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**Strategies and
Techniques for Passing
the PTG Tuning Exam**
Part 1: Tuning the Initial A4
to an A-440 Pitch Source

**Core Competencies
in Piano Repair**
Removing Broken Screws
and Repairing Stripped
Screw Holes

**Working Through the
Coronavirus**
One Technician's
Perspective – Part 3

Tuning the Pianist
Piano Technology Through
the Lens of a Pianist

**The Victory Vertical
Project**
A Historical Case Study in
Recreational Music Making

Tuner's Life
Stories from the Hills, Set III



Tuning the Pianist

Piano Technology Through the Lens of a Musician

By Jason Terry

In 2012 I received the opportunity to work in piano retail. My responsibilities were mostly clerical, but occasionally I worked on the floor. Within a few months, I realized I knew very little about the instrument that I was trying to sell to potential piano buyers. Beyond the number of keys, purposes of the pedals, and the different sizes of the instruments, I had no idea what else to tell customers. Now for the embarrassing part: I was earning my doctorate in piano performance. At that point I had been studying music at the collegiate level for seven years, and yet I knew almost nothing about how my primary instrument functioned.

For most piano students, the terms and procedures related to piano technology are not only foreign, but there is not even an expectation to hear and know such terms. We are trained solely to read the notes and rhythms and how to work the instrument, rarely on how the instrument can be made to work for us. My interest in the technical side of the piano was affected by being involved in piano retail; I was often around a piano technician who was servicing floor models and working in the shop. That experience instilled the desire to learn more, but it was nearly a decade before that opportunity would present itself.

As an artist and teacher, I eventually realized there are significant benefits to knowing more about the mechanics of one's instrument. In the summer of 2020, I received the opportunity to participate in a one-on-one apprenticeship with James Geiger, RPT, in Waco, Texas. Because I gained this knowledge through the perspective of my training as a pianist, I believe my perception was unique. It is that perspective that I am glad to share with you.

Documenting the Experience

My training began in Jim's living room, next to his Baldwin grand. We began by discussing tuning theory — partials, beats, inharmonicity, etc.¹ It was clear that Jim was seasoned as a teacher and had a straightforward curriculum planned out.

Afterwards we immediately went out to his shop, where I practiced tuning unisons on a Mason & Hamlin Screw Stringer piano. I quickly realized that the act of tuning has two parts: (1) the mental/aural component, and (2) the physical/hammer-adjusting component. Individually, these elements are difficult enough to navigate at the beginning, much less attempting them both simultaneously.

The next few weeks consisted of tuning unisons by ear, then octaves, fourths, fifths, thirds, and eventually the art of temperament². Throughout these lessons, Jim constantly quizzed me:

- “How many beats per second does interval x get?”
- “What are the first eight partials from note y ?”
- “How many cents wide or narrow are the following intervals?”

And the list went on.

By the end of summer, I was tuning pianos offsite — not as quickly as you professionals out there, but to the point that I was happy to claim the jobs myself.

In addition to the tuning lessons, I regularly got to help out with different jobs around the shop. Some of these were assignments from Jim's curriculum; others were “real life” jobs that Jim allowed me to participate in alongside him. To share a few of these with the reader:

- Restrung treble and bass sections
- Check and repin action centers
- Ease keys
- Rebush keys
- Remove and replace hammers
- Measure key resistance (downweight, upweight, front and balance weights) and calculate friction accordingly.

Additionally, I was able to help out with alignment procedures on action parts. After practicing on action models, I made some adjustments on a grand action as well.

Besides the experiential learning, there were a few other areas which were enjoyable as well. The first was ordering my first set of technician's tools. Jim patiently walked me through several catalogs and price lists before helping me place my first order. That was a highlight, at least until the bill came. Second, I learned of several different piano technician resources, from Jorgenson's *Tuning* to Potter's *Piano Action Handbook*; from Mason's *Piano Parts and Their Functions* to Igrec's *Pianos Inside Out*. Jim's personal library was vast, organized, and extremely helpful to a novice like me, whose interest in this field only intensified throughout the summer. Furthermore, I was invited to a PTG Waco Chapter meeting, where I quickly learned that part of being a successful piano technician is enjoying coffee and doughnuts with colleagues.

Learning as a Pianist

Incredible. This is the word that I have used each time someone has asked me, “How was it?” Indeed, the experience satisfied a curiosity, but it was much more than that. After completing my first day with Jim, I went to the piano that evening and began practicing my repertoire. The piano as an instrument sounded *substantially* different that night than it

ever had before. Immediately, I was hearing beats and partials for the first time. While those “fundamentals” had always been there before, I had never, as a pianist, been trained to listen for them. Moreover, after hearing these elements of the music, I learned that one can learn to adjust *to* these elements and allow them to work *for* the pianist. Looking forward, since I have been taught to listen in this way, now I can share this concept with my students.

During my first week of training, I was standing next to Jim’s Baldwin as he was explaining things to me. Occasionally he would leave the room to get another book from his library, and while waiting, I pressed down a few keys. While doing so, I noticed there was something unusual about his piano. I did not say anything to him at the time, but I found out a few weeks later that what I’d perceived as peculiar was actually a piano that had been so finely regulated that it very nearly played itself. What I discovered that day was how meticulously an instrument can be regulated in the hands of a skilled craftsman (as well as how awful are the conditions of most university pianos). To date, I do not believe I had ever played an instrument in such remarkable shape.

