MAKING AN EDGE II

Jan Špidlen casts light on his purfling technique, in the second half of his two-part series

Edgework and purfling are so inseparable in my work that I can't describe one without the other – I have to write about both at once. By the end of the first part of the series (The Strad, July 2005) I had completed the outlines of the plates on the temporarily closed body. I won't touch the outlines again from now on and can take the body apart. The next step is hollowing the channel around the edge of the violin.

It's best not to gouge right to the edge in the middle bouts

1 The size of the gouges and the depth of the channel are critical. For the upper and lower bouts I use a gouge with a radius of 13mm. I control the depth by measuring the plate thickness in the middle of the channel – its thinnest point – with callipers. I gouge the upper and lower bouts down to 2.9mm at the back and 3.1mm at the front. For the middle bouts I use an 8mm-radius gouge and leave the plate slightly thicker, going down to 3.1mm at the back and 3.3mm at the front.

I do not gouge right to the edge at the middle bouts, as I do with the upper and lower bouts, but I leave a 1mm strip. If you cut all the way to the edge with this smaller gouge, the final edge height is too small. If you use a bigger gouge to compensate then you go too far into the arching and if you simply don't gouge as deep, the channel would be too flat. I believe that the depth of the channel is important for the sound of the instrument. Having a lot of wood along the edges makes the body stiff and harms the sound. I've often noticed how the plates of rare, old instruments are delicate and thin in these areas.

Photos: Jan Špidlen

Once the channel is completed, the arching can be finished roughly

2 The channel should flow naturally into the corners. Sometimes it's difficult to gouge through the flames of the maple – you won't be removing much more wood after this, so it's important to work carefully and avoid chipping. After the channel is completed all around the plates, the arching can be finished roughly; but no scraping yet.

3 Next I inlay the purfling into the channel. I know you normally cut the purfling channel into a level surface, but with an edge height of nearly 5mm the channel would be very deep, the purfling very high and the inlay process would be very awkward. I don't think the old masters worked this way. They thought and worked very straightforwardly and I try to follow this example. Cutting the channel into the arch is not problem at all, I've found.

First I cut the gap with a double-bladed cutter, set so that the edge width is about 3.8mm. Then I cut the channel down to about 2mm using a knife that I made specially – it's sharpened all around the blade and the point is rounded. I can cut in both directions, and even vertically, or rock it in the difficult parts, over the hard grain of spruce, for instance. I try to shape the corner joints according to the model (a Strad on this occasion). If the corners are shaped well, no problems should arise and the points should end within 2mm of the edge of each corner.

My custom-made knife is sharpened all around the blade to help cut the purfling channel

Unless I'm making a special instrument, I buy ready-made purfling

4 Unless I am making a copy or a special kind of instrument I buy my purfling as ready-made, bent strips; I see no reason why I should make it myself. Before doing anything else I prepare all the parts dry. It's worth taking the time to do this now because you can avoid problems at the gluing stage, when everything goes very quickly.

The strips of the purfling must fit the channels properly, not too loose or too tight. This is particularly important at the corners. The channels can be widened slightly if necessary by pulling a rounded metal stick through them – I made one from an old file. Before I start gluing I remove the strips from the channels in the upper and lower bouts, leaving only the one in the middle bout.

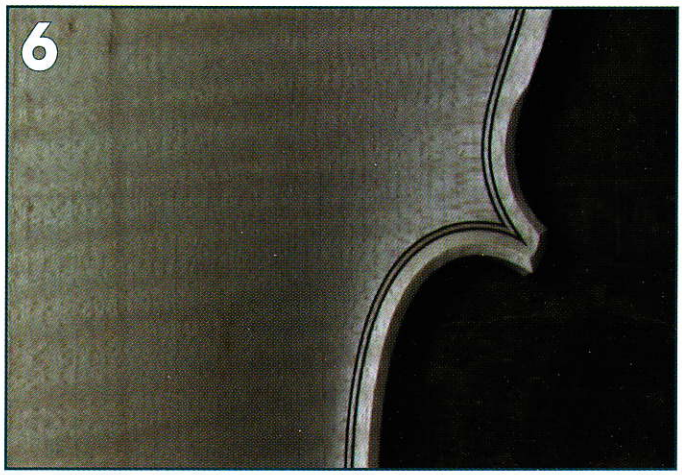
I lift one end of the strip and, using a syringe, squirt glue underneath it and inside the upper corner. I push the strip back into the gap and quickly add the outer strip, the one that runs in the upper bout, sliding it into the corner as far as possible. I press the glued parts well into the gap with a rounded hardwood stick; I don't use a hammer as it could harm the nearly finished channel.

Next I glue the rest of the upper bout, then the other side of the middle bout, finishing up with the lower corner of the middle bout, which I do at the same time as the strip in the lower bout, in the same way as before. That's one half of the plate completed.

