



MONARCH

By **BILL YOUNG** . . . Not to put down the fine performance of most "plank" type flying wings, this tailless bird has a graceful beauty that deserves special attention. Worth the extra building effort.

• As the editor of this magazine correctly remembers, this flying wing got its start with a design published in the 40's, probably (*definitely. wcn*) in *Air Trails*. He, like I, built one and flew it. He says his didn't. Mine did. (*Not quite right! Never actually completed it. Built back in escapement days, I gave up on it because of inadequate control availability. Now it can be done. wcn*) Over the years when ever I've been bored or stuck in a rut, I have resurrected, modified, improved and built different sizes of this basic layout. I'm not sure how closely this ship follows the original, as I long ago lost the original article. So whoever it was who started me on this journey . . . many thanks.

As the name implies, this ship is majestic in flight, and resembles its namesake in appearance. I have been interested in flying wings since early in my modeling career. I find them beautiful, even if I and others are unable to make them perform as well as the conventional layouts. Once trimmed, the ship is very stable and easy to fly. Yes, every rib is different, and the washout section doesn't lend itself to the stacked rib technique. However, I believe that you will find the effort well spent.

WINGS

Start by cutting out all of the parts for

the wings. This is the most complex part of the ship, and it helps to do it first. The structure does not require the use of heavy or extra strong balsa wood. I use Hot Stuff for all assembly. Don't forget the vertical grain webbing between the spars as shown. Plug the ends of the wing mounting tubes. Inset the 1/16th balsa sheeting at the root of the wing and the sheeting where the push rod exits the tip. Leave the exact location of the tube-in-tube control linkage in the root rib until you have determined the location of the elevator servo.

FUSELAGE

The width of the fuselage is determined by your radio gear. If it is wider than the Futaba S-20 servos and two-channel receiver shown, now is the time to make adjustments. Cut out all parts and assemble the main fuselage. Lay out the location of the wing wires and servo mounting beams. Carefully bend the wing wires to a 10 degree angle and install them. Use some scrap balsa to fill in around the wires. Cut out the wing root pieces and assemble. Drill holes for the wing wires, slide the assemblies over the wires and glue in place. Use of a dowel wrapped with sandpaper will make the shaping of these pieces easier. Sand the top and bottom of the fuselage to round shape. Paint the cabin area

black and install pilot if desired. Finally, install the sections of the cockpit.

FIN AND RUDDER

Cut out all parts of the fin and rudder and assemble. Sand to airfoil section and install on the fuselage. Install rudder control rod and determine the exact location of the elevator pushrods now. Now's the time to make a final inspection to make sure that all wood work is complete and sanding finished.

FINISH

Cover with your favorite covering and color scheme. Install radio gear and hook up the push rods. Use your favorite method of hinging and install the elevators and the rudder. Check the balance point and adjust, if necessary. I use 30 degrees rudder deflection and 20 degrees elevator deflection. Don't forget the antenna. I run mine inside of one of the elevator push rods.

FLYING

Make a few hand launches to check the trim. Make sure that the elevators are not trimmed differently. They work just like conventional ailerons as well as elevators. Balance them for level flight. Now you are ready for a tow launch. The controls are fast and sensitive, so go easy on the first few launches until you get the hang of it. Then go looking for a thermal or a slope. •