

Making Perfect (or nearly perfect!) Ribs for Small Models

by Don Hockaday

To make ribs for small airplanes, try the following.

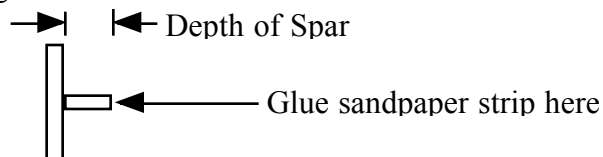
1. Cut blanks from 1/32 or 1/20 "C" grain 4-6# balsa. (Note: I buy my wood from Lone Star. They will select grain for you at a slightly higher premium) These blanks are usually about 1/2" X 4". You will need a blank for each rib plus a few extras.

2. Glue the stack of blanks together (it will be 1" to 1 1/2" wide) with plain ole white glue, diluted 50/50 with water. Put a weight on top of the stack and let the glue dry.

3. Make two airfoil templates out of 1/64" ply (Ed. Note: Recommend lining the edges of the templates with thin CA to resist sanding later), glue the templates on each side of the stack of blanks after squaring off the ends with a sanding block.

4. Whittle the block with your Exacto to about 1/32" above the rib profiles and finish with fine sandpaper down to the 1/64" templates.

5. If you so elect, cut your spar notches with a tool made from 3" long balsa strips either 1/16" or 3/32" wide to which sandpaper has been glued. You can make it for two different depths by having a sanding bar on each side.



6. After you finish, drop the block into a bucket of water (mine is an ice cream container).

7 The next morning you will have a swarm of ribs swimming around in your bucket. (Ed. Note: Hot water will make the glue dissolve more quickly, but it may still take more than 24 hours for the ribs to separate). Remove them and arrange them on paper towels, then dry in the kitchen oven set on low heat (warm). They will dry in about an hour. (Ed Note: I followed Don's method, and blotted the ribs on paper towels, then put them on a non-stick cookie sheet. They dried in about 20 minutes in a 175° oven, turning them after 10 minutes.)

Conclusion: The white glue will add substantially to the strength of the thin ribs. The Russians use this method with metal templates to make perfect rib sets for F1A and F1B models.

Note: You can also make tapered wing ribs by this method so long as rib spacing is constant.

(Editor's Note: I used this method to build the Dime Scale Ryan M-1 and it worked beautifully, making the extremely soft balsa ribs much stiffer. It worked so well on the ribs, I smeared diluted white glue on the soft, fragile formers, let it dry, then soaked the glue off in water as described above. The process left the formers much stiffer, and on my 1/10th gram sensitive scale, I could not measure any weight gain.)