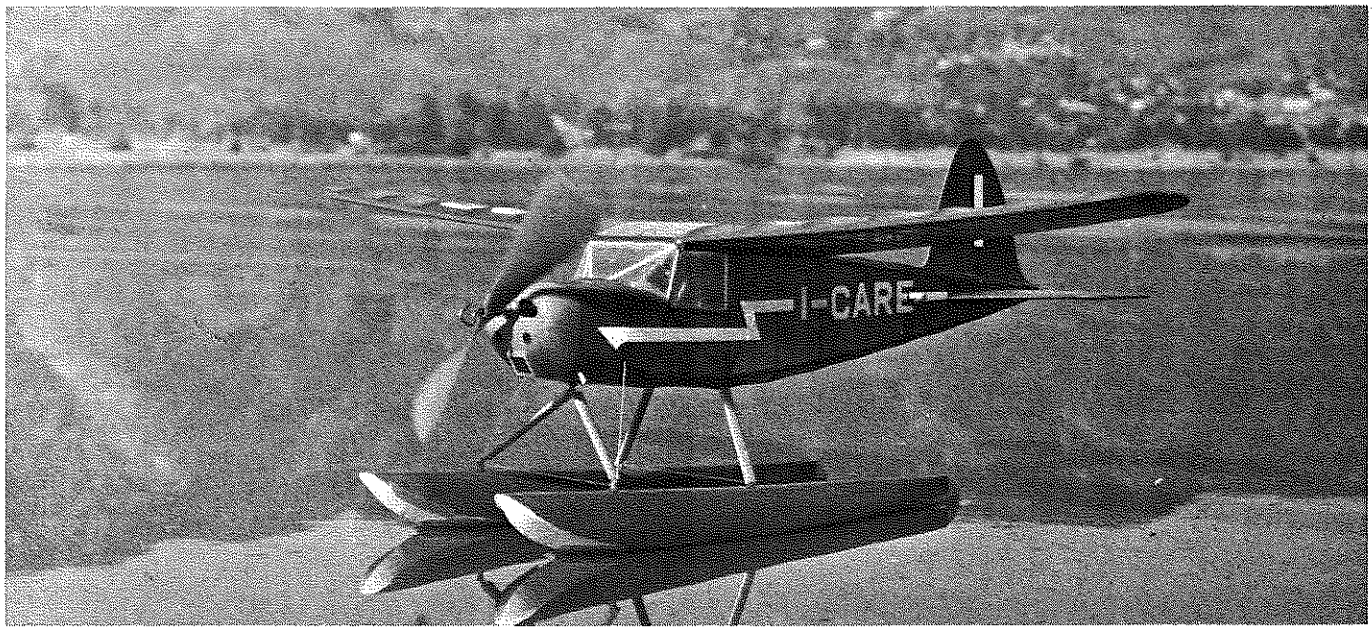
PHOTOS BY PHUDO




**The Macchi MB 308 at rest on the glass-like surface of Lake Elsinore on the morning of its victory in the Flightmasters' R.O.W. contest.**

# PEANUT MACCHI MB 308 IDRO

**Another 2-for-1 project, the Macchi was built at exactly double Peanut size, 26 inch span, so that the 50% reduction for the magazine is right on the button. Try 'em both. By WALT MOONEY.**

For the Flightmasters' Annual Seaplane Contest this year, this version of the MB 308 was selected as part of an effort to win the rubber powered event. To be successful a model must be as aerodynamically clean as possible, and be stable enough to absorb the relatively high power that is required to get a seaplane off the water. What was required in my judgement, was a high wing airplane with as few struts as possible, this said, "cantilever wing", and my choices narrowed down to two; either the Cessna Airmaster on floats, or the MB 308 on floats. I opted for the Macchi because it had an opposed engine instead of a radial, and because the strut system for the floats was much simpler. It happened that I had a photo of the real item with the license "I-CARE", and that suited my sense of humor too.

The model shown flys beautifully and did win the rubber scale event. Interestingly, second place went to a model of the Airmaster!

