

Tuning Up

The basics for setting up your flute

by Jennifer Cluff ~ Printed in Flutewise Magazine U. K. in 2003

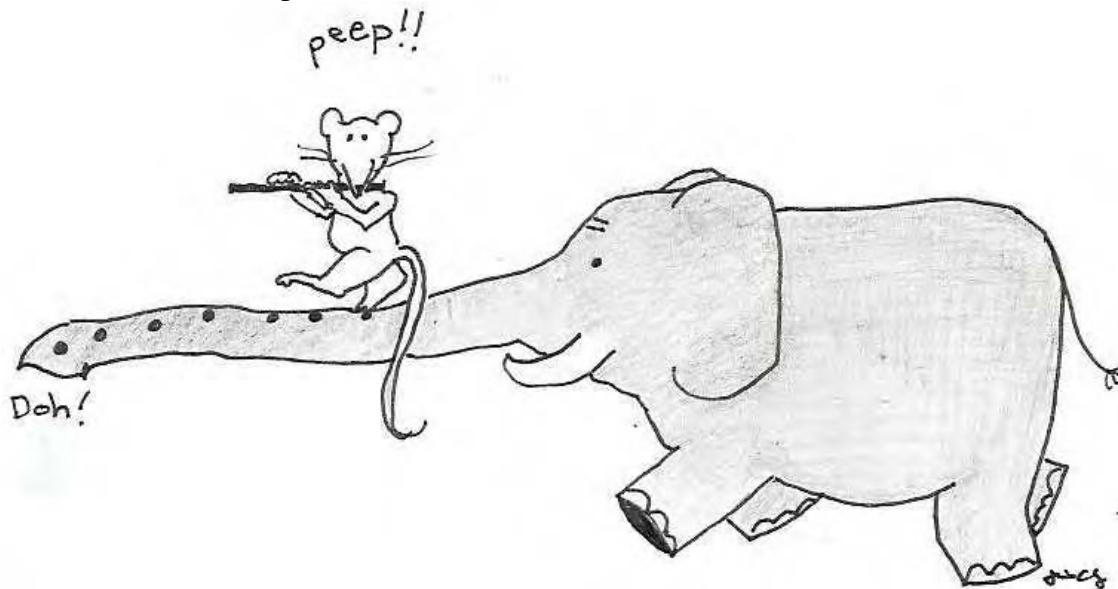
I remember that when I was 11 years old, in my very first orchestra class in school, that the music teacher would have us play an “A” and say to each of us individually: “ You’re flat, you’re sharp..... flat.....really flat.....very sharp...” and so on down the row. And since I didn’t have the tiniest clue what to do about all this flattening and sharpening, I would idiotically twist the crown round and round at the top of my flute, and then sit there hoping for the best. (Fat chance! Twisting the crown tighter and tighter actually was putting my flute more and more out of tune!) And that’s why as a flute teacher, I believe it’s entirely possible that there may be some beginners out there who will want to know how to *truly* tune their flutes. So let’s start with the basics.

The first thing to know is this: The longer a tube is the LOWER the noise it makes.

Think of a bass flute with its long yards of pipe.

The shorter a tube is the HIGHER the sound it makes.

Think of a short little piccolo.



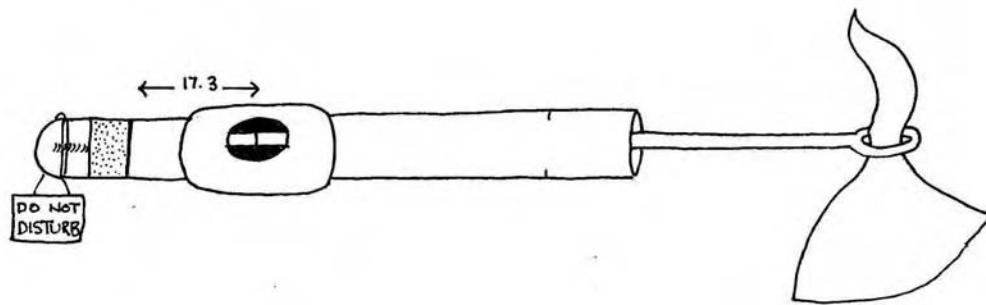
How do I make my flute play lower or higher, flatter or sharper?

The length of the flute’s tubing can be changed in two ways; firstly by changing the position of the cork that’s inside the crown at the top end of the headjoint, and this only needs to be done once (thank goodness). Once it’s correctly set up, you simply leave the crown alone, and don’t tighten it any further (which would pull the cork out of position again.)

Checking the cork in the crown:

The headjoint cork has a silver plate at each end and should be pre-set to a permanent spot, which is 17.3 millimeters from the center of the embouchure hole.

