Pitch-Raising

Roger Gable

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Roger has been tuning for 50 years. In the old days there was the Con Strobe Tuner; then Peterson came out with smaller machines. Roger uses the Peterson strobe tuner. He likes it because the read-out is instantaneous, which speeds up the process. Roger went to the PTG museum in Kansas City displaying antique tools, and there was the Peterson strobe tuner that he still uses! It gives a 2:1 on the octave, with no inharmonicity calculated within, so Roger checks by ear. He'll tune all the A's and will watch how fast the patterns move up the scale on all the center strings. Then he will tune all the consecutive center strings. The only problem if the pitch is being raised by ten, twenty or fifty cents, in which case a pitch raise is definitely necessary.

Roger tuned his first piano in 1964. He saw a Con tuner. He was doing floor tunings for a Wurlitzer dealer and got one of those machines. He quickly learned the benefits of the machine. There were three other tuners who went around and made a point of telling all customers never to hire anyone who used a machine. This bias was put into the music community's heard. Now, fifty years later, almost all tuners use machines. In our group, only three people do not use a machine. The strobe tuning does give a perfect 2:1 ration. There are seven different bands on the wheel, and each band is an octave. When you play a note, you can see the inharmonicity in the bands. Those on the outer edge are the higher harmonics and move faster than the fundamentals. The wheel spins the same, but the flashing lights spin faster on the solid wheel.

Because Roger likes rigid slots in his schedule, he has devised a way to do a pitch raise as a passable tuning in the hour and a half that he has allotted. He schedules tunings every two hours. He can bring up the worst pianos in the same time it takes him to do a quality tuning on a piano that is close. With pianos that are far out, he will put a respectable tuning on it knowing that the piano should be tuned again in two to three weeks. However, most people are happy enough with this rough tuning that they don't schedule the second finer tuning. Whether the piano is twenty to even sixty cents flat, it doesn't make any difference.

He will strip-mute the piano and will tune all the A's to get an idea as to how much each string must be pulled up. From experience, he has a sense of how much to move the hammer without even listening to the notes. Then, starting at the base, he pulls up the outside strings by ear to the point where they should be at standard pitch. Now Roger has learned to pull each pin up accurately according to how far it was down in pitch, without wasting too much time. If the piano is only eight or nine cents flat, there is no way he can turn the outer strings just that little bit without spending too much time: it is time-consuming to be that accurate. So he decided to pull every other string up if it is 5-10 cents out. If it is 40-50 cents flat, he will pull up all the other strings except for the center. Eventually he learned which pianos respond in which way. For example, older pianos shift les. Wurlitzer spinets are the worst and will drop really fast, so he always had to over-shoot with them. Sometimes he would screw up, and would have to do it over again. This was all aural. When the new tuning devices came out he tried different sequences. Now Roger is wondering how much difference there is between machines and aural tunings. It would take Roger an hour to do a passable pitch-raise tuning with his strobe tuner, whereas the newer machines do the same in half the time.

During this session, Dean Petrich will be tuning with a Verituner and by ear. Scott Craven will be using a . The test is to find out how many cents off the notes are after one single pass with each device on pitch-raising mode, called "over-pull."

Scott does not over-tune the wound strings. He will tune them aurally. His machine allows placing the tuning change at the break point; the over-pull can be limited by five cents. The machine will calculate how much over-pull is necessary for each note. Scott starts in the bass and goes note by note to the top treble. This program was taken off the Acutuner approach. When you sample the piano you can sample 5 C's, and can add extra notes along the way, or you can do a split scale, which takes four samples below the break and four samples above the break. This produces a good stretch. The notes you tune first affect the later ones. The lower notes will be flatter. According to Robert Scott, who invented the , the over-tune is intended to be used by tuning from bottom to top.

Dean uses the Verituner to tune all the middle strings in about ten minutes, and then uses his ear to tune the outside strings to the center strings in about fifteen minutes. On this particular day his old device was turning off on him during the pitch raise. A couple times when he turned it on, he intentionally tuned a few notes to regular tuning rather than to over-pull to find out how far the notes would drop from zero on a 20-cent pitch raise. The notes that were tuned to the over-pull measurement came out from zero to two cents of the desired pitch; most were within one cent. Those tuned to the regular tuning setting without over-pull dropped five to six cents flat.

Dean finished in twenty minutes. Had he done a more precise pitch-raise at a slower pace, the over-pull may have tuned the notes within one cent, but why be so careful when the piano is going to be fine-tuned immediately after the pitch raise? Would this shorten the tuning time? Sometimes it is quicker to do a couple quick 20-minute pitch-raises and then a quicker tuning than it is to be meticulously slow and careful the first time around. In this case, three faster tunings might take the same length of time as two slower ones. The ultimate goal is a quality tuning; the customer does not know, remember, or care how long the process took.

Dean tuned aurally for his first twenty years before deciding to try a device. He started with Ed McMorrow's invention, and then moved to an Acutuner for many years. The Acutuner scales the entire tuning off three note readings. When he switched to the Verituner he was amazed at the consistency of the scale. The latter two devices offer the most accuracy and variety of readings. Dean chose the Verituner after reading a review by a Canadian member who commented that everyone in his chapter agreed that the results of the Verituner sounded the closest to how a piano would be well-tuned by ear. One of his justifications was that, after sampling all the A's, for each note that is played subsequently, the Verituner will sample and re-calculate the tuning for the entire piano using the increasing information from every note played. The Cybertuner samples fewer notes but takes a triple reading on each sample. Both devices produce excellent results.

In Dean's opinion, there are several advantages to using a device. One is that it is extremely accurate. When tuning by ear, when a note is only one cent off it may be difficult to discern if that note is one cent flat or one cent sharp; a machine verifies which it is immediately and visually. A second advantage is speed. With the absence of guess-work or the puzzle of setting an accurate temperament, tuning can be done well in a very short time. The third, and Dean's favorite advantage, is peace of mind. Rather than exhausting and challenging, the process of tuning is made easy, relaxing, stress-free and stimulating. Yes, during a tuning Dean does frequent aural checks, and at the conclusion of every tuning he checks the entire piano

aurally, but during the electronic process the job can become practically hypnotic. It is possible to get into a space of feeling and hearing the notes fall precisely into place without having to work hard mentally. This is true of tuning in general, whether with a device or by ear: once in the zone, movements flow smoothly, and, whether using the eye or the ear, the tuner feels and knows the moment when the note is right on.

Jim Faris has always been an aural tuner. His reason is that he is too lazy to learn a machine. An electronic tuning device is a tool, and, like all tools, it depends on who is using it. At the conclusion of this session, Roger re-assessed his attitude toward electronic tuning devices and wrote the following: