The question may have already arisen in your mind: how does one play a given note and keep it in tune at all gradations of loudness or softness? The basic principle here is:

1. For loud playing one blows a faster air stream through a smaller opening.

2. For soft playing one blows a slower stream of air through a larger opening.

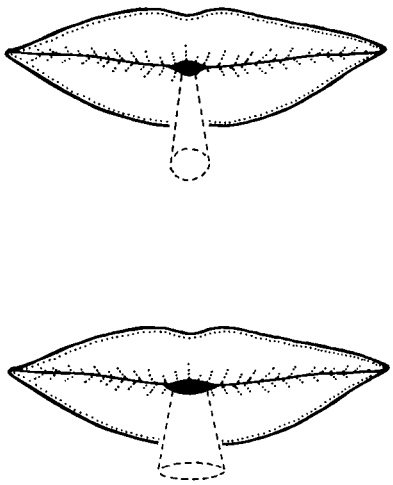

Figure 6-14. Top: With a smaller aperture you can produce a faster airstream, enabling you to play louder. Bottom: With a larger aperture you can produce a slower airstream, enabling you to play more quietly.

This leads you necessarily to the realization that these different facets of embouchure are all highly interactive, that changes in one aspect affect the nature or requirements of others, that there is no one, fixed set of size, shape, speed, angle, and distance "embouchure settings" for any given note. Not only that, the aspects of a note's embouchure often change in the *course* of the note, especially when, in playing slow tunes, you want to change the tone color, loudness, or both at the same time during a single note.

ROLLING THE HEAD OR THE FLUTE: RELEASING A NOTE GENTLY

When you wish to get softer as you end the last, long note of a phrase, you of course use the dynamic embouchure technique described just above. In addition, you can roll or lean your head back just a bit as the note fades away. This changes the angle of air travel which helps to keep the note from drifting flat at the end and adds to your dynamic shaping ability.

This rolling-in and rolling-out technique can be use to correct for pitch in other situations too, but be careful not to use it to the exclusion of developing the ability to correct for pitch with your embouchure. Since it is not as subtle a movement, it cannot be used with the speed and accuracy that you can use embouchure pitch correction. Using the two techniques together can be very useful however.

ARE SIMPLE-SYSTEM FLUTES INHERENTLY "OUT OF TUNE"?

This question begs another: what does it mean to play "in tune"? The answer is not so simple.

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 flute sharp or flat of the generally accepted standard pitch level of A440. Once we