Aural Piano Tuning Workbook

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To be used in conjunction with a course on advanced aural piano tuning for beginning students of piano tuning and piano technicians who wish to improve their aural piano tuning skills.

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Tools Required

Professional Tuning Hammer Solid Tuning Fork Four (4) Handled Rubber Mutes Two (2) Papp's Mutes (for tuning upright pianos)

Software

Feature	PC	iOS	MAC .
Cents Meter	Tunelab97	iStroboSoft (\$)	Tunelab Pro (\$)
Waveform Viewer	?	Soundbeam (\$)	?

Links:

SoundBeam https://itunes.apple.com/ca/app/soundbeam/id494982357? mt=8&at=1001lo8W

iStroboSoft https://itunes.apple.com/ca/app/istrobosoft/id308296029? mt=8&at=1001lo8W

Tunelab Pro https://itunes.apple.com/ca/app/tunelab-piano-tuner/id335568329? mt=8&at=1001lo8W

Tunelab97 https://www.tunelab-world.com/tl97.html

Tuning Hammer http://store.howtotunepianos.com/?product=professional-tuning-hammer

Handled Mutes http://store.howtotunepianos.com/?product=handled-rubber-mute

Papp's Mutes http://store.howtotunepianos.com/?product=papps-treble-mutes

Lesson 1 Feeling the Hammer and Changing Pitch

The first thing you will try to do as a piano tuning student, is try to change the pitch of a string. Exercise 1 will guide you so that you reduce the chance of breaking strings and also, help you to concentrate on what to notice as you practice changing the pitch.

Note: Even professional piano tuners occasionally break strings. You should have a plan of what to do -if- when you break a string.

MY PLAN - What I will do -if- when I break a string:

Nothing. I will leave the broken strings and not repair them. (Possible if you have a real clunker, but eventually, if you break enough, you will have to deal with these broken strings.)

Hire Someone. I know a tuner who will help me. I have already spoken to them and they have agreed to come and repair any strings I break, for a fee.

Repair or Replace. I know how to repair or replace a string. I have had training and can do it myself.

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Exercise 1 Changing Pitch

Goal: Learn to feel how the hammer force affects the pitch.

Procedure:

- 1. Choose any pin.
- 2. Mute strings so only one string is free to vibrate.
- 3. Measure the string and lower it by 20 cents. This helps prevent string breakage during this exercise. (Use iStroboSoft or equivalent app.)
- 4. Measure and record the Original Cents Offset of that string. (That is, the new cents offset that is 20 cents below where you found it.)
- 5. Record your target pitches for each section. I.e. if the string measures 5 cents as the original cents offset, enter 25 cents in the first box, and -20 cents in the 2nd box. Then next two boxes for +/- 10 cents, would be 15/-5, and so on.
- 6. Try to move the pitch up and then down 20 cents from the initial offset.
- 7. Try to move the pitch up and then down 10 cents from initial offset.
- 8. Try to move the pitch up and then down 5 cents from initial offset.
- 9. Try to move the pin up and then down 1 cent from initial offset.

NOTES: Do not concern yourself with trying to tune the string at 0 cents. Work from the Original Cents Offset that you measured for that string, and the target pitches you calculated.

Try to feel if/when the bottom of the pin (called *the foot*) moves. It does not move with the hammer at first. You need to exceed the friction in the hole. (Friction tries to stop things from moving). Also, you may not need to move the foot when trying to change the pitch by small amounts like 1 cent. This exercise is designed to help you get a feel for when and why the foot moves, and to develop a feel for being able to tell when it moves and when you may want it to move.

You should be able to feel the foot *give way* when it finally moves. You may also hear a "click". Remember, you may not need the foot to move if you are trying to get a small change in pitch, like 1 cent.

Exercise 1 Chart

Original Cents Offset (After lowering 20 cents):				
	Upper Target	Lower Target	Notes and Observations	
Change +/- 20 cents				
Change +/- 10 cents				
Change +/- 5 cents				
Change +/- 1 cent				

Exercise 1 Expected Observations

You should have noticed that the pitch was very sensitive to any small movements of the hammer. In fact, you may have noticed with the 5 cent and 1 cent windows that the pin foot didn't need to move at all to produce the cents change you were trying for.

As piano tuners, we must be aware if we are turning the pin foot, or just twisting the tuning pin, and when and why we might want to, or not want to do so.

The next few exercises will try to help you formulate an idea of when you may want to, or not want to move the pin foot, and how to do that.