6 Controlling the air stream: a balance of ingredients

Controlling the air stream in the process of developing technical facility on the trombone is an area of great importance. It is therefore strongly suggested that the player gain an understanding of it before studying the rest of this book. Certain techniques will be best approached by narrowing the air stream; others by widening it. Read and use the following for reference as needed.

Embouchure. The player's mouth/lip setting that relates to the mouthpiece of the instrument and supports the aperture.
Aperture. The lip opening through which the air stream passes.
Air Stream. The player's breath blown into the instrument.

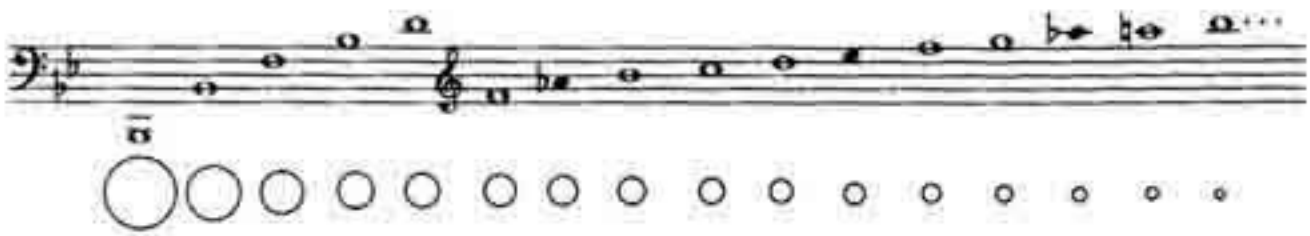
Every note of the trombone has its own "taste" or "feel". The taste of the note is determined by the pitch, the aperture opening, and the resistance encountered. Resistance is caused by the force of the air stream against the opening(s) that it passes through. In this light, low notes require a larger aperture than high notes, and loud notes require a harder air stream than soft notes. All notes, high or low, loud or soft, require a balance between the aperture and the air stream.

The aperture is sustained by the embouchure muscles. It converges toward the center as the notes get higher, (much like the f-stop settings on a camera). The following example shows a general relationship between aperture and register:

Ex. 1 R

Bb overtone series

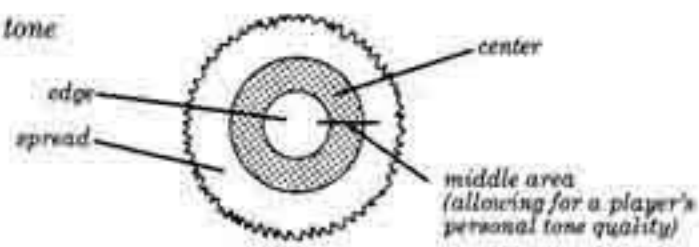
relative aperture size



Notice that the aperture is quite small for the last six or seven notes shown. Players use terms such as "pin hole" to describe the aperture needed for extremely high notes. On a given note, the larger the aperture, the larger the sound potential. The smaller the aperture, the smaller the sound, but the greater the flexibility.

Flexibility works best against resistance. Overblowing (too much air stream for the aperture) results in an edgy, blatant sound. Underblowing (not enough air stream) results in a spready, uncentered sound. The area between overblowing and underblowing establishes the personality of a player's sound.

Diagram of a tone



A big sound should stop short of spreading, while a small sound should stop short of being nasal and edgy. As a sound narrows, more resistance is met; as it enlarges, more air is needed to support it.

In the approach to several of the forthcoming techniques, and especially those where lip flexibility and endurance are prime factors, you should narrow the air stream and opt for accuracy rather than volume. Other techniques, such as the development of low notes, require a widening of the air stream with increased breath support.