The Violino piccolo

Lambert Houniet

Introduction

It was a curious experience in my 35 years of violinmaking and dealing, to receive an un prepossessing gentleman with a suitcase in my Edinburgh workshop one afternoon in the late autumn of 1980. He had come to show me a violin and asked if I were interested in seeing it. I was. Out of the suitcase came a bundle, this at first glance was as unassuming as its owner. It was a blanket and in it a smallish violin with a neck too long for its body and thickly covered in soot-like grime. A hideous crack, crudely glued, ran down the front left-hand side.

A second glance, however, showed that this was not a circus attraction. This was obviously made by someone who knew what he was doing; the f's were a delight to see and the scroll exquisitely carved in the Forster tradition. I had no difficulty in ascribing it to the Forster workshop. We settled the matter and I became the owner.

Owing to my workload the repair of this instrument -as yet without a proper name- had to be kept in abeyance.

A delightful feature of the violin was the presence of its original neck and top-block. The dimensions were, however, unorthodox and rather puzzling. It was either a child's violin or a violino piccolo. The argument for its being a child's violin was the 13cm neck-length, which helps the young player to get accustomed to a violin with a standard neck. The necessary reduction in string-length would have been achieved by reducing the size of the body as advocated by Leopold Mozart, Wolfgang's father. The strings would be those of a viola: at the time of its manufacture - in around 1760- these would have been gut strings and freely available.

The case for the violino piccolo was alluring. Although the range in which it can be used is, musically speaking, limited, it is specifically required in some of J. S. Bach's compositions and it lends a distinct voice to these works.

Some elementary research led me to embrace the latter opinion. The vibrating string-length and the required tuning of a minor third higher than that of a normal violin with the A at 415 Hz, fell well within the possibilities of this instrument being played with violin strings of a standard thickness.

Recently I started cleaning the piccolo, initially with cotton wool, water and, finally, a little polish. The grime lifted to reveal a yellow-brown varnish, which I assume to be composed mainly of shellac with perhaps a little sandarac mixed in.

Now the repair on the front became fully visible. After removing the front I inspected the inside of the violin. On this side the crack was caked with what is known as Scotch glue, a tenacious, albeit water-soluble, dark green glue used by carpenters of bygone years.

The crack on the inside proved to be uneven; the resulting variation in level on the outside had been crudely made even and reduced, presumably by a steel scraper or a shard of broken glass. The bare wood had consequently been treated with what, after 250 years, looked like boot-polish and treacle; the area of damage was roughly 25 mm wide, from the top-edge to the f-hole.

To repair this invisibly, I decided to use a technique by which the untainted wood from beneath the surface is brought to the surface of the front, the inside to be reinforced subsequently.

Repair Technique

1. A plaster cast of the table is made by the usual method. The bottom of the cast, still in a semi-fluid state is then covered with 12 mm thick water-resistant plywood. In it some holes are drilled for the wet plaster to enter and get a secure grip. The cast is built up to a thickness of 60 mm measured at the edges.
2. Then the crack in the front is opened, cleaned and re-glued with the undamaged inside edges flush.
3. On the outside of the front a strip is marked out with a marking pencil roughly 15 mm to either side of the crack. This includes all of the visible outside damage. From these markings the damaged wood is removed, feathering in very gently from the pencil lines towards the crack. I make sure to work down to the bare, untainted wood, finishing with scraper and very fine, blunted sandpaper.
4. The corresponding area on the inside of the front is thinned in a similar manner, this time, however, taking care that the edges of the area under treatment are slightly larger, 2mm in all directions than those on the outside. As the purfling was painted on, it did not complicate matters and most of the thickness of the border could be included in the repair. The shaping of the patch area with a small gouge results in a very sharp incline thus reducing the thickness and liberating the area for maximum movement when pressed. (see sketch 1). On the plaster cast the area corresponding to the pencilled area of the front is adjusted by scraping to form a smooth negative arching. The evenness of the arching is checked with the aid of an oblique light and a short ruler.
5. Preparations are made for pressing with a hot sandbag. The cast, covered in aluminium foil, then receives the front, which itself is covered with a sheet of greaseproof paper cut to size. With a soft brush the inside of the front is moistened with water 10 minutes or so before the hot sandbag is applied. Immediately before applying the sandbag this action is repeated, taking care

not to soak the wood. Sand is heated and poured, with a steel funnel, into a specially made sturdy cotton bag; the temperature being such that the back of the hand tolerates the filled bag for about 6 seconds. The hot sandbag is placed in position, covered with an appropriately sized square of 13 mm thick plywood and clamped with as little force as seems prudent. Some light taps of a hammer on the plywood during tightening rearranges the sand and secures a good fit.

