Fitting a new fingerboard to an old violin

A step-by-step approach to this tricky procedure

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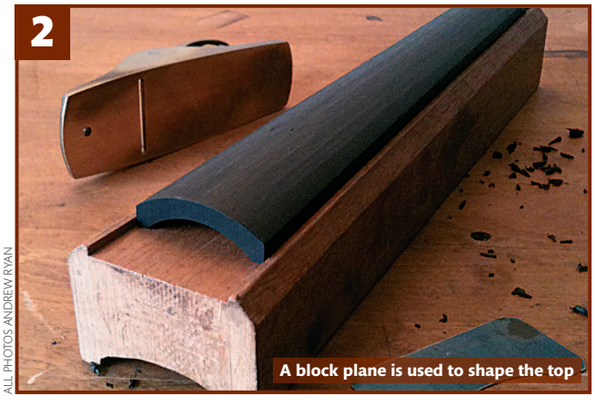
OLD VIOLINS ARE ONE-OF-A-KIND OBJECTS. This makes them interesting but also means that working on them is complicated. Each and every repair is like the instrument it is made for – unique.

Necks and fingerboards are no exception. They are a complex combination of dimensions and surfaces that are difficult to reconcile into a pleasing and functional shape. They can also become misshapen and distorted over time. When grafting or resetting is not advisable, for reasons of conservation or economy, replacing the fingerboard can correct many of those problems.

I use the following method to finish the top surface of the fingerboard first and then gradually reduce the width and thickness to fit the board to the neck. Finishing the top first gives me a reliable reference, along with the bridge, for accurately positioning the fingerboard. Finishing the sides and underside last allows me greater flexibility to correct defects in the neck.

Assessing the neck

1 It is important to assess the condition and dimensions of the existing neck, fingerboard and bridge, as well as their relation to each other. The neck pictured was set with the correct projection but pointing slightly to the treble side with an unequal overstand. The new fingerboard for this particular violin will have a normal overall thickness, but will need to be slightly thicker on the treble side than on the bass side. It will also have more scoop on the bass side to straighten out the neck.



A block plane is used to shape the top

ALL PHOTOS ANDREW RYAN

2 I use a small block plane to shape the top of the fingerboard. A simple jig holds the fingerboard in place while the top is being shaped.

3 It is not necessary to flatten the underside at this point. I aim to remove the minimum amount of wood. I need to have the fingerboard oversized in order to correct any defects in the neck. The fingerboard should have the same radius at each end, 42mm. It should also have a concave curve lengthwise on both sides (the 'scoop'), rather than a straight edge. The scoop is always equal at its deepest point to the thickness of the string above it (0.75mm on the G-string side and 0.5mm on the E-string side).

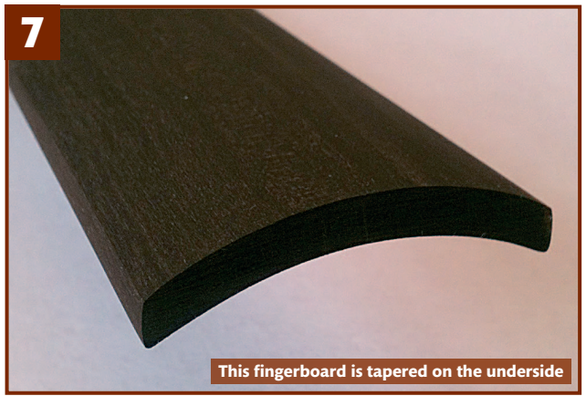
It is more important that the scoop is an even curve from end to end than the exact depth. And if anything, the fingerboard should be a little flatter at the nut end and rounder at the bridge end. This makes string-crossings and double-stops easier in the lower positions and prevents the middle strings from being too high in the upper positions.

4 After I finish shaping with a scraper and sandpaper, and squaring off the nut end of the board, I shape the sides and underside of the board with a block plane. The underside of the fingerboard must be shaped to fit any bend or twist in the neck exactly. The finished fingerboard should be 7mm thick at the nut end (a little thicker if I'm correcting for a thin neck) and 11mm at the bridge end.

The middle of the fingerboard can vary depending on how much I am changing the projection. For every extra millimetre of thickness in the middle of the board, the projection will rise by 2mm.

5 I gradually reduce the width and thickness. I prefer to do this work against the bench, rather than using a jig, as it allows me to see exactly where I am cutting. It also makes it easier to check the work's progress against the neck.

6 I regularly check the fingerboard's position in relation to a fitted bridge, marked with the finished height and radius. Changes in the scoop of the sides will steer the board horizontally, while changes in the taper of the board's thickness will alter its projection. ▹



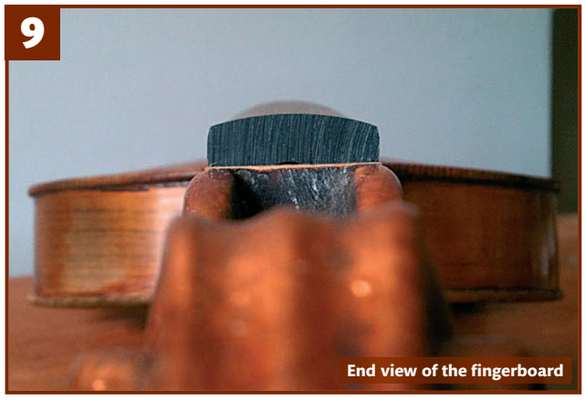
This fingerboard is tapered on the underside

7 I plane the sides until they are just barely oversize at the heel and nut. Then I sand to finish. This will save time and effort when blending the fingerboard into the neck, and eliminates the need for retouching at the neck heel. The sides should have a radius of about 12mm.

For the pictured example, rather than leave the treble side of the fingerboard thicker for its entire length, it is tapered on the underside beginning just after the neck heel up to the bridge end. Making the end of the fingerboard a constant thickness helps disguise the uneven thickness of the sides.

Finishing the underside

8 I cut the fingerboard to length and finish the underside with a gouge, scraper and sandpaper. Then I glue the fingerboard to the neck using strong but runny glue applied to one surface only. Due to the large surface area, the viscosity of overly thick glue or an excessive amount of glue would prevent the joint from closing.



End view of the fingerboard

9 The finished board is 7mm at the nut. It is also tapered from one side to the other to correct for the unequal overstand. Note the slight curve of the sides.

10 I glue the nut on and blend the sides of the new fingerboard and nut into the neck using files. I take care not to file into the neck. Then I sand to finish. The nut height, like the scoop, should be equal to the thickness of the string passing over it and the groove should be set in a third of the nut's height. ■

The fingerboard blended into the neck

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