

As you notice the changes that happen in your throat, take care to just observe them. Don't try to tighten your throat more than it naturally does on its own, or you could inadvertently introduce undue muscle tension.

The third change, the aperture or embouchure change, doesn't come naturally to all players. First of all, many whistle players, as mentioned earlier, hold the mouthpiece too far inside their mouth to be able to affect the airstream in this way. Some others use aperture changing techniques quite naturally and unconsciously. All players should become aware of these techniques because they are very useful, in more ways than just helping to produce the octave jump.

TIN WHISTLE EMBOUCHURE

These aperture changing techniques can be properly called tin whistle embouchure.

A commonly held myth is that the tin whistle is just a "blow and go" instrument, one that can offer great sophistication in fingering embellishment possibilities but is strictly primitive when it comes to blowing. When you take a closer look and do some experimentation, you discover instead that there are unexpected possibilities in nuance and fine control in the blowing of the instrument, particularly with fine handmade whistles. Inexpensive, mass-produced whistles tend to be less responsive to embouchure.

The whistle's range of dynamics and tone colorations is smaller, to be sure, than that of the flute and many other instruments, but it is significant nonetheless. The use of these possibilities, whether conscious or not, is one of the things that distinguishes fine whistle players.

The abdominal breath support and throat narrowing combine to speed up the flow of air that arrives at the front of the mouth. Now, with embouchure changes, you can further speed up the air flow *without* having to blow more forcefully, thus using your air supply more efficiently. This means you won't run low on air as soon. Plus, you can *focus* the airstream.

Both the speeding up and the focusing of the air stream help correct for pitch. Try this. Blow a low E and then increase the air speed, *only* with the abdomen and throat, just by the *minimum* amount required to cause the jump into the second octave. You'll hear that the high note is very flat in pitch. More air speed is required to bring its pitch up to the correct level. That means, if you are *not* using embouchure, that you need to support the breath more with your abdominal muscles and/or narrow your throat more to create enough air speed to bring the note up to the correct pitch. If you use embouchure to aid in the process, you don't have to expend as much energy with your abdomen or use up as much air to achieve the same result.

Narrowing the airstream with the lips also has the added benefit of giving the tone of the instrument more focus and clarity. This effect can be heard when playing notes in the low octave as well as the high. I also notice that when blowing with a more focused airstream that a fine whistle will respond more quickly to finger movements.

Your lips can narrow the airstream in both the horizontal and vertical dimensions. I was recently surprised to find, upon checking in a mirror, that the narrowing I do occurs as much or more in the vertical axis as in the horizontal. The muscles used are much the same as the ones used in controlling flute embouchure, i.e. the muscles of the lips and the lower cheek areas. There is no need for tension in your upper cheeks.

PLAYING A WHISTLE IN TUNE

As you now see, after trying the pitch experiment described above, the tin whistle does not play in tune of its own accord. It is a variable-pitch instrument.

Electronic tuning machines attempt to measure the fundamental frequency of a note and compare it to the pitch standard that we call *equal temperament*. This provides us with a useful starting point, a good way to establish whether *overall* we are playing our whistle sharp or flat of the generally accepted standard pitch level of A440. Once we have warmed the whistle up to room temperature, and then to breath temperature, then adjusted our tuning slide or mouthpiece so it seems we are playing at the right overall pitch level, next we need to attend to the intonation of the individual notes that we play.