

AQUA ANGLE

by Harold Stevenson

If you're a ukie fan who likes the water here is a model that will let you get the most out of that old swimmin' hole

• If you are a regular reader of this magazine you will probably remember the two earlier "Angles" that appeared in FM. The "New Angle" and the "New Angle III" were in the speed category. When Editor Bob Buragas announced he was looking for something "different" in a control-line seaplane the idea for the "Aqua Angle" was born.

This ship is strictly for sport and with its plug-in landing gear it may be flown R.O.G. as well as R.O.W. This greatly increases your flying site possibilities. The delta wing, with its ability to fly at high angles of attack, is a "natural" for water landings. The ship uses the N.A.C.A. tail planing hull for quick water take-offs. So if you live near a patch of water, get down to the workshop and start building for some real fun.

Begin by scaling up the keel, side, and bottom templates and cut out all the full-size parts shown on the supplementary plans. The wing, keel and subsequently the fuselage, are made as an integral unit. Slip the spars S-1, 2 & 3 in position through the keel and cement securely. Make sure these are

lined up and at 90° to the keel, both vertically and horizontally.

Cement ribs R-1 in position on the keel, being sure they are tight up against S-1 & 2. Next slide ribs R-2 through R-7 into position on the wing spars and cement. Note that R-7 is cemented to the tip ends of S-2 and 3. From 1/4" sheet balsa, cut the two oversize, leading edge strips, cement in place and then sand down to conform to the airfoil shape.

Now make up the elevator unit, install the control horn and fasten it to S-3 with fabric hinges. The control system is now installed with the 3/32" music wire line guide arm. This is securely cemented against the forward surface of S-1. Be sure the control system is free from binding.

Then cement the 1/16" x 1/4" hard balsa secondary spars in the notches provided in the wing ribs. Next, the 1/32" sheet covering is installed on the leading edge, but only on the lower surface of the center section. The top surface is not covered until the engine nacelle is in position.

The next step will be the installation of the hull bulkheads on the keel

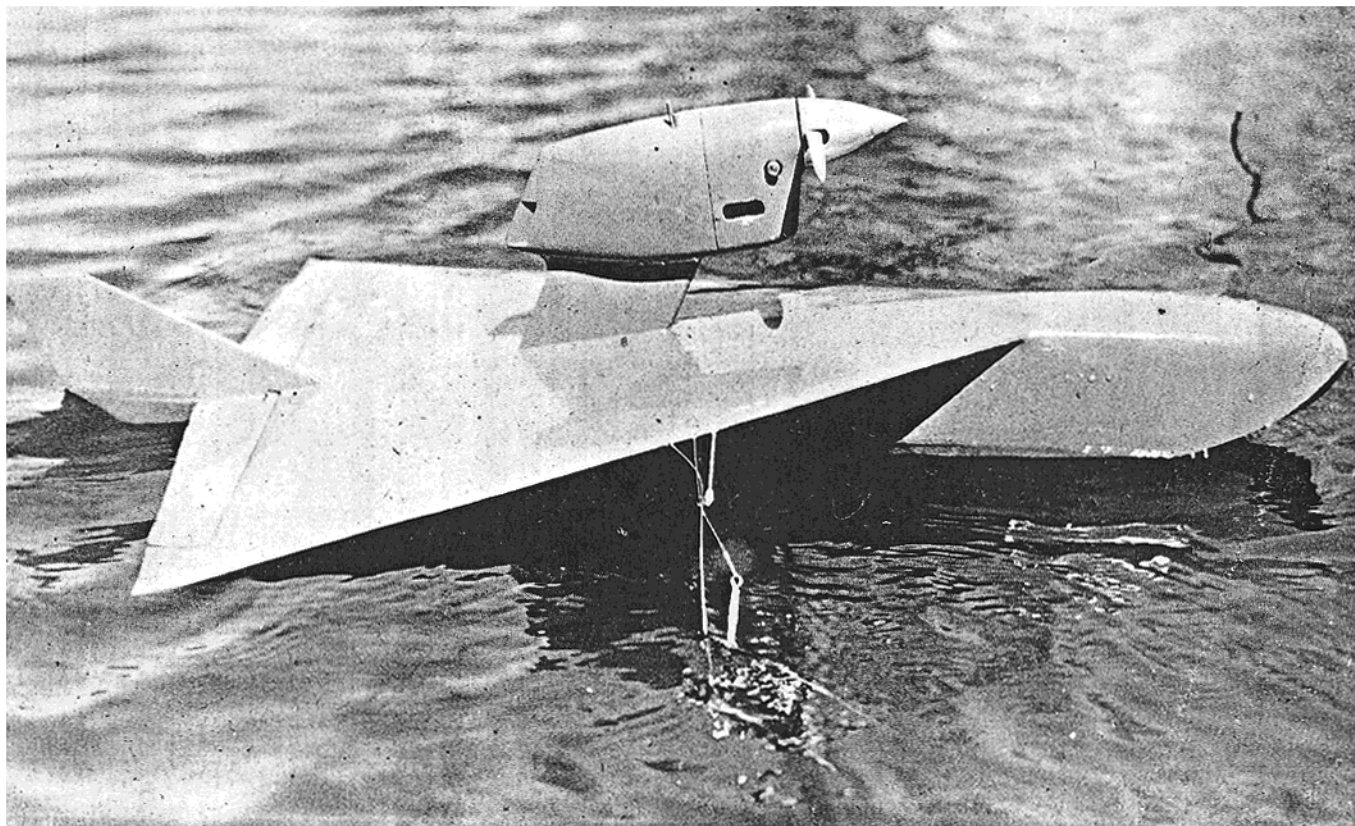
—B-1 through B-9. Be sure these are well cemented and at 90° to the keel. From 3/32" sheet, cut the hull sides and cement them in place. At this point, waterproof all the inside surfaces from B-9 aft. Shellac will do this job.

