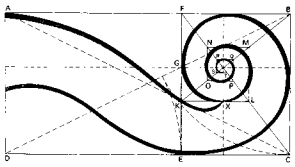


Maker's Bench

An Uplifting Performance

or Making Haste Slowly

by Roger Zabinski

Monday, 4 February 2013, 9:44 P.M.

Hi Roger, I have some questions about a repair for a Bazin cello bow. A few years ago I had a hairline fracture wrapped with nylon thread. Most recently a fracture outside the previous repair has occurred. What are the options (if any) for a repair…? I'm sure it's time to consider a new bow, but I recently bought a new instrument and do not have funds for a new purchase…Thanks for your help.

I.S.

Tuesday, 5 February, 9:55 A.M.

Hello I.S. Thank you for the challenge! Let's have at it. Send it, please, and I will have a closer look at it. Repair would be about $250.

RZ

PS: I have a couple of new bows I can show you if you want—nice ones! $4,500.

Tuesday 5 February, 10:46 A.M.

Hi Roger! What kind of repair would it be? Would that include a rehair?

I.S.

Tuesday, 5 February, 1:03 P.M.

Hello I.S. First reglue any split fibers. Next, plane off top of the stick to remove broken top fibers. Graft new wood over the planed area; shape and polish. No rehair unless it needs it- $65 extra.

RZ

Tuesday 5 February, 6:58 P.M.

This sounds great. How long would this take? I have an audition next weekend—Feb. 17—and am wondering if it can be done by then. I also live in Idaho and would have to ship the bow.

I.S.

Wednesday, 6 February, 9:53 A.M.

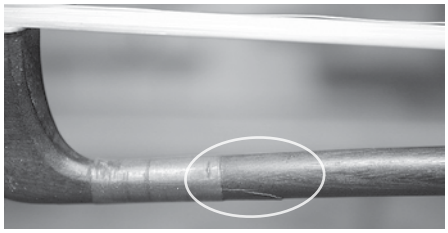
It's a squeak, but ship it today—either UPS or FedEx Second Day Air—either will have packaging for you.

RZ

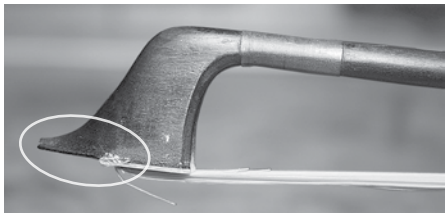
The bow that the young Mr. I.S. sent turned out to be a Louis Bazin, which, as he said had been repaired once before. But before we launch into a description of the repair process, a little history of Louis Bazin may be in order.

Charles Louis Bazin (i.e. Louis) (1881-1953) was the third generation of a dynasty of bow makers. He was born in Mirecourt, the son of well-known archetier Charles Nicolas Bazin II (1847-1915). Louis was the grandson of "un facteur des archets," Francois Xavier Bazin (1824-1865) who established himself in Mirecourt in 1840. Louis began work with his father at age 12, and took over the business in 1907. While C.N.'s work was highly regarded, and he did much to elevate the status of bows and bowmakers—for it was he among others who lobbied to establish the word "archetier" in the French lexicon—it was Louis who raised the Bazin name and business enterprise to its highest pinnacle. The milieu of his father's workshop gives us a rustic impression; after his father's death, Louis built new quarters in the town, a rather impressive brick structure on rue Estivant, which stands to this day. There he expanded the business to include accessories, turning it into a full commercial enterprise. As a result, during his day, Louis' bows were more highly regarded than those of his father. The bow that I.S. sent was made with the rounded Vuillaume style frog, not uncommon in Louis' output.

I received the bow on Friday, February 8. As my client said, the bow had developed another lift behind the head, beyond the area, which had already been repaired.



The ivory head plate was half-missing as well. A lift usually occurs when the grain



behind the head is not entirely straight; instead of running directly along the length of the camber, the grain runs out the side or on top of the shaft at some angle, greater or lesser, depending on how extreme is the runout. This condition of runout is not uncommon in pernambuco timber, as the tree tends to wind and twist its way up to the crown; it is typical of the species. Several factors contribute to make the area behind the head the most sensitive part of the shaft. One, it is the smallest diameter, therefore the weakest; two, being directly behind the head, it endures more stress than any other part of the shaft; third, because it is the smallest diameter, it flexes more than any other part of the shaft. It is easy to understand then why the wood grain at this point must have very little, if any, runout. The runout on this bow was severe; I am surprised the bow has lasted as long as it has.