6. After a period of two days the bag is removed and the fitting checked, so too is the crispness of the rim, as left by gouge and scraper. As foreseen, the pressed part of the front, like the rest, hugged the cast very closely, although the slightest give could be detected in the middle of the treated area. I will discuss the solution to this problem later.
7. A suitable (split) piece of spruce, closely resembling that of the front, is chosen and planed down to a thickness of ca. 25 mm to make a patch.
8. A cardboard template slightly larger than the prepared area is made, adding an extra margin of 2 mm or so all around. On it, somewhere near the middle an annual ring from the front is copied and drawn onto the template. This shape is transferred to the patch block, indicating the run of the copied annual ring.
9. The walls of the patch-block are sanded perpendicular to the top and bottom and clamped down in position with very little pressure. Its shape is transferred to the treatment area with a sharp, clear pencil-line, whereby care is taken to misalign the annual rings of front and patch by at least 1 ring, to ensure future strength. After removing the patch, on the front a second line is drawn freehand inside the patch-area 1 mm. within the first. The patch is then fitted coarsely starting with the edges, and then laid aside. With the inner of the two pencil-lines on the treatment area as a guide, the precipitous edge on the inside of the front, and which had been started on before pressing, is now brought to perfection with the aid of a small diameter gouge, taking care to leave the edge sharp. The bed of the area is finished with a keen scraper, in this case down to a thickness of 0.4 mm in the middle.
10. To fix the patch while fitting, cleats are used: A rectangular piece of spruce is prepared, measuring 10 by 10 mm., and with a length of ca. 100 mm, the end-grain showing on two of the long sides. On one of the long end-grain sides a bevel is planed, undercutting it by approx. 3mm. On the bevelled side, not the end-grain one, thin cardboard is glued. Subsequently appropriately sized lengths –10 to 15 mms.- can be split off the 100 mm strip. With hot glue applied to the cardboard side the cleats are glued onto the front, tight against and spaced all around the patch-block, undercut side facing it. Owing to the arching, it is necessary to adjust the cleats with knife and file, to ensure a snug fit against the patch-block. See sketch 2.

11. The cardboard allows a safe and speedy separation of the cleats when no longer required, the cardboard remnants being easily removed with hot water.

12. After the glue on the cleats has dried, -6 hours should be ample- the patch is fitted using white chalk, to the point where the whole patch fits. The central area, however, shows a slight give when pressed. This area, and not more than that, is then chalked with a darker, e.g. brown, chalk. Thereupon the surrounding white chalk on the patch is carefully removed so that only brown marks from the central, yielding, area are registered. As soon as this is achieved, the brown chalk is removed and the whole patch again fitted with white chalk just until the whole patch, including the middle, fits perfectly. It is advisable to brush the caked chalk away occasionally and apply fresh chalk during this whole operation.

13. To save trimming-time later on, the finished patch is made thinner by splitting it. After the cast is meticulously cleaned of grit, the greaseproof paper is renewed, and both layers of the patch glued in place using fresh hide glue. The split in the patch is of course not glued. The clamping pressure applied is modest, actually no more than can be exerted with thumb and two fingers. This is to avoid the disastrous occurrence of inverse grain, where the soft summer-rings are compacted between the harder winter growth, a condition immediately visible on the front, and which is very difficult to restore satisfactorily.

14. After a day's drying the clamp is removed and the patch brought to thickness, blending in with the surrounding area. In the case of the Forster 2.2-2.3 mm thick.

15. The dimensions of the original bass-bar were maintained: 245 mm long. and 7.5 mm high in the middle of the bar. The original placement of the bar was adhered to, 16 mm off centre, allowing the bridge-feet eventually to become 33 mm wide. As the rest of the violin's inside needs no further attention, the instrument is closed and the retouching of the varnish can begin. A coating of thin water glass is applied to reduce suction and avoid the varnish entering the end-grain causing an unsightly stain. A mixture of shellac and sandarac, roughly 1:1, was made to copy the presumed composition of the original varnish. After the application of several layers of this sub-coat the retouching is completed by applying powdered colour dissolved in alcohol, intermittently fixed with layers of varnish. A similar and equally successful method is described in Hans Weisshaar and Margaret Shipman's excellent book, Violin Restoration, a Manual for Violin Makers.

16. The original fingerboard is available but the top nut is not. A choice was made for one of mammoth ivory as it lends a pleasing detail to the instrument and, owing to its hardness, resists wear on the vulnerable gut. A tailpiece was made, matching the simplicity of the fingerboard. The tail "gut" consists of sterling silver wire, 1.3 mm thick.

17. The soundpost is 4.5 mm thick and placed 2.5 mm behind the intended bridge foot position. The bridge is cut out of a choice wedge of maple, 30 years old and the design is loosely based on one of the classical Stradivari drawings. In order to achieve a bright sound and good response the bridge is cut as lightly as possible without endangering stability and durability. Weight of the finished bridge is 1.57 g, thickness at the feet 4.75mm and the top edge 1.5 mm. Light yet sturdy.

18. The choice of strings is orthodox: Pirastro Chorda E, A and D, Eudoxa G of a thin gauge. With a vibrating string length of 293 mm for the piccolo as opposed to the standard length of 328 mm, the gut strings easily accommodate the raised pitch by a minor third, when tuned to A' 419 Hz.

Coda

And so it proved to be. The piccolo was found to display all the hallmarks of a well-made violin: evenness over the strings, ease of response, carrying power and, last but not least, the sound quality, redolent of a well-trained boy soprano.

Details of the instrument are displayed on the author's Website at http://www.houniet.com. The information can be downloaded and should be sufficient for the construction of a faithful copy. If required a tracing of the back can be obtained from the author; the address also available from his website.

Lambert Houniet trained in Mittenwald, worked as a restorer at J&A Beare in London and has successfully run his own business for over 30 years, first in Edinburgh and then in Utrecht, the Netherlands. He is a member of the Entente Internationale des Maîtres Luthiers et Archetiers d'Art, the Dutch Society of Violin and Bow-makers and the German Association of Violinmakers. Most of his time is spent trying to reduce his order book for new instruments but occasionally he is seen to enjoy a fancy repair like the one described above.