

So far, we have been working only with the notes of the low octave. These are the fundamental notes of the flute. The notes of the second octave are the first overtones of these lower, fundamental notes. I won't get into the physics, acoustics, and music theory of these matters here. If you are curious about it, I recommend that you read one of the many good books on those subjects.

AN ILLUSTRATIVE EXERCISE: WORKING WITH LOW G AND HIGH G

While the difference in embouchure between two adjacent notes is very subtle indeed, the difference in the embouchures of, say, a first-octave G and a second-octave G is quite dramatic.

To move from a fundamental note to its first overtone, we need first of all to increase the airspeed. Play a low G and then, keeping your embouchure unchanged, blow faster by forcing the air out harder with your abdominal muscles and by narrowing the throat with the back of your tongue. This may take some experimentation if you are unfamiliar with these muscles. To get familiar with the back of your tongue, begin to say the letter K. You will feel the back of your tongue close off some of the space in your throat.

For now slur these notes together, that is, keep the air flow uninterrupted; don't use any tongue or throat articulation. Move slowly back and forth between the low G and high G in this way. The high G probably sounds louder and rougher than the low G. I'm guessing that it is farther away from your ideal sound than the low G is.

EMBOUCHURE REFINEMENTS

In order to make the high G approach your ideal sound several refinements of the embouchure are needed. There are a number of different approaches to describing these. I prefer once again the approach taken by Walfrid Kujala in *The Flutist's Progress*,^{vi} which I draw from on the following two pages.

We have already seen how it is necessary to increase the air speed to move from the low G to the high G. To better control the sound of the high G we need to *decrease the distance* between the opening of the lips and the far edge of the embouchure hole.

We can experience this easily through a crude exercise. Without changing the force of your blowing, play a low G, and press the flute very hard with T1 into your lower lip, adding a little upward push and the tiniest inward rotation of the flute. This brings the lip aperture closer to the embouchure hole's far edge, which, in turn, should cause the low G to jump up to the high G. As you try this, watch in a mirror and observe that the flesh of your lower lip rolls further out, covering more of the embouchure hole.

KUJALA'S *DIREKT*

Of course there is a far better way to achieve this same result. Kujala writes that this better method

. . . calls for a forward pressure of the lips, the lower lip taking the lead as if you were combining a delicate kiss and a pout. Remember, though, that when you try this. . . the grip you maintain at the corners of your mouth with your normal . . . embouchure should prevent the center of your lips from actually getting the puckered appearance we usually associate with a kiss. This friendly opposition of . . . techniques creates a tension that is adjustable through a remarkably wide range of gradations and refinements. . . .^{vii}

This embouchure maneuver, which Kujala calls the *distance reduction kissing technique* or *DIREKT*, naturally results in four things:

1. A smaller aperture between the lips,
2. A greater coverage of the embouchure hole by the lower lip,