My take-aways from this are worth noting:

1. Many pianos labeled as “bad” by pianists simply are not regulated to specifications.
2. Because of this, action regulation is more important than most pianists realize, if they are even familiar with the term.
3. An expensive piano is made to be played *by* a pianist, but with the artistry of a skilled technician, many pianos can be played *with* the pianist.
4. Many universities make the imprudent financial decision to purchase new instruments rather than effectively maintain the ones they have.

I mentioned previously that I’d had the opportunity to make some adjustments on a grand; this piano was for sale at a local piano retailer. I worked alongside Jim, servicing some of the instruments on the floor, and this particular instrument needed some regulation and voicing work. In a matter of minutes, we were able to change the tone and playability of the piano. As a pianist, I was amazed to discover how many different characters one instrument has inside it, and how much depends on the voicing of the hammers and the regulation of the action. From independently reading textbooks, I understood that pianos can be adjusted, but to me, these adjustments were only shades of one color. I had no idea one can actually change the color completely. And though I realize that full regulation and voicing jobs are substantial in scope and length, the fact that one could make noticeable adjustments in under an hour was shocking.

Finally, from being around a number of them, I learned more about the diverse makes and models of pianos. As an

artist, it is important to know what pros and cons exist in the marketplace. But, as a piano teacher, it is imperative that I know not only what exists in the market, but also what cost-effective options exist for my students. One of the outcomes of this experience was learning more about the different acoustic models on the market, both new and used. This includes understanding which instruments hold up, which ones are financially viable over a range of incomes, as well as some of the specifics of different models. (I’m thinking of you, Baldwin pinblocks.) In summation, as a pianist, this leveled the playing field among piano manufacturers.

Conclusion

The interest in learning more about my instrument was planted nearly a decade ago in the private sector, not through my training as a pianist. Thus, initially, piano technology was appealing to me as a learner. Shortly thereafter, however, it was apparent that there were a multitude of benefits for a *pianist* to know more about this instrument. While many of you are thinking *Of course*, most pianists are not trained to think that way. We are instructed to use our minds and then our bodies. The instruments themselves are seen as non-negotiable, and we rarely talk about how the physical mechanics of the instrument can aid (or negate) our physical gestures and brain’s engagement with music-making. After witnessing the subtlety of colors that can be created on a highly maintained instrument, one sees immediately the direct impact that it has on artists and audiences.

Finally, as a teacher, the fundamental information gained about our collective instrument is all worth sharing with my students. Outside of a handful of piano technology programs scattered around the country, there are not many opportunities for piano students to gain such knowledge. At my current institution we have a heavy piano pedagogy curriculum. Although there is no doubt that we must train our piano students how to teach, I hope that we can eventually make that training more holistic by including a basic understanding of the instrument and how it functions; pianists should not be the only performing musicians unaware of their own instruments’ mechanisms. Additionally, we must be aware of which instruments are on the market today. As teachers, we are often asked to make suggestions to purchase-ready parents.

Perhaps some of you might be interested in sharing your knowledge, either periodically or in a more formal apprentice setting. If this is something you find yourself attracted to, I offer two thoughts:

- First, you should enjoy teaching. There are a number of piano teachers who would rather perform than teach, and students can detect this. Being a teacher requires dedication, thoughtfulness, planning, and most of all, patience. Although Jim’s curriculum was extremely well-rounded, it was his patience and commentary that afforded me any success I might claim.
- If you do not feel ready to take on a teaching role, then consider something less committal, such as being a one-time guest lecturer. Contact local piano teachers, either

independent or university-affiliated, and offer to give a short lecture. In addition to the advertising, you gain the opportunity to share something you are passionate about with others who likely have never been around such a trade. (After all, when you tune a piano at someone's house, the customer usually vacates the room!) Perhaps your PTG chapter would consider relocating one of their meetings to a local school, job fair, university, etc., and meeting with the students. I know our MTNA collegiate chapter (most of whom are pianists) would love to host a PTG group. Maybe each member brings a tuning lever and lets the students tune a few unisons. The opportunities are only limited by your creativity.

In closing, it is essential that I offer my gratitude to the following individuals who allowed my experience this summer to be more successful than I could have imagined. From hosting me to allowing me to look over their shoulders, to permitting me to ask unending questions, these individuals embodied the incredible experience I had:

- Tommy Edds, Metroplex Piano
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- David Geiger, RPT
- Ray Kampermann, RPT
- Wayne Knox, RPT
- Daniel Levitan, RPT

- Mike Reese, RPT
- Lise Uhl, McLennan Community College
- Angela Yoon, Samford University

Last but not least, I sincerely appreciate Jim and Susie Geiger, whose grace, tact, humor, friendship, and patience gave me something that I will not soon forget. Thank You! ■

Endnotes

¹ For the enjoyment of the reader: Jim had outlined his curriculum with me over the phone before I arrived. He mentioned that we would talk about inharmonicity, which I mislabeled *enharmonicity* — a completely different topic in music theory. When he mentioned the former topic, I remember thinking to myself, *Great, I'm already ahead of the game; I know all about enharmonicity*. Needless to say, I was wrong.

² Jim periodically gave me days off from temperament tuning because he noticed I was in, as he called it, “temperament shock.” He was not mistaken.

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