



# Learning From The Pros

By Greg Banaszak

## Mauro Di Gioia President Of Reed Geek

In this column saxophonist and reed artisan Mauro Di Gioia will be sharing his invaluable information on a topic we all have in common, regardless of playing style – our reeds. I had the pleasure of meeting Mauro at the 2014 NAMM show in L.A. and can attest first hand that his knowledge and passion for assisting us as saxophonists is quite special. Mauro Di Gioia is a saxophonist and entrepreneur residing in the Reno-Lake Tahoe area of Nevada. He is the founder and President of ReedGeek, Inc., which manufactures the ReedGeek Universal Tool Products in Carson City, Nevada. As of late, he has dedicated his time to the betterment of reeds and reed performance for all woodwind players.

Mauro has stayed busy through the years lending his talents too many production shows backing legendary performers and running his own bands. He's also worked with notable organizations, such as Comic Relief producing and musically directing for various relief efforts. After earning a BS in Agricultural and Managerial Economics from UC Davis, Mauro was fortunate to study under and befriend the Jazz Great Jimmy Smith, who stoked his lifelong fascination with sound and playing. This preoccupation with sound and mechanics later resulted in business ventures with the intent of improving instrument acoustics, mouthpieces etc, which directly led to the development of the 1st practical reed tool for woodwind players, the Reed Geek Universal Tool.

**...So, you have a new box of reeds that aren't playing well.** Do you blame the manufacturer, the cane, your mouthpiece, your horn, or even your ability or capacity as a musician? Well, take heart, it's not your fault! No one goes to an auto parts store, picks out random engine components, puts them all together on a car and expects them to function well together and the car to perform like a Porsche. But, this is often the plight of woodwind players.

We spend countless hours a day behind the wheel of this often poorly performing "automobile," practicing and practicing, as we are told, until it can be driven like a race car. Numerous times I was told, in my youth, to "just practice" and not to worry about how the woodwind components were interacting with each other. However in actuality, practice is more fruitful, productive, and even joyful as the result of a finely-tuned, functioning system. Practicing ones craft is a given, but time and attention should be focused also on getting the horn to a point where all aspects are acting in symbiotic unison. And, even more time and efforts should be spent understanding and mastering the often overlooked, yet crucial, role of the reed.

**The reed, mouthpiece and instrumentalist form a working system** that are all interdependent. For optimal performance they must function as a unit. Air pressure from the player's lungs supplies the energy to excite the instrument's bore. The reed regulates the pressure opening and closing as it vibrates along the facing curve of the mouthpiece. For a reed to perform well it has to be balanced within itself (the back must balance the tip fulcrum, the rails and heart must balance each other) so it has a natural vibration along the whole length of the reed, as well as being balanced and functional on a given woodwind mouthpiece.

The reed, along with the mouthpiece (properly seating and oscillating as a unit) is a generator for the air column to vibrate and excite the instrument's bore. How effectively it performs this task largely determines the pitch and timbre of the notes being played. So, when a player is picking reeds indiscriminately, he is trying to find the most effective and balanced vibrating reed "valve" that works in conjunction with his system (the mouthpiece, ligature, the instrument's bore) and personal lung capacity. As you can imagine, this is very much the luck of the draw, and a difficult thing to do often resulting in frustration. For that reason, it is imperative that players do three things that ensure great playing reeds and that lengthen their lifetimes. They need to *flatten*, *balance*, and *stabilize* their reeds.

Knowing that these three processes were so important. I designed the ReedGeek Universal Tool as a multi-functional tool that is simple, effective and non-invasive; perfect for flattening, profiling and maintaining for the life of the reed. Because of these distinct advantages my explanations will be in terms of using the ReedGeek to better all reeds.

### FLATTENING

**Having the back of a reed flat is crucial for optimal reed performance**, whether fresh out of the box or used. A warped reed can be attributed to 90% of all reed problems. If a player were to do anything to help his plight it would be to play on reeds with true tables.

A flat reed is one that is completely sealing against the mouthpiece table and side rails. When the reed is bowed, its natural vibration is curtailed. With only the reed's belly or sides touching the mouthpiece table air escapes from the necessary vacuum and the critical role of the reed providing compression to your system is flawed and inconsistencies in the reed's performance will continually be experienced.

