Samick & Young Chang were forced to disinvest in korea, which forced Young Chang into bankruptcy. The tarriffs for importing are so tough that it is very difficult for outside companies to come in. Now Young Chang has started back up in Lakewood, but it's tough. The Chinese factory never stopped. Samick has an injuction so that they can't even get a Young Chang part. Samick now has real piano people. Samick was originally a Yamaha copy.

VOICING & TONE
Phil Glenn
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How do you describe the sound a piano makes? A bell? How about words like bright, rich, deep, resonant, full, etc. These are visual words. Music is an emotional and a cultural language. How do we measure tone? Tamber, pitch, harmonic placement, color, balance. What creates the color of a tone? The attack, the sustain, the projection. What we do as voicers is to manipulate the sound quality of the hammer. We can change the termination points, the way the hammer hits the string, the density & shape of the hammer, regulation, weight, pinning. What else can affect the tone of the piano? Humidity, room acoustics, carpet, humidity, location in the room, the soundboard & bridges, casters, lid, even the decal. So where do you start? With what the customer wants. But what if the customer doesn't even know? It would be interesting to sit down and figure out what percentage of each of these different aspects actually affects the tone of the piano.

Have you ever tried to describe the European sound as compared to the American sound or the Asian sound? The European sound is more colorful, the American sound is more powerful, and the Asian sound is more pure. When the European pianos were designed, they were used in parlors and salons. In the late 1800's, the American piano was being developed and was used in concert halls. The meticulous Japanese culture does the same thing every time, so everything is very consistent. They have a clean harmonic sound. They use a high-tension scale. The hammers are hard so that they don't need a lot of voicing, which makes them more consistent.

The manufacturers specify the density, thickness and weight, and make the hammers to each company's specifications. The quality of felt that Steinway uses is lower, because they lacquer their hammers instead of pressing them. Steinway hammers are so inconsistent that they take a lot of hand attention. The Japanese and the Koreans take a thin felt and smash as much felt into the cawls as possible so they are like a nice little rock. These hammers are always consistent. The Asians use a hot press, as do the Europeans. Hot pressing is a faster technique. The Americans use a cold-pressed hammer, which takes longer to make. How hot is hot? Young Chang's press was 110 degrees, to heat up the cawl and to help shape. The hot press/cold press issue is not as important as the thickness of the sheets of felt. Some companies pre-bend, some don't. Renner uses hydraulic presses, Abel doesn't. Shaping Renner hammers produces a washboard effect on top, yet needling is easier. Even the fibers make a difference, depending of the ratio between long-hair and short-hair sheep.

Daryll Fandrich demonstrated felt tension. He sliced the molding down the middle with a band saw until the blade hit the tip of the felt. This shows the elasticity of the hammers. Some open and spread apart more than others. Americans start soft and build them up. The Asians start harder. The Chinese hammers are all over the map. The Chinese are making everything over there now.

We watched a promo video made in 1926 by Beckstein. Carl Bechstein had a vision in the mid-19th century Romantic era. In 1853 he started his own workshop after years of apprenticeship in France and Germany. The entire piano construction was shown in fast-motion black & white.

The "inner rim" is called the "skeleton" in Korea, and the "sound body" in Germany. This is where the main sound comes from. We turned our chairs around to look at three opened grands in order to compare differences in tone. *Sustain, dynamic range and evenness of tone* are the three basic elements of sound. Assuming that string leveling, hammer mating, regulation and tuning are all done, now listen to the tone. How do you listen to sustain? Plucking the note tells the design of the piano itself. All we can change is the sound created by the fundamentals and the hammers, which involves hammer and string manipulation. How long does the fundamental carry that sound? As the fundamental dies away, there might still be tone quality. We listened to a tone where the fundamental went away quickly even though

there was still sound. The sound that carries the tone into infinity is the fundamental, where you can kind of watch the tone go right off the edge of the piano and continue on. This is what to listen for in sustain.

Where does that sound come from? The deepness of the shoulders. Imagine that you have a billiard ball in one hand and a tennis ball in the other and we drop them onto the cement.. The billiard ball is a William George hammer. The type of hammer we want is the tennis ball that bounces back. Create resiliance in the support by making the shoulders more springy.

Yamaha jabs the shoulders from the 7:00 to 11:00, using short needles.

Renner, instead of jabbing, pushes deep into the shoulders from about 9:00, pointing toward the shoulder, and radiating up to about 11:00. Use three long needles. By getting deeper, the felt becomes springier. Deep needling also helps with dynamic range. The way to measure dynamic range is to imagine a scale from one to ten, playing the note from soft to loud. Listen to determine when the sound stops getting louder. Now play the note and hold it and listen to the sustain. When the power stops, you hear more distortion. Sometimes Renner hammers will go up to a ten, and sometimes with Young Chang hammers it's hard to get them up to an eight. This technique works on resilient hammers. Renner produces a big effect because they are easy to deep needle.

To get the "bloom" we have to do some top needling to get the attack. This is a swell in the sound just before it starts to decay. Between the string mark and on the outer edge, Phil needled very shallow from 11:00 up & over the top to 11:00. This takes the crunch out and helps the sustain. This takes some of the bite out of the top. Then he went right across the strike point in a straight line 1-3mm deep or so. Feel for the crunch. It's like a massage when they work out the knot. Do the whole piano, and try to get it even all the way across.

Chinese hammers sometimes come like pillow. Just needle the crown and the hammer becomes quite resilient. It is hard to listen to tone and dynamic range with lacquered hammers. We're looking for sustain around the edges and the shoulders, and dynamic range from the inner hammer, deep in the hammer. Evenness of tone and the attack comes from the top. With really hard hammers, steam them. The steam opens them up to create some space so they are not so hard and compact. This provides room for resilience.

When you get a lot of noise, put your finger on the duplex and see if the noise goes away. Go straight across the top through the strings, feeling for tone, trying to get the hard spots out. Needle along the line of the strike point. Remember not to touch the magic point under the hammer. Imagine a pearl or a teardrop from about 3mm from the strike point down to the wood. If you get the needles into this point it will take out all the resilience out of the tone. If you kill the tone, sometimes ironing and sanding can help, but the only way to fix it is to treat it with lacquer. On the crown, put acetone, not lacquer.