

TUNING techniques

by
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Have you ever met a harpist who loves to tune their harp? Probably not. Many harpists spend most of their time playing the instrument, and much less time understanding the mechanics of tuning. Consequently, when common tuning issues arise, many harpists mistake them for problems with the regulation on their harp. That's where I come in. In this article I am going to dispel some frequent tuning myths I hear and give you some tuning tips to help you get your harp in tune and stay in tune.

Open Position Tuning

The conversation below is a real call I had with a harpist who shall remain anonymous. This is one of the greatest examples I have had of a "regulation" problem that was in fact a result of *not* tuning in the open position. This is a true story that happened more than once. The name of the caller is not actually Harpist. I changed it since I did not want to embarrass Ms. Gnockwatts.

Harpist: "Hi Peter. You regulated my harp two months ago, and it is now out of '*regulation*.'"

Peter: "Hello Harpist. This is unusual. Tell me about your problem."

"When I tune at first every thing seems fine. I spend 15 minutes tuning carefully. Then when I start playing and I have to change pedals the pitch is wrong—it goes out of '*regulation*.'"

Peter: "So, you tune, then move the pedals and it goes out of tune?"

Harpist: "Yes. It goes out of '*regulation*.'"

Peter: "Tell me, are you tuning in natural?"

Harpist: "Of course."

Peter: "After tuning, you move the pedals and come back to natural, is it out of tune?"

Harpist: "Yes. It goes out of '*regulation*.'"

Peter: "Please try tuning your harp in flats and see if the harp goes out of tune when you pedal to natural."

Harpist: "Why?"

Peter: "I am trying to understand your problem better and this will help. Please?"

Harpist: "OK, I will try."

Peter: "Thank you. Call me and let me know what you find."

Days later...

Harpist: "Hi Peter. I cannot believe it! You fixed my harp over the telephone. When I tune in flat, my harp is in '*regulation*' when I change to different key signatures.

Thanks."

Everywhere in the above conversation change the word "regulation" to the word "tune." Go ahead and try it. I will wait.

You see, harpists speak *Harpish* and technicians must develop good translation skills to interpret *Harpish* to a language that makes sense. Here is a polite translation of what Harpist said:

“When I use improper tuning techniques, the tuning on my harp is improper.”

This is the *most important* lesson you will ever learn about proper harp tuning: ***tune in the open position***. On the pedal harp “open position” means tuning with all the pedals up in flat (key of C-flat major), and on a lever harp all the levers should be down or disengaged from the strings. The reason that we tune in the open position is that when a lever or disc engages a string (technicians call this “gripping” the string) it “clamps” the string in place. More on why this is bad for tuning in a minute. First, though, how do we know the string is clamped? If the grip is sufficient to hold the string tightly so that it is not buzzing it is *clamped* down on the string. It is highly possible that an F-sharp that is buzzing is not being gripped tightly enough to stabilize the string, thus the string is slipping and buzzing in the part. If the string is clamped in place, there is no buzz. In the remainder of this article, I will often refer to discs and levers as clamps. They are of course not really clamps, some people out there will be squirming in their seats at this wording but it will emphasize the point.

When tuning a string that is being gripped by a clamp, the fact that you are turning the tuning pin and the string is moving above the clamp does not mean the string is moving the same amount below that clamp. In fact the clamp is very resistant to allowing the string to be dragged through it. If you are tuning the string upwards to a pitch, usually there is more tension above the clamp than below after turning the tuning pin. When you disengage the clamp by moving the lever off the string or putting the pedal up, the excess tension that was above the clamp will instantly add itself to the rest of the string. Viola! The string is now too high in pitch! Here is an example:

Use your tuning key to tune your third octave A string slightly below A-flat in the open position (about 1/8 of revolution of the pin). Now engage the clamp to natural (pedal in natural or lever up). With the help of your electronic tuner, tune the string up to the correct A-natural pitch. *If you go above A-natural start the example over.* When you are sure that the pitch is correct, release the clamp. Now re-engaging the clamp back to A-natural and check the pitch on your tuner. The string which you were convinced was properly in tune is now (most likely) out of tune. You can try this on several different strings to get the idea.

The fact that you will get the most accurate tuning by using the open position should be enough incentive to use this method. But if that’s not enough to convince you, there are two other reasons to tune in open position. Tuning while the clamp is engaged can turn the disc or even move a lever. Now you really *do* have a regulation problem. Another reason to use the open position is to prolong the life of your strings. Dragging your strings through a clamp wears out the strings.

Tune often and you spend less time tuning

This is the second-most important lesson you will hear about tuning: a harp that is tuned often is a breeze to keep in tune. It just needs a little reminder every day to stay in tune

well. I know it sounds funny, but a quick tuning once a day is much easier to keep up than an hour of intense tuning once a week. Quite often new harpists avoid tuning since it can be a chore until it is mastered. But think about it, why is your teacher's harp in tune so well? Because not only are they practiced at it, they also tune often. You might think of it like riding a bicycle—most of the effort required is just needed to get underway, but once you are rolling along, it requires much less effort to keep going.

Tuning is a dynamic thing on the harp because the tension on any given string actually affects the tension on most all the other strings. So if one string breaks nearly the entire harp is out of tune. If the second octave F breaks, all of the second and third octaves are guaranteed to be too sharp.

