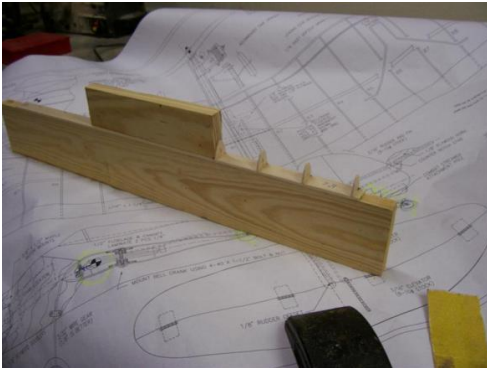


Steps to a Ringmaster Lite Leading Edge

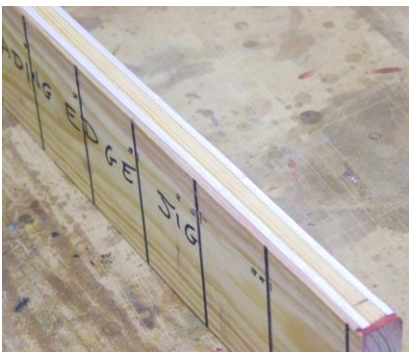
Note: It is best to make the Leading Edge in two pieces and join them after completion. Below, when we talk about the LE it means the half of the completed full length LE.



1. Make a jig from a board or strip of plywood $\frac{3}{4}$ "X 3.5" and a little longer than the LE. Note the jig in this photo is made from a **very straight** piece of pine wood. For the S-1 LE, it is better to use $\frac{1}{2}$ "X 3.5" so as to have more room for the overlapping formed piece, as will be shown later in these instructions.



2. Use rubber cement, I put a small $\frac{3}{8}$ " diameter dot of rubber cement at each rib station or.....



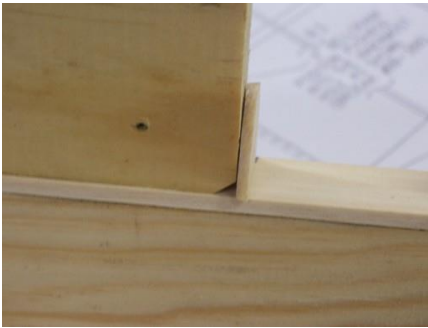
I prefer double sided masking tape (or from Wal-Mart, double sided "Duck" tape from the paint dept.) to hold the spar to the jig. For the tape, I use two $\frac{3}{16}$ " strips as shown in the picture.



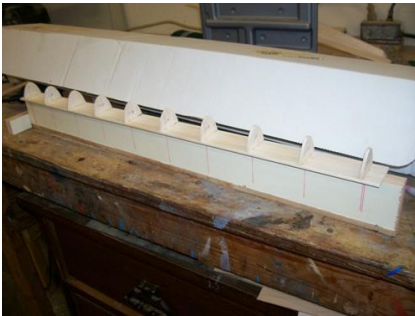
3. While the rubber cement is wet, place the pre cut and beveled spar on the jig and hold down with small weights of some sort until the rubber cement dries, about 60 minutes. If you use the double sided tape, just place the spar in position and press firmly down.

Note: 1. It is highly desirable to first cut the spar about a 1/4" wider than the final width. This lets the wood relax and stress relieve any internal stress. NOW, cut to the size desired. Otherwise you may get a spar the correct width, but one that bows badly.

Note: 2 Be sure to sand a slight bevel on the top and bottom of the spar to conform to the angle of the riblet. This will allow the formed LE sheet to smoothly blend in as it covers over the riblet to spar joint.



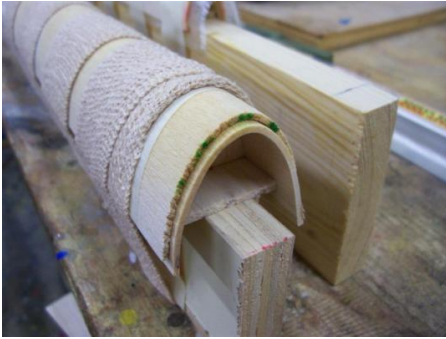
4. Use a square piece of wood to hold each riblet in place and CA glue the riblet to the spar. CA **both** sides of the riblet. Note the notch in the wood alignment piece to keep it away from the CA glue area.



5. Glue all the riblets in to position.



6. To mold the A-grain LE planking to the proper shape, first wet with hot water or brush ammonia on one side to soften the wood. Note that you can make 3" wide balsa into 4" wide by gluing on a 1" strip and it will work just fine.



7. Once the balsa safely bends around the riblets, secure with two strips of masking tape and then wrap lightly with an elastic athletic wrap to hold in position. I sometimes do two at a time as shown in the photo, but one at a time works best. Let dry about 24 hours before removing.



8. I covered the inside of the formed LE mold with epoxy finishing resin and .75 ounce fiber glass cloth by brushing the wet finishing resin on the wood, then dry brush the fiberglass on. I then coat the riblets and the outside edge of the 1/8" spar with the wet epoxy and while everything is still wet and uncured, I wrap the elastic bandage over it all to hold it in position. Be careful not to wrap too tightly as that can cause sagging between the riblets.

Note: for dope finishes it may be easier for you to glue the formed LE balsa to the riblets and then cover the **outside** of the formed LE with epoxy and glass cloth. Brush the epoxy on the wood, then dry brush the fiber glass to the wet wood. After it cures, put a second coat on and then rub most of it off with a paper towel. The final finish should be dull and without a sheen. (The inside of the spar does not need a layer of fiberglass for strength, but it will add dimensional stability to the LE without any significant weight gain.

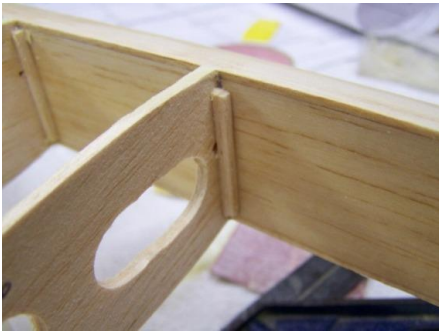


9. When everything is finished curing, gently, slowly and firmly roll the LE off the jig. Under pressure the rubber cement will slowly give up its grip. If the tape holds on too tight, just dribble a few drops of solvent down the edge of the jug and spar, next to the tape. This will soften the grip in about a minute. I use "charcoal starter" fluid, which is just the chemical naphtha. Any solvent that partially dissolves the sticky area will work. Acetone or a good paint thinner ought to work just fine.



length to fit the plans exactly.

10. Sand the ends smooth and square, while adjusting the



11. The back of the LE can be sanded smooth or left with a small over-hang of the fiber glassed reinforced sheeting.

For a smooth back edge, a 1/8" square balsa gluing strip is a method that works well. See top left picture above.

I prefer to leave a small over-hang of 3/32" and notch it at the rib positions as shown in the top right photo. I cut the notches by gluing a strip of sandpaper along the edge of a piece of balsa, the thickness of the rib, and sanding the overhang to create the notches. Just glue the ribs in position with no additional reinforcing.

Remember, do **not** notch the 1/8" spar.

Helpful hint: If you develop a slight bow in the LE, it can be straightened by brushing the outside with a light coating of ammonia and then blocking the LE straight while it dries, about 24 hours. Or you can use my method and just pull the LE across your abdomen in the opposite direction of the slight curve, for a few minutes. The LE will usually straighten right up!