As has been the practice a couple of times before in MB, the model was designed with a 26 inch wing span so that when reduced in half, it is exactly Peanut scale. The 26 inch span model used 3/32 square longerons, so that 1/20 square can be used on the Peanut. Also, 1/16 sheet ribs were used on the large one, and 1/32 should be used on the small one. Stringers were 1/16 square on the large one so they should be 1/32 on the Peanut. I have found that Peanut Scale seaplanes are hard to R.O.W., mostly because the water is even further out of scale, so I have indicated the tricycle wheel landing gear on the plans for the Peanut enthusiasts.

The airplane structure is the same old standard; fuselage sides built over the plans, sides removed and separated, cemented together at the tail and built into a fuselage box by adding cross pieces at each upright. Formers are added to the top and bottom cross pieces and stringers set in place. The noseblock is solid balsa and the bottom cowl aft of the noseblock is also carved from block. The upper cowl, back to the instrument panel, is wrapped sheet balsa. Wing tips, horizontal tail tips and the vertical tail outline were laminated, using model railroad basswood. The tail parts are conventional, flat, built-over-the-plans structures, which have soft wood caps added to the top and bottom of the fore and aft sticks after removal from the plans. These are then sanded to a streamlined airfoil section. *(This is oft-times referred to as the "Stahl System". wcn)*

The wings utilize sliced ribs . . . on the 26 inch span airplane they are 1/16 thick and are sliced to a depth of 1/8 so 1/32 X 1/16 is just right for the Peanut. The wing is built over the plan with an 1/8 dia. dowel leading edge, the bottom of the ribs (1/16 X 1/8) and a 1/8 X 1/4 trailing edge. Obviously, the Peanut uses half size of everything. The wings are removed from the plan and the wing spar cemented in place. Then the upper parts of the ribs are trimmed and added.

The landing gear wires are installed in the fuselage structure sandwich style . . . between two sheets of wood.

The one (two actually) thing that is different in construction is the float or pontoon. This is virtually a full monocoque structure. That is, the skin takes all the loads, without any keel or longerons to help take loads. The floats were wrapped sheet balsa skins . . . one for the entire top of the float and four for the bottom; one on each side of the centerline forward of the step, and one on each side of the centerline aft of the step. Inside, there are formers made of 3/32 sheet, a 3/32 X 1/4 centerline member along the top of the float inside the skin, and a carved nose block. "A" grain balsa was used for the skins because it can be curved easily.

Cut out all of the formers and cement them in the proper position onto the centerline member. When this assembly is dry, cement the centerline member right in the center of a 3 inch wide piece of 1/32 sheet balsa. Now wrap the sheet balsa around the formers and cement it to them. If you picked your balsa grain right, it should be easy to wrap around the formers and present no problem except at the extreme aft end, where it will ordinarily split because it's just about folded double. Mine were

bent completely dry, and I'll now give away my trade secret. . . .

When anything is bent in a curve, the outside of the curve is under tension (being pulled apart), and the inside of the curve is under compression (being pushed together). When wrapped balsa sheets split, it's because the tension force is more than the balsa can take. The compression force tends to crush the balsa, but of course doesn't result in a split until it refuses to compress and therefore forces the tension side to fail. The way around ('scuse the pun) this problem is to temporarily (while the cement drys) make the balsa so so strong in tension that it can't stretch (or split) and will force the inside to crush as much as is needed. How? Easy! Use masking tape to cover the outside of the sheet balsa being wrapped wherever you expect a cracking problem. On these floats, that is over the aft 4 inches or so of the float. Just cover it with masking tape, proceed to fold it just like it was thick paper, and cement it where required. *(Good grief! The man's a genious! wcn)*

Trim this top cover sheet, after the cement is dry, to the proper shape as shown in the side view of the float. Now cover one side of the bottom. The piece of sheet balsa should be larger than necessary. Trim it so that the keel line along the center of the float bottom is straight in the bottom view. Then add the other side of the bottom, cutting the piece to fit on assembly.

The nose block for the floats is added last and carved and sanded to shape.

