

# Mysteries, Myths and Misconceptions: Mastering the Clarinet's Unique and Perplexing Problems

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The first goal is to understand how the physics and the acoustics of the clarinet behave differently from any other wind instrument. Given that as background, the session focuses on refining our teaching of all facets of tone production and articulation, from the reed to the tongue to the lips and throat. Particular attention is paid to significant ways in which the clarinet cannot be taught like any other wind instrument. Since the tongue is not only the key to articulation but also to the upper register and to the color and shape of the tone, proven suggestions are made for correcting and perfecting the tongue's tasks, quickly refining tone, response and control.

See also: 2001 Mid-West Clinic handout, "[Exorcising the Clarinet's Most Persistent Demons, an Organized Approach to Tonguing, Tone and Tuning](http://www.midwestclinic.com/clinicianmaterials/2001/west.pdf)", by Charles West  
<http://www.midwestclinic.com/clinicianmaterials/2001/west.pdf>

## What makes the clarinet “Unique?”

1. The source of vibration is actually *behind* the player's lips and teeth, not at the lips as with brass and not in front as with flute.
  - Problem: Air speed must be controlled by the back of the tongue. This affects the tone's focus as well as response, especially in the upper register.
  - Problem: The Grunt, in the upper register--the result of relying on the instrument rather than the tongue/airspeed to produce the upper register.
    1. Practice in the upper register without the register key. Approach this both from above and below
    2. Squeak study, starting from open G, producing approximately a D a twelfth above, and approximately an A a fifth above that. Can be done on most fingerings close to open G, but the longer the tube becomes, the more difficult it is to produce the upper harmonics
    3. Practice at extremely low dynamic in the upper register, all the way up to the top of the altissimo if possible.
    4. Tonguing study in the upper register: Demnitz, Kell 17 Staccato Studies.
    5. The register key may be opening too far. Be sure the register key opens about a nickel's thickness only.
2. The clarinet pitch is very stable, and has characteristics unlike those of other woodwind or brass instruments.
  - Problem: Hard or impossible to push the pitch upward
  - Problem: Dynamic changes affect the clarinet the opposite of most other wind instruments
    1. Soft = sharp  
(Remember Quantz's advice to flutists 250 years ago—flutists should push in for slow movements. Perhaps clarinetists should pull out for the same reason.)
    2. Loud = flat if not compensated for by keeping the tongue position high in the mouth. "eee" is the vowel sound.
    3. The first notes on any breath are sharp because of gas density. This makes “staggered” breathing particularly difficult.
    4. Often, the taper on the end of a phrase goes sharp.

3. Overblows a twelfth.
  - Problem: a single vent serves as speaker key for the widest range of notes of any woodwind instrument. This presents challenges with the longest and the shortest fingerings.
    1. Low E and F are flat on virtually every clarinet made, (though the Buffet Tosca has provided a very good compensation for this problem. This is an acoustical compromise that ensures that the B and C a twelfth above will not be unmanageably sharp. Keep the tongue high and when it's possible, don't play those notes exceedingly loud when possible.
    2. Really, "tuning note C" is a rather poor tuning note, especially if "open G" is not tuned first.
4. The air column is exposed to the fingers all the way up and down the instrument.
  - Problem—Much of the clarinet's tone comes from the tone holes themselves, thus, finger closeness can affect pitch. Thus, while "keep your fingers close to the keys" is good advice up to a point, it can be overdone, causing the throat tones to be flat or just unreliable.
    1. This is good news, though, because the fingers can be used to flatten certain notes.
    2. Trills are more successful when the fingers move a distance, rather than stay close to the instrument.
5. Has a single reed that has to work as a mirror image of the mouthpiece facing.
  - Reed balance is critical. There is no such thing as a reed that is balanced for every mouthpiece. The reed works as a mirror image of the mouthpiece just as a car's right front tire works as the mirror image of the left front tire.
  - Reeds can get harder the second day because of warpage.
  - Clipping reeds may be necessary to create more resistance, but the thicker tip often makes an ugly sound. Thin the tip without taking wood out of heart and the sound will "warm back up."
  - There are only two kinds of problems with reeds—mechanical or organic. See <http://www.midwestclinic.com/clinicianmaterials/2001/west.pdf> for a detailed discussion.
6. The back of the tongue focuses the sound, the middle gives it depth, and only the tip articulates.
  - "tickler," where the student allows the face of the reed to tickle the tip of his/her tongue.
  - Tonguing on a finger, to feel the tongue's approach and
  - We can make the Grunt worse instead of better by asking for an "open throat." Most people think of the "ah" vowel sound in this instance, which is the antithesis of a successful tongue position.
  - A successful "wolf whistle" leaves the tongue in position for clarinet.
  - Since the tip of the tongue has to move upward toward the face of the reed, a pencil can be useful--to play "tongue limbo."
  - The key to tonguing is the upper register.
  - Above all else, SET BEFORE YOU ATTACK (not as you attack)!

- # Smiling embouchure
- # Mouthpieces that sound good but tune badly. Remember that the mouthpiece chamber greatly affects the short fingerings especially.
- # Barrels that sound good but tune badly. Remember that the barrel's interior diameter affects the size of the twelfths
- # Weird ligatures. Remember to test a ligature at very loud dynamics to be sure that the tone does not spread.
- # Spreading the opinion that the better one plays, the harder reed one uses!
- # The "open throat," (whatever that is!)
- # Breathing . . . not understanding what the diaphragm actually does!
- # Bass clarinet--angle & embouchure
- # Using "tuning note C" without tuning open G first

**My personal Epiphany.** “One day Robert Marcellus picked up my clarinet and played it. Remarkably, he sounded just like Robert Marcellus!”