If you have not tuned your harp for more than a week, the first tuning should be a *speed tuning*. Do not try to get every string perfect the first tuning; you are wasting time. Plan to tune the entire harp once within five minutes. You are using a speed tuning to get the strings that are more than a few cents off back in the ball part. Following up the speed tuning with a real good tuning proves to be efficient and effective.

Keep the tuning pins turning firmly

If your tuning pins turn easily, then your harp is going to go out of tune easily.

This is *the* most common reason a harp will not hold tune very long. Most technicians, manufacturers, and dealers tire from hearing, “My harp will not stay in tune,” when the most common culprit is tuning pins that turn too easily.

If you like for your tuning pins to turn easily, then you will have to live with the fact that you will either spend more time tuning or playing out of tune. It is that simple.

There is no mechanism or gear that holds a tuning pin in the harp neck. The pin is just a tapered rod that is wedged into a tapered hole in the wood of the neck.

By simply turning and tuning the pin will slide down the taper away from the string and become un-wedged thus turning more easily in the hole. To tighten the tuning pin you will need to use a screwing action not just a turning or spinning action. Screwing means that you will need to push the pin inward while turning. Here is a technique for screwing the pins in:

Stand up behind your harp. Place your tuning key onto the tuning pin. Turn the tuning key to lower the pitch while you push (screw) inward on the pin. This turn should be about two hours on the clock. Then push (“screw”) the tuning pin inward while bringing the string up to pitch. If you do this properly, the tuning pin will stay firmly in the hole for several weeks (often months and months) before needing to be retightened.

“But I *do* push in when I am tuning!” you say. I have come to the conclusion that if you are pushing in *hard* while tuning, you are doing more harm to your hand, wrist, and arm than it is worth. You are not actually tightening the pins using this method. The only effect (other than stress) is to *possibly* keep the pins from loosening. If your tuning pins turn easy just use the method I described to tighten them up and forget about it until they loosen up some time later. A few moments of using the “screwing” method will pay off not only in aiding your harp to hold tune longer but reduce that detrimental hand wrist and arm stress from pushing in while tuning.

When I am working on a harp that has loose tuning pins, I just stop and use the screwing method to tighten up the pins. After that I do not push inward while tuning because the pins are already tight. My arm is much better off for it.

“Can I use a hammer to tap the tuning pin tighter into the hole?” (This is harpish for “Is there an easier method?”)

Yes.

“Is it recommended?”

No.

“Why not?”

Tapping in the pins does not keep them tight for nearly as long as the screwing method does.

Tune UP to the pitch and Pull on the string after turning the tuning pin

Have you ever been tuning and noticed that you turned the tuning pin and the pitch did not change? Your ear and the tuner detect no change in the pitch? “Nothing happened.” Wrong. Something did happen. You *did* turn the pin, but the string did not slide through the nut. Pull on the string before turning any more and then check the pitch.

Why does tuning up work better than tuning down to a pitch? The string does not always slide over or through the string nut all the time. Since you are tuning in flat at this point the strings “speaking” length is from the soundboard to the string nut. At the string nut the string goes over a curved groove as it bends on its way up to the tuning pin. When tuning, 98 percent of the time the string does move evenly and smoothly when you are tuning *up* to the pitch. If you are tuning down to the pitch, the percentage decreases to about 90 percent—most musicians are not fond of this percentage.

Experience shows that tuning up to the pitch keeps the string in correct pitch longer than tuning down to the pitch. How can you test this concept? Try tuning down to a pitch, check the pitch on your tuner. Then pull on the string and check the pitch with the tuner, the pitch often goes flatter after getting pushed. If you do not pull after turning the pin the pitch often goes flatter later while you are playing.

This is because the string does not always slide over the string nut evenly when the tuning pin is adjusted – it can prove to be “weak” clamp so to speak.

The amount of pressure you should use when pulling should be as though you are playing *fff* and *no* more. You do not have to actually pluck a sound from the string, just pull it. Actually, the best way to adjust the string is to *push* the string forward with your thumb, but I will settle for pulling the string.

A common mistake harpists make in stage tuning occurs from failure to follow this technique. And it is extremely useful here since you are not plucking the string very hard you can make up for that by silently pulling the string. The harpist checks and corrects the tuning quietly on stage, but fails to pull a little extra on the string without plucking it. Then later that string rings out slightly flat during performance. The same string might be checked a few times during a performance. Afterward the harpist might be convinced that

there is something wrong with the “regulation” or the string when, in fact, it might just be the tuning method.

Upper pluck those 7th octave bass wires

The seventh octave bass wires are indeed hard to hear for most people. Tuners, even the most expensive strobe tuners, do not display the pitch of these strings, or the upper first octave. While it might seem like an annoying technical deficiency on the part of your tuner, it’s actually a blessing in disguise because it will force everyone to do some ear training. A way to make these very low pitches easier to decipher is to pluck the string up near the brass action plates. This makes the string favor the higher tones it produces (like playing soundboard, and thus you can use those pitches to bring the string in tune.

To conclude:

Proper tuning technique is something that you need to practice in order to master. The explanations and techniques described should help you achieve more success in tuning. Lever harps usually come into proper tuning more smoothly than a pedal so some of the examples will not be quite as noticeable on them. I hope you enjoy more time playing in tune and less time tuning.

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