To flatten a reed lay the ReedGeek on any one of its completely true edges perpendicular to the reed and let the weight of the tool find the high spots as it's being moved



## Serious Reed Performance

The most simple and effective tool of its kind.



across the length of the reed table. Make sure to do this “flattening” using consistent pressure, proceeding lightly to and off the reed’s tip. Especially on new reeds that haven’t seen water, the flattening process starts sealing the pores so when they do take in moisture it will be in a more uniform way.

Also, re-flattening used or “blown out” reeds will very often restore their vibrancy and resiliency as they are most likely suffering severe warpage. Repeating the flattening procedure on these used reeds, but with more gusto, will often resurrect them. You might even give them a thorough soaking and then re-plane them with the ReedGeek. It’s okay to remove some cane from the table, there’s plenty there.



sensors and low and behold you start hearing and playing music, many times almost without thought. Again, in this relaxed state, practice becomes very rewarding and productive. We’ve all had those inspiring moments when we’ve experienced “that” reed, tried “that” horn and mouthpiece combination and felt happy, even giddy, like a child at the gates of an amusement park. Unfortunately, this euphoria is too often fleeting. And we, as players, chase this feeling with every box of reeds we open. Since there’s only a very slim chance that an untouched reed will be completely in balance with ones specific mouthpiece, horn, ligature and playing style, we must have a bit of knowledge on tailoring and maintaining our reeds throughout their lifetime to achieve better reed performance.

### BALANCING

**So, why do we hear so much about the importance of a balanced reed?** Can’t we just pull a reed out of a box and play it? Yes, but again, finding one that is tailored for yourself and your equipment is difficult and many will be deemed throw aways. By far the two biggest problems with single reeds (both new and used) are ones that can’t necessarily be blamed on the manufacturers (who have the almost impossible task of providing a basic pre-cut reed for all the various mouthpieces on the market); warpage of the reed table (previously discussed), and imbalances at the tip and along the side rails and heart, due to differing cane densities and cut. It is for the player to find the commercial reed most compatible with their system, and then profile and balance it to your liking.

When a reed is balanced and vibrating in harmony with your mouthpiece and your instrument’s bore, your sound and note voicing become very natural. Physically, your whole body relaxes which results in deep breathing. When you, as a player, are not preoccupied with the physical execution of sound and notes your body is freed to tune into its auditory

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With the reed flat and sealing on the mouthpiece table, accurate reed adjustment can commence. Identifying where your facing actually starts (the pivot point where the curvature begins) is vital as this is where the reed undergoes a tremendous amount of vibrational stress. As a result, these upper perimeters of the reed are the most important and responsive areas to adjustment. The goal is to make the reed ultra-flexible, efficient and resonant while maintaining adequate resistance and support as it vibrates along your mouthpiece facing curve.

Start by lightly flexing the reed with your fingertips and visually inspect it to see if one rail is heavier (denser) than the other. If so, this will need to be lightly planed down. If using the ReedGeek this can be accomplished with one of the scraper blades on either side of the tool or by any of the edges on the body of the ‘Geek being lightly dragged the length of the rail.

Similarly, the corners of the reed (the “ears”) can be addressed. Again, very lightly bend the right and left “ear” with your forefingers to determine symmetry. These need to

be balanced, much like the wings of an airplane, for consistent air-flow, sound resonance and natural playability. If adjusting with the ReedGeek this area can be blended with the radius end of the tool, like using a pencil eraser. To continue to define the heart and remove any unwanted dense cane if the reed is still stiff, blend with the 'Geek's radius to remove cane on the left and right hand side of the upper heart about ¼ inch down on both sides from the tip. When all adjustments have been made the outer perimeter of the reed should be smoothly blended toward the spine (heart), and this area should be in the shape of an inverted U or Christmas tree. Note: The more open your mouthpiece and the longer the facing the more elongated the Christmas tree shape should be because the reed has a longer palate on which to vibrate.

