



MAKER'S BENCH

Carving a Bridge

by John Waddle

It's 8:30 P.M. and I am at the shop carving a bridge for a customer.

I don't usually work this late, but the customer needs the instrument back for something tomorrow and I want to get it done for them.

I have the feet fitted to the top, which is one of the most difficult parts of the job, so I'm glad that's done. Now I can establish the string heights and the curve of the top of the bridge.

Yesterday, I had the customer play the instrument for me and asked enough questions to be clear about why the instrument was in need of a new bridge. Early this morning I measured the instrument before taking the strings off. The customer wasn't happy with the sound they were getting, and was having problems with playing one string at a time in the upper positions of the two inner strings.

I determined that the existing bridge was not wide enough for the instrument and that the fingerboard was not shaped properly. Also the sound post was not providing enough support for the top. All fairly common problems.

Before starting to fit the bridge to the top I had corrected the problem with the fingerboard and made a new longer sound post that fit better. I had chosen a wider bridge than the one am replacing to fit over the bass bar better. Now with the sound post in place and the fingerboard properly shaped I can establish string heights, spacings and curve. I know that for this instrument and this customer I need to make the bridge a little higher on the bass side than I would for some customers and a little lower on the treble side than I would for some customers. This is because the customer is an aggressive player and really gets into the strings with the bow, and doesn't mind a little higher action on the lowest string, but really doesn't want the highest string too high and the way the neck is set works because the instrument will still have clearance for the bow in the C-bout.

I have a large inventory of bridges for all the instruments and weigh each bridge before choosing one for a given instrument. I chose a slightly lower density bridge for this instrument because the customer wants a little warmer sound and a higher density bridge would give it a brighter sound.

Once the string heights are established I can work on finalizing the thickness and shape of the bridge. I have established the thickness at the feet prior to fitting the feet to the top; now that the string heights are done, I can make the front and back of the bridge that shape I want. Many years ago I made bridges flat on

the tailpiece side, but over time, these bridges were more likely to warp. Now I make bridges curved on front and back with slightly more curve on the front. Now more and more of my customers want tailpieces with four fine tuners so I have had to take that into account in the shaping of the bridges I make. If I think about how many tools I use to make a bridge it kind of surprises me. Knives of several sizes, chisels from narrow to wide, several planes, and sanding sticks for shaping. I don't use any power tools. It takes hours but I enjoy it and when it's finished, if I feel like it, I stamp my name on the bridge. Each bridge turns out different because each instrument and each customer is different. I've made some bridges from scratch, either because the instrument was non-standard enough that a standard blank would not work, or I wanted to experiment or I just wanted to. I have some excellent wood for bridges that I bought years ago. I use it sparingly because it is hard to find.

It's 10 P.M. now and I am going to glue the parchments on the bridge and go home. Tomorrow I will put it on the instrument and tune up the strings and test it. The customer has an appointment at 1:00 P.M. to pick it up so I will have time to play it a bit and adjust anything that might need adjusting. I can also tune it again before lunch because the strings need some time to stretch after having been taken off and put back on. I am confident that the customer will like it because re-shaping the fingerboard will have fixed the problem of playing the middle strings in the higher positions, and it will sound better because the sound-post is now giving the instrument the support it needs and the bridge is now sitting over the sound post and bridge in the most efficient way for sound transference. I'm excited to see the reaction of the customer.

Now it's on to the next job. I recently wrote my 8,000th work order. I started the numbering at 0 in 1986. I don't know how many bridges I've carved, but even though I've carved a lot of them, it's still challenging and satisfying when I know that I've helped another person sound better and have more fun doing it.

John R. Waddle is a violin maker, dealer, and restorer whose shop is in St. Paul, Minnesota. He is a 1981 graduate of The Violin Making School of America in Salt Lake City, Utah, and has had his own shop in St. Paul since 1986. John is a member of both The American Federation of Violin and Bow Makers, and the Violin Society of America. †