Covering is with Japanese tissue. All parts are carefully covered and doped. I put 3 coats on the wing and tail, 4 on the fuselage . . . including the *inside* of the wood parts at the nose . . . and about six coats on the floats. These last must be absolutely waterproof . . . it would be nice if the rest of the model were really watertight but thats tough to do. If the model dunks and tips over, get to it as quickly as possible, pick it up carefully and drain it as quickly as possible. Generally, if it wasn't in the water more than ten seconds, and if the nose block stayed in place, the model interior will remain dry.

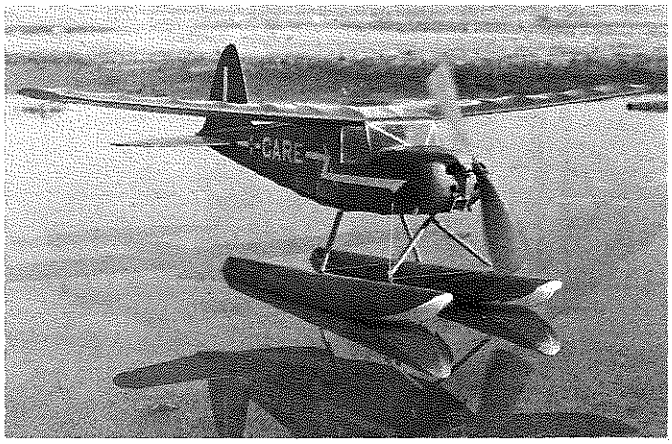
This model flew right off the board *(Must have been a wet board! wcn)* except for about ten takeoff attempts on less than 90% of full winds. The problem is, the water drag on a seaplane calls for about twice as much power to R.O.W. as it would take if the model were a land plane and rising off ground. With 8 strands (4 loops) of 1/8 flat rubber 18 inches long, the model will do 35 seconds after a water takeoff, if about 750 to 800 turns have been put in the motor. On 600 turns it will get off the water on most attempts. On fewer turns, it usually will just get on the step and run along to a stop. Sometimes it will lift out one float and then tip up and over, finally making like a Mississippi sidewheel steamer.

Most model instructions say to start flight tests with minimum winds and work up. This is okay if you hand launch for these early test flights. For R.O.W. takeoffs, however, use almost maximum winds . . . Less than this will almost surely result in a dunking.

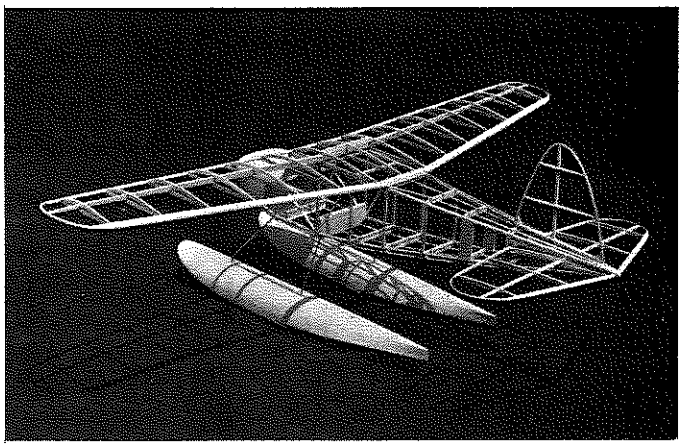
Aerodynamic adjustments are about 1/8 inch of washout at each wing tip, horizontal tail set as shown on the plans and essentially a straight vertical tail with no rudder offset. A slight amount of right water rudder was used to make the takeoff run straight. The model climbs in wide left circles, and glides in wide right circles. Landings on the water and on the beach were smooth and gentle.

The color scheme I used was all red with white letters, trim, and bottom of the floats.

Have fun with your Macchi MB 308 IDRO. ●



**Howdya like that license number? It looks contrived, but Walt actually found pictures of the real thing. Nice, clean lines.**



**When you read how easy it was for Walt to dry-form that one-piece float top, you'll kick yourself for not thinking of it. Another gem!**