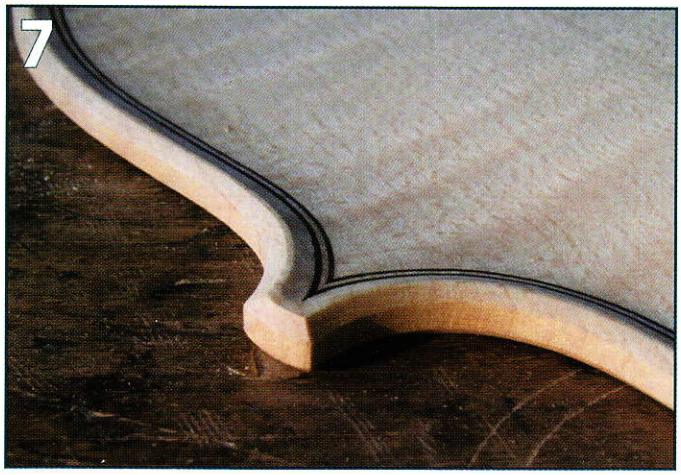
On the back plates I make the upper and lower joints of the purfling horizontally – one over the other – so it's important to start with the correct half of the plate!

5 Once the purfling is all in place and the glue is dry, I cut away with a gouge all the material that stands out proud of the surface and start scraping. As the deep channel ends at the very edge there is no risk of scraping too far out. Now the final surface of the arching is ready to be finished. ▸

Once the glue has dried you can level the purfling with a gouge and start scraping

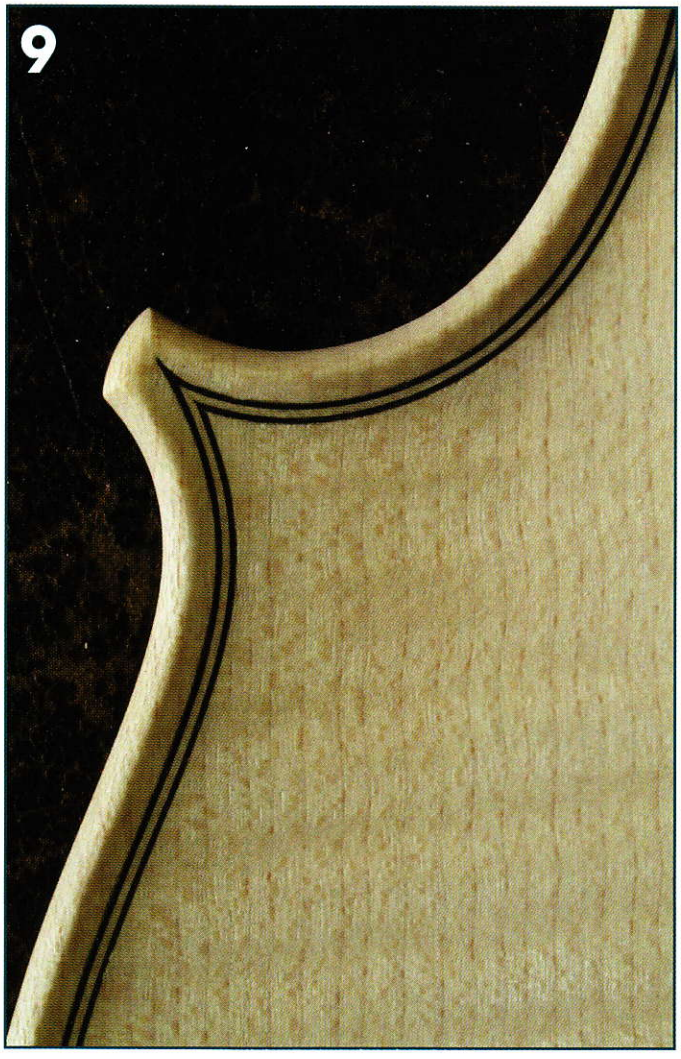


Cutting the bevel from the outer side gives a clean edge



The sharp edge between the channel and the bevel needs to be softened

Finishing the edge with a strip of sandpaper



A finished corner of the plate

6 Now here's the clever bit. Simply by cutting the bevel from the outer side, a very clean edge appears. I do the upper side of the plate first, then the underneath. I try to balance all three bevels (upper, middle and lower) so that none of them looks too wide or too narrow. The button, of course, must be tapered towards the edge.

7 Next I soften the sharp edge between the channel and upper bevel with my sandpaper file and check the final thickness of the edges. For the back plate it should be 3.8mm on the upper and lower bouts and 3.9mm on the middle bouts; for the front, 4mm and 4.1mm respectively. If it's too high in some places it's easy to scrape some more wood from the channel and the outer bevel to lower it. I then do the same with the corners. Here I aim for a final thickness of 4.1mm for the back and 4.3mm for belly.

8 The final task is rounding the edges. I normally do this after the plates have been finished inside and out, just before closing the body, but in order to demonstrate all the edgework technique I'll do it now.

I use the sandpaper file again to soften the sharp edges between the bevels. I do the finishing touches with a strip of sandpaper, rubbing the edges across the grain. You can continue softening the top edge, of course, according to style, level of antiquing or just today's taste.

9 For me it's about balance and proportions. Often there are details that cannot be measured, only sensed: the sharpness of the middle edge, the depth and shape of the channel inside a corner, the dullness or protrusion of the purfling or a whole corner. If nothing disturbs me, it's well proportioned. S

Look out for next month's ***Trade secrets****, in which John Milnes reveals the technique he has developed for correcting archings*