Reconditioning the Newer Piano

Roger Gable and Scott Craven

Roger Gable's Shop

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This particular meeting was one of those where you actually had to be there to hear the differences. In this way it was comparable to some others we have had in the past, such as when Jason Kantor displayed pianos tuned to period temperaments or when Steve Brady arranged for us to attend Kane Hall at the UW to listen to a Yamaha, a Bosendorfer and a Steinway on stage from various positions. Hands-on changes in subtle sound differences are the practices that help us to develop and recognize fine distinctions in sound so that we know what to hold as optimal goals in our minds as we work.

- *Dean Petrich*

Roger was tuning a piano at a church. Over the years it was getting increasingly difficult to tune this piano because of the rendering. The false beats were starting to creep in, and the hammers were worn out. The church had a lot of money, so they decided to restring it, put on new hammers, regulate it and re-bush the keys. Afterwards it rendered really well, was a dream to tune and sounded wonderful. The church called back very happy that the piano was so different and played so well.

From this experience Roger had an idea to go through this entire process with a Yamaha 6'3" that had a new set of Abel hammers that had been put on about six to eight years ago. Scott and Roger got together to decide what to do to find out if they could tell any difference between the old and new strings compared side-by-side. The only way to do this was to re-string different sections of the piano to hear the difference. Roger has always felt that the bridge work on Yamaha pianos is better than that of the Kawai because the Yamaha uses a harder bridge cap material, and therefore there are fewer false beats. On the previous Kawai piano Roger added CA glue on the bridge cap and it made a dramatic improvement by eliminating the false beats. The CA glued the bridge pins to the wood so there were no false beats. Roger also put on new hammers on this Yamaha. He was not so sure that the restringing made much difference, so this was part of his experiment.

Strings

Bridge cap deterioration is the major cause of string issues. Roger likes to replace agraffes when he restrings to clean up the termination. Bad termination will produce false beats. Roger did discover something this last week that resulted in his making a false-beat-eliminator tool that we all might like to have. He proceeded to demonstrate his tool.

<u>Causes of false beats:</u>

- Bad contour of the capo bar
- Soft bridge caps
- Bridge pins can be loose
- Strings can work up the bridge pins
- The string could creep down into the bridge and create a notch
- The string could be bent too slowly around the bridge pin.
- Sympathetic vibrations on the waste end of another string

There are several tools people have used to eliminate false beats. The grooved wheel that looks like a pizza cutter on a handle is often used to stretch new strings and to press the wire more snuggly around the termination points. Another version of this is a drum stick with a groove carved into the tip. Roger demonstrated his false-beat-removing tool. He placed the tool over the pin and manually rotated the pin against the string, starting with the bridge side and then the speaking length side.
This metal device that he had manufactured sits atop a bridge pin and is rotated by hand to press the wire more tightly around the bridge pin on either the bridge side or the speaking length side. As he demonstrated his technique, sometimes the false beats needed more pressure, so ultimately he used a handle on the tool to enable him to apply a bit more pressure. Amazingly the false beats disappeared as he worked the string.

Scott cut open a liquid CA glue container, dipped a Q-Tip into the open container, and carefully and neatly painted the bridge notches. If you flood the bridge with too much CA glue it really kills the sustain. To correct this, remove the string, clean the CA glue off the string, and put it back on.

Buy Yamaha strings and you don't even have to cut them off. The bass strings arrive already cut exactly to length for each note. Scott removed two old bass strings and replaced them with two new strings.