**The Lesson.** It is important to have fine equipment. *But your sound is formed inside your body before the air even enters the mouthpiece.*

### **Reeds: Removing the Mystery and the Misery**

- A. Cane: The raw material
1. Cane is the single most important variable: bad cane makes bad reeds, period. You can recognize the quality of cane by the way a ballpoint pen feels on the back as you write on the surface.
  2. Cane always warps. For this reason, one who makes one's own reeds can warp and then flatten the cane by sanding it before it is cut into a reed. It is vital that reeds be flat, since the mouthpiece table is flat. Here are the types of warpage that commonly occur:
    - a. Convex--the most common, resulting from the reed drying too quickly. Reeds that have warped in a convex or concave fashion will seem to have become harder than they were when they were new.
    - b. Concave--rather rare, resulting from the reed drying too slowly or getting too wet. Also causes the illusion of stiffness.
    - c. Bending inward toward the mouthpiece, resulting from playing the reed too much when it was new. Makes the reed seem softer than originally.
    - d. Avoiding these types of warpage (Keys to reed longevity):
      - (1) Where you keep the reed
      - (2) How you seal the reed
      - (3) How you break a reed in
- B. Adjusting single reeds
1. Balance (The reed must be a mirror image of the mouthpiece)
    - a. Test the reed by leaning first on one side and then on the other. The side you're leaning on when it sounds the best (the most colorful) is the **hard** side.
    - b. The second test is to slide the reed slightly to one or the other side of the mouthpiece. The side slid toward the center when the reed sounds best is the hard side.
    - c. Usually, one can remove wood from the shoulder to equalize the stiffness. For the most part, try to leave the corners of the tip alone.
  2. Clipping: If the reed is just too soft, it must be clipped. Unfortunately, this causes the tip to become too thick, causing the reed to brighten and to not play well in the altissimo. *So once you clip, thin the tip!*

- a. There is really little latitude for variations of tip thickness. Between .004 and .005 inch seems to be the lower and upper limits. Thinner causes high-pitched squeaks, and thicker causes a reed to become bright and recalcitrant in the altissimo.
  - b. The corners of the tip need to be slightly thicker than the center. A dull sound comes from a reed with thin corners of the tip.
3. Removal of wood to soften:
- a. Always use the balancing process first to remove resistance. Once balance is achieved, only then can sanding of the heart or back be useful.
  - b. Brightness happens when the heart is thin in comparison to the tip. Darkness happens when the difference between heart and tip is greater. Thinning the tip will not take resistance out of the reed unless you sand farther back over the heart—it will just darken the reed.
4. Width and overall shape of the reed:
- a. Too wide:
    - (1) Reed does not focus well
    - (2) Response can be poor
  - b. Too narrow: the reed is gone. It's too thin-sounding, bright, wiry. If it's great cane and you make your own reeds, make an E-flat clarinet reed out of it!
  - c. Parallel sides vs. more obliquely angled sides (wide at the tail vs. more narrow): The narrower the tail, the more focused the sound will be.
5. Other useful information:
- (a) Any bumps on the reed will hinder its response. This includes roughness on the edges and bumps or slivers on either of the cut surfaces.
  - (b) Weather affects reeds. They rarely work as well in rainy weather as when it was nice out.
  - (c) Altitude affects reeds. The higher you go, the harder the reed gets.
  - (d) The ligature makes a difference. Test ligatures on loud dynamics, listening for the tendency for the sound to hold its shape or to spread.
  - (e) No reed works well on a filthy mouthpiece. Use lemon juice and be sure the rails are clean.
  - (f) Mouthpieces wear out, generally with "rail tilt," or the erosion of the side rails at the fulcrum of the facing. The symptom of a mouthpiece that is "on its way out" is that it becomes more and more difficult to make a reed work (or to find a reed that works), or if the warpage (erosion) is really bad, you'll get high-pitched pressure squeaks. Every time a mouthpiece is refaced, some of the material is removed from the rails, so there is a limit to how many times a mouthpiece can be refaced.

### **Charles West**

Charles West is an orchestral and chamber clarinetist and soloist, performing solo recitals or concertos throughout the United States, Europe, Latin America and Asia. He appears regularly on the programs of international gatherings of clarinetists in America and in Europe, and has been called "one of the most recorded clarinetists in American Academia." His recorded repertoire ranges from the most standard of sonatas to the most avant-garde, on labels including Klavier, Wilson Audiophile, Centaur, CRI, Crystal, and he is heard on a 1993 Grammy Award winning Telarc CD.

West holds the Doctorate and three other university degrees, has been a Fulbright Scholar, and he served as Treasurer of the International Clarinet Society. He was instrumental in merging the present-day International Clarinet Association from two previously separate entities, and he was elected to the first Presidency of that organization. His career has included ten years as Principal Clarinet of the El Paso Symphony Orchestra, twelve as Principal Clarinet of the Flagstaff Festival Orchestra and one as Principal in the Peruvian National Symphony Orchestra. He has held teaching positions in three North American universities, with guest professorships in South America, Taiwan, Hong Kong, and the People's Republic of China. He has been Conductor of the Richmond Symphony Youth Orchestra and Director of Orchestral Activities at Virginia Commonwealth University, and is presently Professor of Music and Coordinator of Winds, Brass & Percussion at VCU, artist-clinician for the Buffet-Crampon Corporation, and Conductor of the Youth Orchestra of Charlottesville-Albermarle.