A successful restoration of a fine bow must retain the shapes and aesthetic sense original. So before any work begins you have to understand, record and remember the maker's intention. The sculpture of the original had not yet been compromised, so I was able to make line drawings to record accurately the all-important crest and ridge, taking note also of its three-dimensional

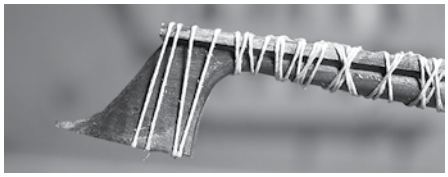
expression. (Refer to my articles, *Designing a Personal Model*, in *String Notes* Vol. 14, #2, #3 and Vol. 15 #1)

The first process of the repair is to remove the failed repair and expose the broken fibers. Cyano-acrylic glue is introduced into the hairline fractures, as it penetrates deeply into any separated fibers. The shaft is bound with nylon cord, and left to cure; the shaft now at least has some temporary level of integrity and the repair can continue. Next, I planed off the top of the shaft to remove as much of the fractured fiber as much as possible. But how deeply do you plane into it, and how long should you make that new surface onto which your new repair wood will be glued? A prudent answer to that question is a matter of years of experience. On the one hand, it is important to remove as much of the broken wood as possible. On the other hand, you want keep as much of the original wood on the shaft's underside where the fibers are still intact and retain their strength. I decided to plane off 2.2 mm, about ⅓ of the depth. Also, I decided to make an unusually long joint; normally 6.5 cm., I made this one 8.5. The reason was the extremely low angle this creates, about 5°. This low angle will permit an effective fiber strength of 99.6%—much needed for such a severe case of runout.

The next step is to prepare a piece of straight-grained wood that will be grafted to the newly planed surface. But what color? Cosmetics after all, are an essential part of a successful repair. Pernambuco can range any color from a greeny-orangey-yellow (yuk!) to dark chocolate. And what of the oxidation which occurs after the wood ages? Again, only years of experience will give light to that question; an advantage, too, is having hundreds of sticks of aged wood from which to choose the best color match.

Notice the much lighter wood color where I planed the stick; the new graft will have to match the subsurface grain. But how to tone it down to match fully the surface? Again, the knowledge of years of experience. It was common practice in late 19th c. French bow making—and occasionally even to this very day—to apply nitric acid to the wood; the acid immediately darkens the wood as if it had been aged for years; however, if the acid is left to work, the wood will return to nearly its original color. No problem. Heat the stained shaft with charcoal—the real stuff, the stuff that looks like blackened oak wood; fume off the acid, and the color will set and stabilize.

The success of any joint under stress is strongly dependent on the precision of the joint; it must be close and tight-fitting. Chalk will do it. Glue the spline with an industrial grade of epoxy; wrap with nylon cord; let it set.



Next, the real fun begins. Having recorded the shapes of the crest and ridge, I sculpt the repair spline until it looks right; apply the acid, fume with charcoal, and polish the repaired head with a traditional shellac base finish. Since the bow was lack

ing an ivory when it arrived, I received permission from I.S. to mount a new ivory head plate. Clean and polish the rest of the stick with the frog and all metal parts; shine it up and rehair. Done.

I sent the bow to I.S. on Wednesday 13 February.

Roger Zabinski works in Minneapolis and has made over 780 bows. He has won numerous awards from the VSA, including a Gold Medal for his violin bow in 1986. In May 2011, he was elected a member of the Entente Internationale des Maitres Luthiers et Archetiers d'Art.

Monday 18 February 9:43 A.M.

Hello I.S. How did things go this weekend?

RZ

Monday 18 February 2:55 P.M.

Hi Roger - I think the audition went well. The bow looks absolutely *fabulous*! I still can't get over how good it looks and how great it feels. At first I was doubting if it was even my bow!…Thanks for your work!

I.S.