Last month, we discussed the first stage of bending the ribs, the centre bouts, and preparing the corner blocks to accept the upper and lower bouts. Once all four corners have been cut back to the line, and you have four beautifully neat (!) razor edges — each pair equidistant from the centre line — you can now continue the bending of the ribs.

Check...
• glue on
• temperature of iron correct.

You already have the start of the curve for the lower corners. Adjust these until they sit comfortably in the blocks. You can allow the radius of this curve to be slightly flatter than that of the block, as this will ensure plenty of clamping pressure at the very tip.

Make sure that the lower rib extends past the razor edge a little way, to allow for a good finish from the chisel. A couple of millimetres will suffice. Now reverse the rib against the strap, so that the iron is to the inside of the rib, and applying a moderate amount of steam, gently bending to suit the mould. You will find it helpful to make a small pencil mark where the rib leaves the corner block, so that you can reposition accurately in between trying for fit.

Make the curve of the rib slightly flatter than that of the mould, so that a slight amount of tension is needed to hold the rib in position. This will ensure that the rib sits firmly against the mould. If your bending is ‘too accurate’, then there is a danger that the rib will pull away a little when you are applying the clamps. Lightly clamp each lower rib to its corner block, pull each one round to the bottom block, and carefully mark the centre line. Mark a vertical line at this point on each rib, and plane back to this line, slightly undercutting the joint as shown in figure 5.1.

Gluing up
Check this joint dry, in position on the board. You should have a joint that is virtually invisible.

When all is well here, it is time to glue up.

You will find it a great help to tape the joint between the two ribs together, under tension. Overlap the two ribs by about 2 - 3mm, and tape them together with masking tape on the outside; now fold them back against each other, line up the ends, and straighten them out. The ribs will now have no tendency whatsoever to slip apart under the action of the clamps.

I must confess that this is a trick that one of my students taught me, and it has saved much frustration!

Now to glue the ribs in place. With everything at the ready, make sure the centre lines on the top of the bottom block and at the joint of the ribs are visible. Apply the glue as before to the bottom block. Position the ribs, making sure that they sit on the board, and clamp up.

Again, use the minimum pressure you can get away with so as not to distort the rib.

Now glue the other end of each rib to its corner block, again making sure that the rib is tight to the baseboard. Make sure also that it fits hard up against the mould, and doesn’t slacken off as clamping pressure is applied to the corner. We are now free to prepare the ribs for the upper bout.

Upper bout
In order to ensure that the figure or flame remains symmetrical, we must remember to turn one half of the upper rib strip inside out — refer back to the third article, figure 3, and to figure 5.2 of this one.

You will see how it is aesthetically desirable to maintain the slope of the figure from the lower to the upper bouts. Of course, if the figuring is vertical (or very nearly so) then we needn’t bother with the above: just proceed with the sharp bend in the centre, cutting at the centre line and using these curves for the corner blocks, as we did for the lower bouts.

Our job is much easier here: we do not need to join the ribs at the centre line, as the neck will be let into the top block ...
eventually. Have the ribs finish at about 5mm either side of centre — that will suffice.

Reversing a rib

Assuming that we need to reverse a rib to ensure the continuity of pattern, then we proceed as follows. I tend to start with the left upper rib, no real reason — I’m just a creature of habit, I suppose!

Gently wrap the strip around the mould to ascertain where to bend the curve for the corner block, starting with the end about 5mm out from the centre line. Double check that the slope of the figure is as you want it, matching the centre and lower bouts. Bend this curve as before, then cut away the surplus. Complete bending the convex part of the rib as before.

The end you have just cut will now be positioned at the top block — it doesn’t matter if it curves into the block a bit, as it will soon straighten out. Mark out the position for the right corner block curve and bend this before removing the surplus end. Complete the bending as above.

Glue the ends to the top block first. The same precautions apply as for the lower bouts. Finally, glue the top corners in place, ensuring a tight fit as before. Remember to clean off the glue as you go.

Linings

Now for the linings. These are strips of Spruce or Willow — which I prefer, as it is less prone to splitting. They reinforce the rib ends and provide a greater gluing area for the back and belly. Figure 5.3 shows a sectional view: note the end-grain direction and finished shape.