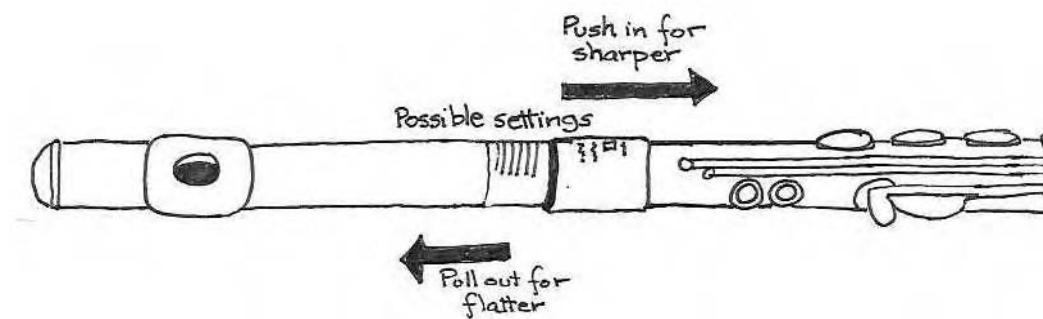
Check on your own headjoint that your cork is in the correct position using the marker on your cleaning rod. Insert the marked end of the rod and look to see if the tick-mark is visible exactly in the very center of the embouchure hole. You may want have your teacher check your cork with their cleaning rod as well, as unfortunately, some cleaning rods have the tick-mark in the wrong place!



If your cork is set too far to the left or right, ask your teacher to show you how to move the cork to the exact center at 17.3 millimeters. Moving the cork has to be done cautiously as some important flute bits can get bent or dented. The cork should also not move easily. If the cork is too loose, and slides around, you may need a new one (inexpensive; but requiring a trip to the repair shop.) Once the cork's position is set, remember: don't over-tighten the screw-on crown ever again. It should be turned and tightened only up to "finger-tightness" and no further. If you have an older flute with a loose crown that keeps coming undone, or vibrating when you play, one or two tiny dabs of clear nail-polish around the crown rim will hold the assembly more permanently in place.

Drawing out the headjoint:

The second way of lengthening or shortening your flute starts with the pulling out of the headjoint from the flute's middle section. This is something you'll do *every time* you play to fine-tune the tube's length.



The farther you draw the headjoint out, the longer the flute's tube becomes and the flatter will become the pitch of your flute. The further you push in the headjoint the shorter the tube becomes and the sharper will become the pitch.

The flute maker's standard is that the headjoint should at all times be pulled out anywhere from three millimeters to as much as fifteen millimeters. The number of millimeters depends on the flutist's individual embouchure, the design of their particular

brand of flute, and on the temperature of the room that they're playing in. If one day you were playing in an icy room with a VERY sharp piano, for example, you would need these extra millimeters for emergency sharpening.

Middle D matching experiment:

Are you ready to experiment? Let's start by pulling the headjoint outward a full ten millimeters from the flute's middle section and lining up the embouchure hole in your normal playing position. Play for a few minutes various notes and tunes in different registers high and low, do some relaxed long note warm-ups to get a great ringing tone and good hearty breathing, and let the games begin!!!

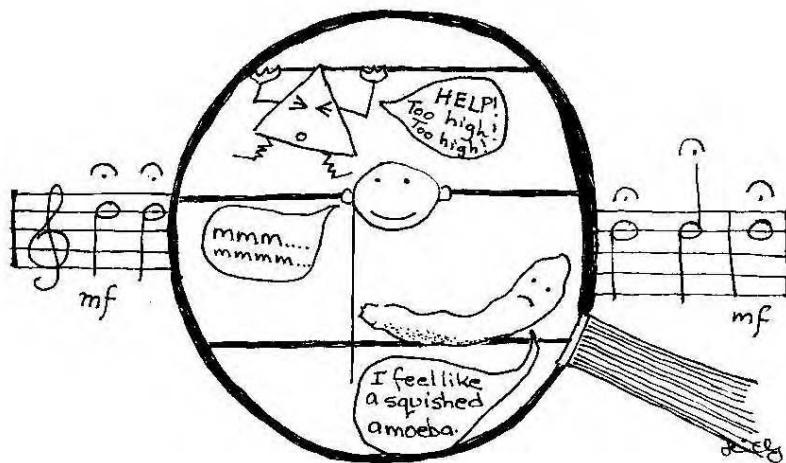
Ask your flute teacher to have tuned their flute to A-440 using an electronic tuner and then to play a series of longtones on the middle D on the staff. This is an easy note for students to start tuning with as it's not very bendable, and both hands are balanced on the flute. When your flute teacher is playing their middle D *mezzo forte* with a clear and unwavering tone, open up your ears and really take in the sound of an "in tune" D.

Then, with a pre-warmed flute, add your own *mezzo forte* D to the air. Play with your normal lips, and most clear tone. Listen to the two D's with the completely clear ears. Ask yourself "Am I in tune with their D? Am I sharper or higher in pitch? Or flatter or lower in pitch than their D?" If you're not sure which, (and during the first few experiments a feeling of not being sure is entirely normal), listen closely for several repeated middle D's. Then take your flute down and careful not to squish the flute's keys or rods, gently twist to push the headjoint into the body one more millimeter. Play your D again against their D. Is your D getting closer or farther away from theirs?