Make up the entire landing gear assembly as shown, and install it using cement liberally. Don't forget to put a drop of solder on each of the inside ends of the plug bushings to insure no water enters the fuselage.

Form the 1/16" music wire tailskid and install it on the 3/32" hull bottom. Cement the bottom in place and follow through by covering the step and bow sections with 3/32" sheet. Carve and hollow the nose or bow block and cement it in position. The upper area behind the bow block is filled in with hollowed block balsa.

Construct the compete nacelle unit as shown on the plans. Be sure the crankcase bolt heads are recessed in the firewall. The engine is mounted radially by means of the 1/8" aluminum engine mount, and fastened to the firewall by two 6-32 machine bolts.

It will be noted that the nacelle (Please turn to Page 48)



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pylon fits over the keel saddle-fashion. Slide the whole engine unit back and forth on the keel until the correct center of gravity is found, and then cement the nacelle in place. Install the $\frac{1}{8}$ " balsa sheet stiffeners, finish covering the center-section with $\frac{1}{32}$ " sheet and install the rudder.

The $\frac{1}{4}$ " sheet wing tips are cemented in place and the wing is covered with silk.

Sand the entire model, and give two liberal coats of clear dope. The silk portions receive four. This is followed by two generous coats of "Dulux Preparakote" which is worked down to a glassy finish with 400A wet sandpaper. The color coat is Dulux Auto Enamel, which makes an excellent finish for a seaplane with the added advantage of a high gloss. The original "Aqua Angle" is a bright coral in color, which is very striking.

The ship may be flown from a boat or standing on the shore. If doing the latter, you had better be good at whipping, for if the engine quits while you're over the "land" side of the circle, you are in for a scraped bottom.

Whatever you do, don't dive her straight in the drink, hot engines and cold water don't mix.

BILL OF MATERIALS

(Balsa unless otherwise specified)

2- $\frac{1}{8}$ " x 4" x 36"	.....Keel, R-1, bulkheads, rudder
3- $\frac{3}{32}$ " x 4" x 36"	.....Hull sides, bottom, ribs
4- $\frac{1}{32}$ " x 4" x 36"	.....Wing cover
1- $\frac{3}{8}$ " x 3" x 36"	.....Elevators, S-3
1- $\frac{1}{4}$ " x 3" x 36"	.....S-1, tips, leading edge
1-2 $\frac{1}{2}$ " x 3 $\frac{1}{2}$ " x 10"	.....Nacelle, cowl, nose block
2- $\frac{1}{4}$ " x $\frac{1}{16}$ " x 36"	.....Secondary spars
6- $\frac{1}{32}$ " x $\frac{1}{4}$ " x 36"	.....Cap strips
1- $\frac{5}{32}$ " x $\frac{1}{2}$ " x 22"	.....(bass wood).....S-2
1- $\frac{1}{8}$ " x 6" x 12"	.....(plywood).....Nacelle mounts, landing gear mounts, firewall and bellcrank mounts
1- $\frac{1}{8}$ " x 1 $\frac{1}{2}$ " x 2"	.....(aluminum).....Engine mount

.005" shim brass; $\frac{1}{32}$ " i.d. brass tubing; $\frac{3}{32}$ " i.d. brass tubing; scrap pine; $\frac{1}{16}$ " piano wire; $\frac{3}{32}$ " piano wire; 2" wheels; 6-32 round head bolts with nuts; bellcrank; clear dope; auto primer; Dulux enamel; silk; 1 $\frac{1}{2}$ " Froom spinner; K&B Allyn Torp. .19 or similar engine; propeller to suit; fuel tank; plastic tubing.