This shaping is all done in situ, as it is easier to clamp while it’s still of rectangular section. The material should be prepared initially to 8 x 2.5mm.

The upper and lower bout linings are fitted with just a butt joint between their respective blocks; the centre bout linings need to be let in to the corner blocks to give added security, as if the glue joint ever fails, at least the lining will stay put, and not spring out. Study figure 5.4 to see how this joint is made.

I would highly recommend that you spend a while practising this joint in the end-grain of some scrap wood, as you don’t get a second chance on the actual blocks!

For the centre bout linings, mark out as in figure 5.5 at each corner block, and — using a thin bladed knife, such as a Stanley type — make two cuts. The first should be flush with the rib, with the second as per your marked line. Incidentally, it is much easier to accomplish this cut if the bevelled edges of the knife blade are ground back as in figure 5.6 (†).

You should now have a clean V notch, whose widest point is the thickness of the lining. Repeat this for the other three corners.

Take your lining material and, after bending the end to match the curvature required, cut it back to 45 degrees. Chamfer to a sharp edge to match the notch in the block. The result should look rather like a firmer chisel, with a skewed cutting edge — albeit with a bent blade!

Note that it is not necessary to use steam for bending the willow, as it is usually flexible enough without. Try out varying temperatures if necessary.

Position this lining in its appropriate block, pushing it fully home. Judge where to make the bend for the neighbouring corner, and make this bend. You will find that if you overbend, it is relatively easy to obtain the correct curvature by straightening out the lining material to suit.

Once the lining is to the correct curvature, cut the second end to fit the block as before. Cut this a little overlength, and gradually trim it back until when the ends are fully home in the blocks, the lining stands proud of the rib by about 0.5mm. Be prepared to have several attempts — just be sure that the blocks are cut accurately, and then cut the linings to suit the blocks and not vice versa!

Upper and lower bouts

After the centre bouts comes the easy part: the upper and lower bouts. Start with the lower bouts as, if you cut these too short, they can then be used for the uppers!

Make the bend to suit the corner block first, then reverse the lining against the iron to continue the curve to the end block. A firm fit is required, with no gaps between lining and rib; but equally, no great force is required either.

Assuming that the linings all fit perfectly, you will need to obtain the clamps. These can be bought at great expense or, if you prefer, at negligible cost, the job being done quite effectively by a packet of the old fashioned wooden spring clothes pegs and a packet of small rubber bands. The choice is yours!

If you choose the latter course, all you need to do is cut the tips of the pegs off, and flatten the inner face of one side of the peg, as in figure 5.7.

Make up enough pegs to fit side by side all around the ribs. Note that you will need enough for one complete set of linings only, as the second set of linings will not be made up until the back has been glued to the ribs and the mould removed. Now twist the bands around the ends of the pegs to increase the clamping pressure, and there are your clamps — as simple as that!

You will no doubt notice from the accompanying photo that I am using nylon screw clamps. These are very useful, and they are I believe available from medical suppliers, their use being to clamp drip tubes and such. If you manage to obtain these, the raised ridges on the internal faces will need to be cut away.

Glue the linings in place, coating the lining and not the rib, and clamping up as quickly as possible. Make sure that the linings remain slightly proud of the ribs, so that no gaps occur when the rib structure is faced up prior to gluing to the back. Don’t forget to clean off surplus glue.

Leave the assembly to dry thoroughly, and then cut it to profile, finishing off with (dare I say it?) abrasive paper. This is one of the few occasions when it is allowable. I use a modified Stanley knife to cut back to the approximate profile. Figure 5.8 has the details.

Be sure to radius and then polish the end: it will then be unlikely to damage the inside of the ribs.

Trimming

The only thing left to do now is carefully to trim back the ends of the ribs to the joint line, making sure the angle at the tip is parallel to that of the corners on your outline template. You can use either a chisel, or the block plane — but take care that you don’t chip the edges.

The next article will be concerned with jointing the back and belly, and the initial shaping of the back. In the meantime, please write if you have a query, if you require plans or details of tuition or materials price lists.

Please remember an SAE or an international reply coupon if you’re writing from abroad. I will try to answer queries in future articles to benefit all readers.

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