After listening analytically, slide your headjoint inward another millimeter and listen carefully again. The two D's may be gradually getting closer together, and you'll want to hear just HOW close. When they become identical, the sound will go very smooth.

Several minutes later, when you've pushed in the headjoint until there are only three or more millimeters left to go, you'll either be playing the exact same pitch as your teacher, or you'll be so incredibly far away from their note it will feel like your eardrums are beating themselves like bat's wings. If this is still happening, pull your headjoint back out to the ten millimeter starting mark and begin experimenting again going in the opposite direction. This time twist to pull the headjoint OUT one millimeter after each set of longtone D's. Make sure that your millimeter measurements are very precise and small.

At some point (and it may take several experimental sessions, but they're all well worth it) any bats flapping your ears noises will noticeably slow down to only the most occasional flap, and then they'll start to disappear, and the two D's will sound identical. What you'll sense at that instant will be a smooth, slightly louder and clear sound and there will be a serene, singing and easy-blowing quality to the pitch coming from the note D on the two flutes: Mmmmm...



When that smooth sensation of an absolute D-match is achieved, your flute is tuned up! Now you'll be in a position to learn to tune it further for future melodies and harmonies using even more refined embouchure and airspeed techniques. You will be able to continue in future lessons to learn to tune the flute's harmonic overtones (low D overblowing to middle D to match the octave) and then learn to tune your scales, (do-re-mi) your melodies, and your flute duets.

In the future, more advanced "how to play in tune" lessons will help with the flute's tuning in orchestras and ensembles, and how to play perfect harmonies with your pitch beautifully blended into a ringing chord. But it all begins with the basic tube length that you've started with today.

Playing arpeggios to place your basic embouchure:

Because there may be times when you're not sure whether you're using your normal embouchure and blowing style, it's very useful to play a whole arpeggio of long notes, experimenting with various dynamics before sustaining a middle D (or when tuning to A-440 which you'll come across in the future).

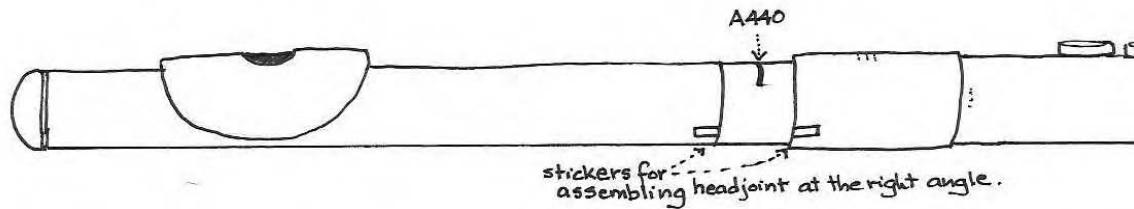
This is also a clever method of tuning with piano on stage, before a performance. Ask the pianist to play D minor chord while you experiment with the notes of a D minor arpeggio [D F A] testing in turn various pitches and dynamics.

Here are some important points to remember when tuning:

- 1. When tuning to another instrument or when using an electronic tuner, make sure the flute is well warmed up.** Cold flutes are always too flat, and a warm flute is what you'll actually be playing, realistically, when you're in the middle of a performing a piece of music. So if your flute has gone cold, always blow through it gently with all the keys closed, sending warm air down the tube for at least three lungfuls before tuning.
- 2. Always use your best, clearest tone.** Warm up your lips until your tone is truly centered and non-fuzzy first before matching pitches with anyone. You want to first establish your normal embouchure for low, medium and high notes before deciding if the lip shape, flute on the chin placement, and airspeed and angle are what you normally use while playing.
- 3. When matching pitches avoid rolling your flute in or out** using your wrists, or creating deranged gargoyle-lips to try and mangle the mouthpiece into being in tune. Instead you must use the embouchure and normal blowing angle that you use to have a beautiful tone at a mezzo forte. You will blow normally and then simply move the headjoint in or out of the body, a tiny micron at a time until you find the matching pitch.

Speedy Gonzales tuning: Over several months of tuning experimentation you may notice that you usually draw your headjoint out to approximately the same spot over and over again. A tarnish line or two will start to form at this point on the headjoint's tenon. I find it very helpful not only to mark this line with black permanent marker (ultra-fine tip) so that I can more easily gauge the tiny distances I'll be moving it each day, but also to place lining-up stickers on the headjoint and middle section in order to quickly line-up the blowing angle as well. (see drawing below)

These markings, out of sight on the back of the flute, help me set up my flute instantly at rehearsals and lessons, and very close to perfect length for fine-tuning every time I put it together.



Jennifer Cluff is Principal Flutist of The Vancouver Island Symphony and is a private instructor in Canada. Jen is currently writing a practise book for intermediate flutists under the working title: 'The Magic Flute ~ How to Play the Flute Really Well, Really Quickly' which will be published next year.