Hammers

Wally Brookes put new hammers on a church C7 Yamaha with his Abel hammers and shanks. About a month ago, the church called about sticking keys because the bushings were sluggish. Roger has never had a bad bushing on a Yamaha using Yamaha shanks and flanges. In 2008 when the money crisis happened, Roger bought four new sets of Renner blue hammers, and he put one set of them on tonight's demo Yamaha. We listened to a new string with Abel hammers. Roger put the hard Yamaha hammers on for a demonstration, and struggled to make the hammers acceptable. He discovered that after voicing them with a lot of needling, keeping them out of the 11:00 and 1:00 position, they sounded about as good as he could get them. We listened to a new string with the voiced Yamaha hammer. Then he put a Renner hammer on the same note; this hammer was as hard as the Yamaha hammer. Was this a bad set of Renner hammers? He put them aside and tried them again later on this evening's piano, thinking that maybe he could make them work. He realized that these hammers were not as far off as the Renner hammers, although he did have to needle them a lot. The Yamaha hammers were responding. Because they are a harder felt you get more power out of them, but they require a lot of voicing to remove the ugly harshness. Dance around the 11-1:00 position to avoid destroying the tension in the hammer; destroying the felt tension will kill the sustain. To separate the sound of the hammers striking the strings and the sound of the strings themselves, Roger plucked the old strings and the new strings to compare the subtle improvements of the wire changes.

We compared original Abel hammers on original strings to Yamaha hammers on new strings in the mid-tenor. The hammers have been fitted to the strings on the Yamaha hammers. The Able hammers sound mellower and do not have as great an attack, but there is a little harshness to them. Roger also re-bushed the keys only on the notes with new strings. Can we tell the difference between how the strings attack and decay on the new and on the old by plucking the strings? Roger used Roslau strings instead of Mapes Gold. Actually, the old strings sounded louder and clearer than the new strings.

Now on note 44 we are going to remove the Yamaha hammer and put a Renner hammer on 44; we are keeping a Yamaha hammer on 43. These are pre-hung hammers by Yamaha. Roger weighed off

the key on 44; it was heavy, but he also increased the weight of the hammer by adding epoxy to the underside of the tail. If there is too much epoxy it can be sanded off in increments to achieve the desired weight. We examined the Smart Chart of hammer weights to see where the out-of-the box hammers measured. We could see on the chart that they started off heavy, became light in the middle, and then got heavy again. In order to even out their weights he added epoxy. The Renner chart showed the hammers out of the box to be all over the place. With the Renner hammers Roger wasn't able to even them up as much, but he did increase the weight. Epoxy usually adds about .3 grams. Lightening the hammer made it brighter. The old Abel hammer with an old string decayed very fast. It could be that these hammers had been voiced to death. Another new Yamaha hammer sounded dead because Roger had needled straight down at 11:00 and 1:00. One nice thing about a piano on the bright side is that you can play with a light touch. When you play something loud and strong, no one is really listening to any buzzes, noises and false beats.

Summary

The stringing part of this project was probably unnecessary, except for the bass strings. What would be best served economically would be to replace the hammers on a piano of this age. What Roger would do would be to re-bush the keys and replace the hammers, and maybe once every ten years replace the bass strings. One other thing is the improvement we may see on his older Yamaha C7's, which are getting difficult to tune. These are tuned three or four times a year, and there will be unisons that are out because the rendering is so bad. Those pianos could be improved with new agraffes and new bass strings. The newer model 7'6" pianos have been made by the factory with improvements. The new Yamahas are 20 bass strings. In light of one of our comments, Roger is going to order another new set of Yamaha hammers for this piano this evening. The box says for C5 or C7 piano. A new set is $1200 for pre-hung hammers. Roger will then report back how it sounds. You can order for $125 a set of Yamaha shanks, but we can no longer order Yamaha hammers separately; they now come already on shanks. Because Abel hammers are softer, they wear out faster. He might try a set of Blue Point Renner hammers on another piano. The Abel natural felts are softer now, and they might be the answer for this piano. On the Kawai there was a more noticeable change with this process than on this Yamaha; the differences were much more subtle on the Yamaha.

Ed has installed carbon fiber hammer shanks on some pianos. The feel and gradient is so even. When you play it softly it is actually easier because of the predictability: the touch is so uniform. Ed doesn't like the WNG whippen, their damper or their stainless steel pins, but he does like the shanks and flanges. The hard part is cutting them off: it's difficult. The heavy aluminum foil sticks with acetyl and is used for traveling. Cut these carbon fiber parts outdoors because carbon dust is deathly. It will wreck your lungs and any computer because the dust is so fine.

We listened to the piano after the presentation to discern differences between new and old strings and hammers. Roger will make more false-beat-removers for us to use.