Ear Training for the Piano Technician

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Sound is all around us. Our ears are always turned on. The mechanical part of our ears records all sounds. If you're trying to learn to hear better, you use your brain and your filtering mechanism, not your ear drums. The reason we recognize certain sounds is that we have a memory of certain sounds. We learn in degrees and progress in stages. As piano tuners we must take pleasure in the inherent value of tuning unisons. Some people have a knack for hearing beat rates. Learning voicing skills takes a disciplined approach. You must be around it a lot and practice consistently. It takes 10,000 hours of practice to become a virtuoso or an expert.

Tuning

Before learning to tune, we did not know things like what voicing was. We start with learning aural tuning. Even with a tuning device, stop the lights and listen. Virgil Smith, a strictly aural tuner, had a tune-off with Jim Coleman, who used a device. The first tune-off, Jim used a Cybertuner and an Acutuner. Both pianos were the same model and were fully regulated ahead of time. Jim won the first tune-off, and Virgil won the second. No one knew who tuned which piano, and everyone at the convention voted. Dean Reyburn developed the Reyburn Cybertuner; he learned from Virgil Smith. Jim Coleman is such a good tuner that he does not need a machine.

<u>Why learn to tune aurally?</u>

1. What if the machine fails, like the battery is dead, there is no outlet, or you don't have your machine? What do you do? Maybe you have a spare machine, but probably not. Do you stop and reschedule? Or do you continue and tune aurally?
2. All tuning devices have memories. Tunings from different pianos sound differently. What if you tune a piano to the wrong program? Without listening to how the piano actually sounds, the end result of a wrong program could sound awful. Memories can also be accidentally erased.
3. Picky customers can notice the difference between a machine-stretch and an aural stretch. Some good musicians have a particular sound in mind for their piano, and they really want that sound, which must be created by ear. Investigate the possibilities of sound and tuning with the customer to find out what they like. A happy regular customer is valuable for long-term business.
4. Aural tuning is your basic training for good voicing. It's the same skill with different facets. You are analyzing what you hear and comparing it. Good voicing is not just poking needles in a hammer. It is finding a sound in the piano and then going to the next note and the note next to that. Voicing and tuning are totally the result of good listening skills, and these two skills are side-by-side. You can also learn things about voicing from tuning and about tuning from voicing. We section off our tuning with aural tuning, starting with unisons.
5. A machine does come in handy to measure unisons. If you are a couple tenths of a cent, you are OK, but the goal is pure unisons with 0 cents difference. When unisons are really close there is a textural difference even though you can't hear

the speed of beats. Sometimes the machine will say that the strings are the same. However, there may be a texture problem caused by one string higher than another, an uneven hammer, or some voicing problem. With a glassy piano, scrape down every string cut in the hammer with voicing needles as a temporary fix so that you can hear tones more clearly while tuning. Aural tuning can improve what a machine already says is perfect.

6. Pitch can vary with tuning forks, depending on temperature. A metronome always has a constant beat and can be used to count beat rates. Comparing beat rates of thirds and tenths is a good way to begin an aural tuning. With a machine you can practice this technique and then measure it. Presuming your machine is correct, you can learn pitch and tone so that you know in your aural memory what is perfect.
7. Choose an aural temperament. Start with the "A," then go through 4ths & 5ths and then thirds and sixths. Use the machine, take the readings, and then listen to it. This trains the ear for what eventually you should be able to do by ear. Another way is to tune by ear first, then check that note with the machine. Go in both directions. What you'll probably find is that sometimes you'll be really good and sometimes you'll be way off. Pull the mute out and compare the beat rates in order to determine why you chose one sound and the machine chose another. During each tuning, pick something to work on to improve your aural tuning. On one piano it might be the first three thirds; on another, it might be unisons or a series of intervals. Each tuning take a few minutes to practice your skills. Some pianos are hard to hear. They may be old pianos, the bridges may have been carelessly made, they might have been in an incompatible environment, things might be unglued. By being disciplined about pitting your ear against the machine, you might find that there are certain places, like at the break, where you can actually tune better than the machine. You might be able to smooth out the bumps. Tuning the same piano over and over by ear can create a habit or sound pattern that might be incorrect; by checking the tuning against the machine and then comparing the intervals, that allusion can be broken.
8. Machines are good at testing stability. When tuning aurally, everything might sound excellent, but the base note may have drifted. A machine will catch this error. Tune any note by ear, measure it with the machine, then strike the key hard three times and measure the note again. The tuning exam allows up to .9 cents of change.

Voicing

How do we learn what the desired sound is that we should be striving for? Go to a room with lots of pianos. Go from piano to piano and put into words the differences between the makes and models, and even between pianos of the exact make and model. Listen to the sound of attack and then the sustain. If the attack is cut out of the sound, leaving only the sustain, some people cannot tell which instrument is sustaining. Pluck a string with the fingernail and listen to the attack. "Brightness" is all about the attack, not the sustain. Doug Wood and Susan Willanger both work on the University of Washington pianos. While both of them are excellent technicians, each of their pianos sounds different. Listen to their work and you can identify the two different styles.