Voicing: Advanced Techniques

Clark Foerster
10/20/2014
artistpiano@gmail.com

Voicing requires an intensive immersive environment where failure is permissible. This must not happen on a customer's piano, or even on your own. There are many classes and authorities on voicing. A voicing technician is specialty field and is different enough to be distinguished from a piano technician. Clark has spent weeks at eleven different factories and became no longer satisfied with his own recipes for voicing. He collected others' ideas, but personally he became scared of hammers. Finally after thirty-six years Clark considers himself as a student of voicing. The true art is to treat the middle where the continuous pianissimo exists, and where one plays truly into the hammer as the ultimate expression of a purely musical experience. Control over the middle spectrum is where the hotness, the coldness, the angle, power and dynamics can be distinguished. Many people can alter the extremes, but the true essence of tone comes from affecting the middle.

Clark is a technician at Trux University, Willamette University and Lower Columbia College which has an amazing budget. He is also the senior Steinway technician at the Portland Steinway store. At the eleven factories he visited he learned some key principles. Read Andre Orbeck's book Voice the Piano, which is probably the most comprehensive book on voicing. There will come a point where there is a brain change and you hear completely different things. To achieve this takes a totally immersive environment. Position yourself to visit and spend time in a factory. In the early 1900's there were 228 piano manufacturers. Nowadays there is less of an opportunity to learn. Go to Renner and ask if they make hammers for Bosendorfer, and they will answer, "we can't tell you." Here is a sense of what it's like to be in a factory. The type of sounds they are after is very different from hearing pianos in the stores and stages.

Hammer Shapes

The shape of the hammer is directly related to creating a balance that the soundboard doesn't provide. There are three basic shapes: pear, diamond, and egg. Each soundboard produces certain harmonics. An egg shape will bring out the lower part and the fundamentals, and will bounce off the strings. When you use needles, think of the lattice of space and fiber that you are injecting into the adhesion. A new hammer felt pressed onto a hammer is one massive adhesion. The voicer's job is to undo the adhesion in a way that serves the sound of the piano. Think of it as a lattice and think about needling as inducing space.

Hammer Formation

We used to think that the human brain was fixed after the age of six. In the last ten years we now know that there are four critical periods of brain development, and the last one is in the twenties. Correspondingly, there are three stages of a hammer's formation:

- Foundation
- Finishing hammer
- Maintenance (for the technician and voicer)

The first question to ask is, "Is this hammer voicable?" The critical period of cushion or foundation development has been done more or less on each piano already. Whether foundation work is done completely, inadequately or not at all, can noticeably alter the tone of the piano.

Don't poke a hammer until you know why you are going to poke it. The main reason is to release the fibers in a certain area; any time a hammer is poked it is hurt. Visualize the hammer as a ball of yarn. As it is worked on, the ball of yarn is continually unrolled and can't be rolled back. Listen to the sound of a hammer, mate the hammer to the strings, and then squish the hammer to get a sense how the hammer will sound when it will be played. If the surface of the hammer is loose, the tone will be muffled and dull. If a hammer does not budge at all, after a while it will start to change.

Mating

How many ways are there to mate a hammer to the strings?

- Use the jack tender and block the hammer against the strings with the finger; this technique is not sensitive.
- Hold the shank with a hook and use a plucker.
- We need to know what the crown is doing. Another way is to feel the nerves in the fingernail bed to sense the string height or hammer shape. For example, you can feel less energy in the fingernail if the string is too high.

How do you trust a new set of hammers? Each set of hammers is opened up and each hammer is placed in an epoxy holder that is attached to a shank and flange. In this way, a new hammer can be played in a piano in order to hear the tone before it is installed.

Foundation

To do foundation by hand, do three things.

1. *Needle*
2. *Redistribute*: redistribute the lattice air pocket spaces in the hammer. Spank the hammer – never spank the top of the hammer. We want felt to move, not to form a crown.
3. *File*: we are only removing fibers that are not connected.

Why is it that old hammer felts repel a needle? We looked at a photo of felt fibers at 10 microns. When you file a hammer you can never count on anything being stable. You have to move felt.

When the hammers are cut, you are building the foundation by listening to the core body of the middle of the hammer; at this point don't worry about seating. Retain and preserve as much felt as possible. When we cut off the edges, such as the cupping on new hammers, we are altering the consistency of that hammer.

Needling

Correlate the length of the string to the treatment of the hammer. Look at grooves on the ends of the hammers. If the grooves are too long, the tone will not be as pure. Bechstein finishes the regulation extremely well. Voicing is a demanding job and takes a long time; it requires strength and stamina, patience and speed, knowledge and skill. Whether you use three needles at once or one needle three times, if you want a voiceable hammer you are playing with energy. Everything you do to a really voiceable hammer creates an undoable impact.

Putting the needles in the back side of a hammer is less effective and is a good way to practice. There is more of an impact on the front side shoulder than on the back side. The front side is more consequential because the front side of the shoulder is more participatory when it contacts the string. Needle here for more results.

There are six factors that influence needling.

- Speed
- Force
- Depth (Burying the head of the needle bite)
- Rapping the hammer
- Number of needles
- Diameter (use increasingly large diameters; generally use a 3). Smaller diameter needles have more potential to cut fiber. If you are burying the needles you could be cutting and destroying fibers. Everything matters.

String Leveling

Clark prefers to alter the hammer than the string. Make the cushion on the top of the hammer not too hard or soft and you will not be destructive to the termination point. Move the strings as little as possible. Moving the strings too much eats into the termination point.

Tools

- Wheeled Adjustable Tool Stand: Mobile repair kits for professional bike racers are wheeled and portable.
- Plucker: wooden tool from fine restaurants
- Multi-purpose paddle: sandpaper on one side (60 grit), other side used for rapping the hammer
- Side-voicer from Pianotek

Miscellaneous Techniques

- Pluck the string, then hit it with the hammer
- Short short long, short long short