

Reed Information

by Tom Ridenour

The reed is not a mystery and reed-making and adjustment are not voodoo! The reed obeys the laws of physics. A clear understanding of these laws will enable the player to adjust reeds and make reeds through logic.

--Tom Ridenour

I. Good cane has:

- A. Golden color
- B. Smooth, shiny bark
- C. Straight, evenly spaced fibers

II. Reed and Mouthpiece

- A. The reed's vamp proportions must conform to the mouthpiece facing
- B. No reed-fixing methods can be blindly implemented without considering the mouthpiece facing's characteristics.

III. Quality and Cut

- A. Fallacy: Bad reeds are due to bad cane.
Truth: Bad reeds are mostly due to bad shape.
- B. Good cane makes the difference once the proper shape and proportions have been attained

IV. Reed vibration

- A. The center of the reed vibrates at the speed of the fundamental
- B. The edges of the tip vibrate at the speed of the overtones
- C. A reed has to seal air-tight to start the vibration cycle

V. Air and Embouchure

- A. Ears and tip areas control sensitive air pressure
- B. Lip contact area in heart controls sensitive lip pressure

VI. Flex must be Perfectly Smooth Without Stiff Areas or Gaps

VII. Reed Tip is critical for upper register response. In a properly made mouthpiece the reed tip should be of an even thickness all the made way across.

VIII. Reed Proportions

- A. Side to side should be even to conform to evenly made mouthpiece rails
- B. Tip to back
 1. If the reed feels heavy for the air and light for the lip, the tip is too heavy
 2. If the reed feels heavy for the lip and light for the air, the back is too heavy
 3. If the tone is hard, the tip is too thick

4. If the tone is pure, but unresponsive in staccato, the tip is too thin
5. If the tone is “breathy,” the reed is poorly balanced
6. If the reed plays well forte, but collapses at piano, the tip is too thin

IX. Reed Balancing Procedure

- A. Place the reed straight on the facing for the playing test. Play the reed at all dynamics. Is the tone clear in all dynamics? Do you have to change embouchure pressure excessively to slur easily in the high register? Can you play softly in all registers? Is the staccato responsive?
- B. After playing the reed a few minutes, check the balance of the ears or sides of the reed. Deaden the right side of the reed and listen to the left side. Reverse the process. Test using sfz>p. Do the ears sound the same? Do they have the same decay resonance in sfz>p?
- B. Remove the reed from the mouthpiece and flex the tip of the reed to Does the flex from side to side confirm your playing test? Circle the stiff areas, or “hard spots,” with a pencil *while you are looking at them*. Is the tip of the reed the same thickness all the way across?
- D. Thin the hard area and repeat steps 1, 2, 3 & 4 until the ears are balanced. If the reed is then soft, clip a small amount and re-test
- E. Testing for side-to-side reed balance
 1. Alternately deaden the left and right sides of the reed and play
 2. A properly balanced reed will have the same tone, response and decay on both sides of the reed

X. Fine Placement of the Reed On the Mouthpiece

- A. If the reed is soft, move it up
- B. If the reed is hard, move it lower
- C. If the reed plays *slightly* harder on one side than the other, tilt the reed away from the harder side; this has the effect of thinning the mouthpiece rail on the harder side and widening the softer side; correct placement is arrived when the sides play and decay with the same response and resonance, and the altissimo is *instantly* responsive at soft dynamics

XI. Test for High Register Reed Balance

- A. Play high tones with breath attacks; notice the amount of air embouchure pressure necessary to begin the tone; determine if the reed sluggish to speak unless inordinate embouchure pressure is added
- B. Play E3 and slur to A3
 1. If A3 speaks freely with a full tone, the reed has good tip balance and will play the upper altissimo register securely
 2. If A3 fails to speak, requires added embouchure pressure in speaking, or has a narrow or confined tone color, there is imbalance in the final few millimeters of the reed tip

XII. Miscellaneous

- A. Fallacy: a hard reed is necessary to play the highest tones
Truth: while certain minimal strength in the heart of the reed is necessary to play the high tones, good high register response is mostly due to the fine balance of the last 3 mm of the reed and the left and right ears
- B. Fallacy: a soft reed has a clear sound and quick response, while a hard reed is often fuzzy and slow in response
Truth: Clarity and response are due to proper balance in the reed; properly balance, a hard reed may have excellent response and fine clarity while requiring very little embouchure pressure to center the sound