## STABILITY

**I would like players to start treating reed adjustment and maintenance as a continual process.** One must periodically address the inconsistencies of an aging reed (check to ensure that the back is flat, that warpage hasn't occurred and re-profile where necessary), as fiber densities break down at different rates. I am also an advocate of keeping your reed and mouthpiece together after you have profiled to your liking. I akin this to the double reed system; once it is created and put together it stays together as a vibrating unit. So again, once the reed has been 'Geeked,' is on the mouthpiece, secured with your ligature of choice and is playing well, leave it together and keep it well hydrated and only change or adjust when you determine the reed is warping or starting to lose responsiveness.

Stability can also be achieved by making sure that reeds stay in an environment with some sort of constant humidity. There are a lot of products currently on the market to aid in this. Given that I live and do the majority of my playing in a very dry climate I have had great success keeping my reeds in a moist sub-environment. I use mason jars for humidity stability, cleaning often to avoid mold issues and re-checking for flatness

when they are selected as playable. Personally, I also have success flattening and profiling reeds straight out of the box and playing them more or less in a dry state. Although there can be wonderful ring and "balls" to the sound, it is usually short lived as the reed begins to absorb moisture (like a sponge) and heat and starts to de-stabilize. At this point the reed needs to be re-flattened and soaked and the stabilizing process needs to continue.

Using the methods described so far will result in extended playability and an increased overall feeling of satisfaction with one's reed collection. So, the next time you put a reed on your horn and it doesn't play don't think to yourself, "This reed is crap!" Instead, think, "How can I profile this reed to play well with my system?" And, start the checklist: flattening/sealing the pores, balancing, stability.

## MY MISSION

**I came to be a musician following a different path than most.** I was largely self-taught until my early twenties and always had an innate fascination with sound and the perspective that my horn should work as a system (much like my skis, snowboard, and skateboard equipment, as I

was heavily involved in these industries in my youth, and in fact, worked on the first snowboards in the days of the sport's infancy). I was naturally drawn to saxophonists who possessed an individual sound and concept in their playing and who, intuitively (or consciously), formed a unique woodwind acoustic system to develop their voice. Paul Desmond, David Sanborn, Pete Christlieb, Gerry Mulligan, Lenny Pickett, Johnny Hodges, Stanley Turrentine and Grover Washington, Jr. all inspired me. I was (and continue to be) struck by their concise, vocal like statements and tone.

Interestingly, over the years by delving deeply into reed profiling and mouthpiece and horn acoustics I've found it possible to profile and shape reeds to achieve similar tonal qualities of these and many great players without having to mimic their exact setups. During numerous experiments I've seen firsthand that via reed flexibility and shaping a wide spectrum of sound can be achieved. Hence, I've come to greatly respect the reed as an independent vibrating instrument unto itself. It can, with the right resiliency, density and shape (manipulated to a specific set of parameters), dictate its vibrational and tonal properties to both the mouthpiece and the horn. This area of sound is something I'm completely fascinated and humbled by and motivates me to continue to study. Especially when many great players tell me that they are often at the mercy of their reeds and are forced to take different directions in their improvisations etc., because they're limited by what they feel their reed can handle. It appears that most players suffer this at some point and are hearing more than their horn and reed setup can comfortably execute. I believe that this is something within our grasp to work on and that we, as players, should have control over our reeds to the extent that we can tailor them to a specific sound and musical situation. No one wants their voice and creative expression to be limited.

As the great clarinetist and author Carl Baermann wrote in the mid-1800s: "The tone is beautiful when it has a full, vibratory, metallic, clear sound, and retains its character in all ranges and shadings; when it does not lose its beauty, nor have a sharp, cutting effect in fortissimo, and is so susceptible to expression and modulation as to be applicable with ease to the most delicate passages, and will allow passing with perfect smoothness from one tone to another. But, even if the tone possesses all these properties, yet lacks that peculiar property, 'the soul,' all else will be of no avail. As in the case of every other instrument played with a mouthpiece of cane, everything depends upon a good reed. In fact, the greater the artist, the more keenly he feels his dependence on the excellence of his reed." - Carl Baermann, circa 1855-1865.

I find inspiration in Carl's words and deem them applicable to all woodwind instruments, even 150 years later. In them I also find motivation for my pursuit to resurrect the study and maintenance of reeds. §