



spectral

ANDY McAFEE'S

● After flying single channel for about a year, and flying many different designs, I wanted to design something that would fly good. During a meeting of the San Fernando Valley Silent Flyers, Jerry Krainock introduced a set of plans for a two channel, Jedelsky wing glider. I wondered, since I have not had much design experience, if I could scale down the plans in order to have a plane that was sort of my own, but easier to build.

This was prototype No. 1. It had a four foot wing span and weighed eight ounces. I thought perhaps the flying characteristics could be improved by adding a different wing. I decided to use the Micro Fish wing because it had a constant chord. With this wing the plane flew much better. This was prototype No. 2. Next, the wing was made lighter and a few other modifications were added. This brings us to the present design.

The Spectral is very conventional, easy to build, for the beginner or expert, flies outstanding, and best of all, it is inexpensive. The Spectral has a fairly fast but smooth glide, which adds to its high performance. The wing span is 57 inches and the all-up weight is approximately eight ounces. The glider is capable of doing loops and other stunts. With it, I have achieved LSF 1 and practically LSF 2. We have also done well in contests.

FUSELAGE

Start by selecting a medium light piece of 1/16 X 3 inch balsa. Then cut out the two sides, making sure they are exactly the same. Pin the sides down to a flat surface and glue in all 1/8 inch square longerons, wing braces and cross pieces. Next cut out all bulkheads from 1/8 inch sheet.

The fuselage is assembled directly over the plan for ease of construction and proper alignment. First install bulkheads B and C in place, let dry. Then join the tail and add cross pieces. Next,

glue in bulkhead A, and when the whole thing is dry, take up and sand the edges, add wing dowel gussets. Next plank the bottom only. Cut the actuator platform from 1/16 inch ply and install. Now install the front and rear torque rod bearings. Install torque rod using actuator for alignment. Now plank the top and epoxy the hose block in place, shaping it to the contour shown. Round all edges of the fuselage. Construct the hatch cover from 1/32 inch ply and add the 1/8 inch square braces.

TAIL SURFACES

Stabilizer, elevator, fin, and rudder are all cut from light 3/32 inch sheet, sanded to shape, hinged, and glued in place. Watch that alignment!

Now it is time to fiberglass. Of course, it isn't needed if you like to repair a lot. Don't think the fiberglass is too heavy, you need the weight in the nose anyway. Refer to the February 1972 issue of MB for Le Gray's instructions. Do what it says except don't use 4 ounce cloth; use Sig lightweight fiberglass cloth.

WING

The wing is very easy to build as there are no tapered wing ribs to mess with. Make a 1/8 inch ply rib pattern and cut out 30 ribs. Stack them together and sand, then, with a razor saw, cut the spar notches. Next notch the trailing edge 1/8 inch for the ribs. Pin down leading and trailing edges and bottom spar. Glue in all ribs except at the dihedral joint. Let dry. Then add top spars and let dry.

Remove from board and sand leading and trailing edges to shape. Now sand in the proper dihedral, trim spars to fit, and epoxy the dihedral braces in place, doing the tips first and then the center. Add in the dihedral joint ribs and gussets, and sand the whole thing smooth for covering.

RADIO INSTALLATION

The way I mounted my radio was to

put the battery all the way up front, the receiver next to bulkhead B and the actuator under the wing. If your system doesn't have connectors, you will have to modify bulkhead B in order to slide the actuator through. Be sure to use foam to protect your equipment.

COVERING

The model can be covered in many ways: The wing in Silkspan, Japanese tissue, or light weight silk Monokote. The fuselage can be covered the same. I used transparent red Monokote on the wings and stab. The fuselage and rudder were covered in Japanese tissue and then painted white. There are two very, very important things: No. 1 is to put in at least 3/8 inches of washout in each tip. No. 2 is to finish the wing in a dark color for visibility.

FLYING

Before you go out for the first flight, you must make a few preliminary checks. No. 1, you must make sure all controls are working properly and all surfaces are aligned. Next you should balance the plane approximately as shown. Now you should try some test glides and adjust weight or incidence to accomplish a smooth glide just below a stall.

Since the plane is too small for most electric winches, you will have to construct a means of launch. For one, I use a hand tow consisting of between 100 and 200 yards of light nylon or fishing line. This amount seems sufficient enough for a good launch. Another way is to use a high start, consisting of approximately 100 feet of 1/4 inch flat rubber, connected to 100 yards of light nylon or fishing line.

Flying single channel is not as easy as one might think. Rudder-only flying is somewhat of a lost art these days. It takes a little bit of practice in order to fly it fairly well. I hope you have a lot of fun and GOOD LUCK! ●