

DO YOU HAVE an urge to get outside with some guys of like interest for some exhilarating activity related to flight? And that without having had first to invest a mint in cash, or spend many hours at the work table. Build this little jewel and happily satisfy that yearning. At the same time you'll be creating a quite competitive flyer too. This model won a few club contests.

Of my five or six gliders of different designs, Rain Crow is definitely superior. It displays a beautiful pull-out—or you might say recovery—from a viciously hard righthanded launch, followed by a stable left-circling glide. Its glide is, in fact, as stable or more so than any glider I've ever flown, particularly in windy weather.

As for the design, it can't be claimed that the Rain Crow's enhancing qualities were wholly arrived at by approaches which were very scientific. Mother Nature assisted quite a bit. How is this possible? This glider was lost about dusk. It rained that night, warping the wing and tail terribly. After an only partially successful attempt was made at removing the wing warps, simply replacing the tail, the glider again was flown. A remarkable pull-out immediately became evident but the glide was an ever tightening left circle culminating in a spiral dive.

Happily, deflecting the small vertical tail in a manner which would ordinarily induce a right turn was all that was required to stabilize the left-glide circle without removing it. A tiny amount of weight added to the left wing tip may be found to improve the launch phase but is not a prerequisite for excellent flights.

### Construction

Select medium-grade balsa for the wing and tail. Nothing special, just try to select wood that doesn't have mushy areas or irregular grain. The tail surfaces may be quickly sanded to 1/20 in. thickness from 1/16 in. sheet if you can't secure 1/20 in. stock. Actually, some so-called 1/16 in. stock is nearer to 1/20 thick.

The wing requires the most hand work, but this can be reduced considerably if you have a small wood plane to shave the wing down to somewhere near its final contours. Since the wing has some twist the trailing edge will be raised slightly above the horizontal in some areas and should be inked on the edge of the wing-blank. Refer to the drawing for the correct amount. This will give you a reference line to shave for the wing's upper and lower surface. Note that there are different degrees of twist in each wing panel. The drawing also indicates a small amount of undercamber to be cut into each panel. Once you get the wing contour shaved to within 1/64 in. of the final contour, take about a 4-in. square piece of medium sandpaper (grit about the size of table salt), wrap it around a sanding block, and sand all the shave marks out of the wing surfaces.

Then use fine grit sandpaper to sand the wing until no sandpaper scratches remain from the previous sanding. Finally, using extra fine paper, sand the wing contour till there are no scratches whatsoever. Employ the same sanding procedures in the case of the tail surfaces. When sanding down

the wing and tail surfaces always use a sanding block. One, two or three inches wide and three or four long can easily be held in your hand with a sheet of sandpaper held tightly wrapped around it. The use of a sanding block cuts down high areas left by shaving, and also tends to

A highly buoyant outdoor hand launched glider that will sniff out every bit of lift.

# RAIN CROW



Reid A. Hull

The author demonstrates his launching method—a hard right-hand toss, which is followed by a beautiful pullout and stable left circling glide. Glide is quite stable in windy conditions. Tricky adjustments were actually learned after the prototype was lost overnight in the rain!



For a minimum of expense Rain Crow returns a maximum of exhilarating flying fun. The wing does have different amounts of twist on each panel at various stations—and a bit of rudder offset. Slim fuselage is cut and shaped from spruce, so it's tough enough for any scramble.

sand more uniformly.

The spruce body profile is now laid out and carved to shape with a sharp knife. Next, trim the body cross sections down as the drawing shows and sand the stick until no scratches are visible.

The wing dihedral is assured by beveling the root of both wings so a good fit is possible at the correct angle. Cement and pin the wings together, being careful

to get the panels accurately aligned with each other, while taking on the correct dihedral.

With wing and tail surfaces sanded to shape, one coat of sanding sealer should be applied to all spruce and balsa surfaces. Once the sealer has thoroughly dried use extra fine sandpaper to cut all the stiffened wood fuzz of the surfaces. Finally, apply two coats of quite thin clear dope

to all surfaces. If you wish, you can mix in about 20 percent color dope with the clear used for those last two coats.

The wing and tails are now cemented on the spruce body, and the finger rest of spruce to the bottom of the wing next to the body. Ambroid is my preference in cements available where you desire a waterproof cement that doesn't get brittle in a few months. You do need to use a primer coat of cement where end-grain is to be joined, and extra strength is required.

When flying the glider, launch it in the usual manner, with the right wing tip depressed four or five inches, directly into the breeze. Try for more of an overhand heave as opposed to an side-armed type of launch. To remove or add minor deflections to the tail trailing edges for fin-trim adjustments, dampen them with the lips and hold the desired deflections in for a few seconds. Since dampness causes wood to expand it induces desired warping when the correct surface (upper or lower) is dampened.

As a parting note I will mention that the rudder was replaced after the tail got knocked off, then replaced with one a 1/4 in. shorter than the drawing shows, I suspect that the glider then was even more airworthy, but can't be sure.

Have a ball with Rain Crow.

