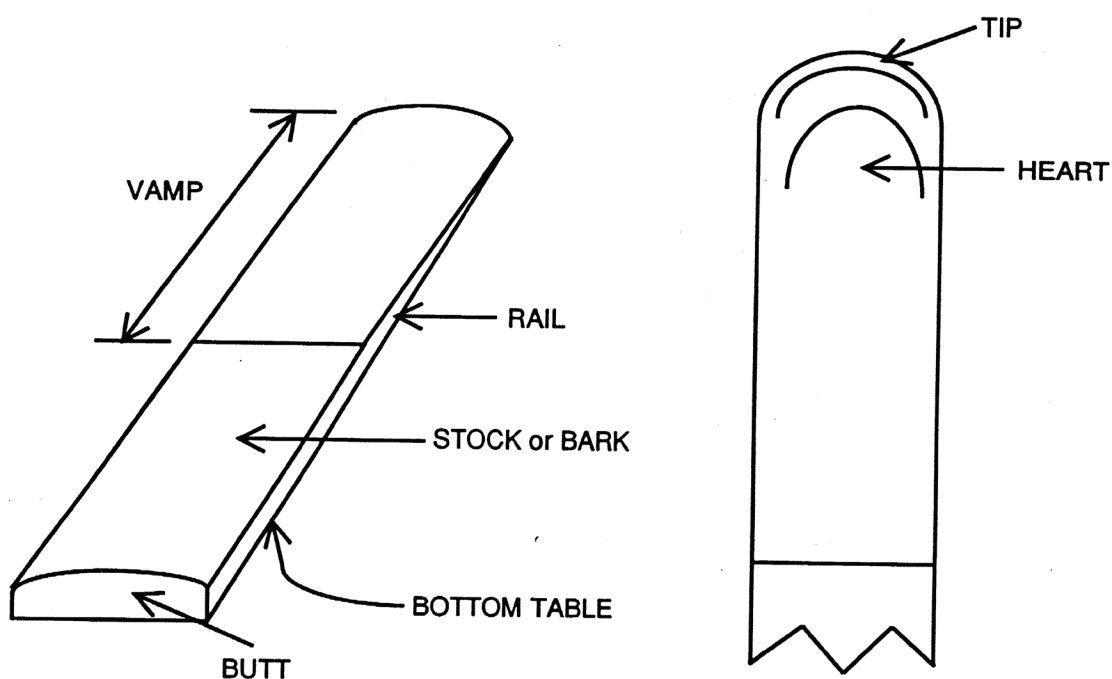


# An Introduction to CLARINET REED ADJUSTMENT

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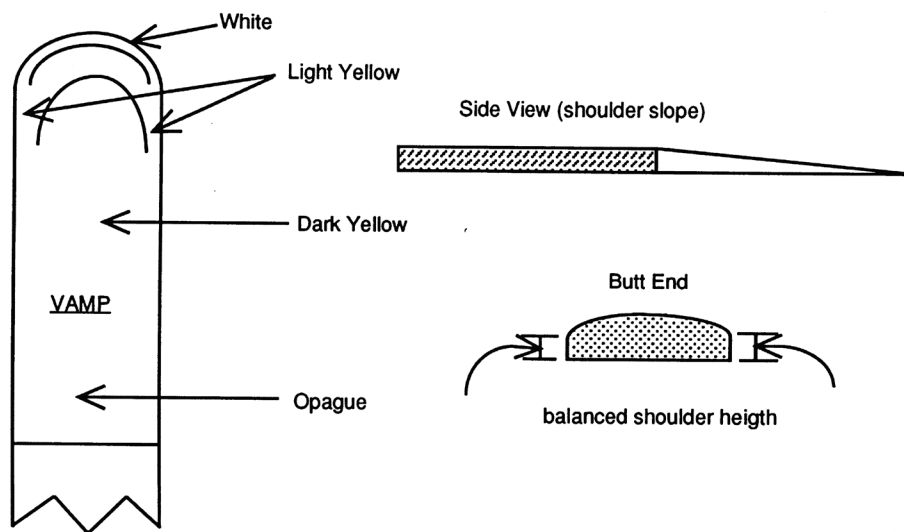
## REED ADJUSTMENT

Many of the problems in clarinet performance relate not to the physical deficiencies of the player but to the quality and condition of the reed. This small piece of wood strongly influences basic tone quality, tone color, evenness of response and articulation, and intonation. Although there are many factors in the inner structure of the reed cane that make any “guarantees” of success in reed selection impossible, the following visual characteristics are desirable in a new reed:

- uniform yellow color—i.e., without a green tinge in the vamp (brown splotches in the bark are not indicative of either good or bad quality);
- balanced shading in the reed vamp when held up to the light;
- straight grain from butt to tip as observed along the bottom table of the reed as it held up to the light;
- bottom table free of any warpage when held flat on a piece of glass or Plexiglas;
- balanced height of butt end;
- even shoulder slope to tip;
- reed tip free of chips or splits.

The following diagram shows the visual characteristics of a single reed:

**DIAGRAM 1**  
Visual Reed Characteristics



It goes without saying that every reed cannot be made to play. However, the better the initial visual qualities stated above, the better the potential for a good, adjusted reed. A minimal amount of equipment is needed for reed adjustment:

glass or Plexiglas plaque (approximate size)  
4" x 5/8" x 3/16" (clarinet)  
4" x 3/4" x 3/16" (bass clarinet)

glass or Plexiglas work area  
6" x 4" X 1/4" (approximate)

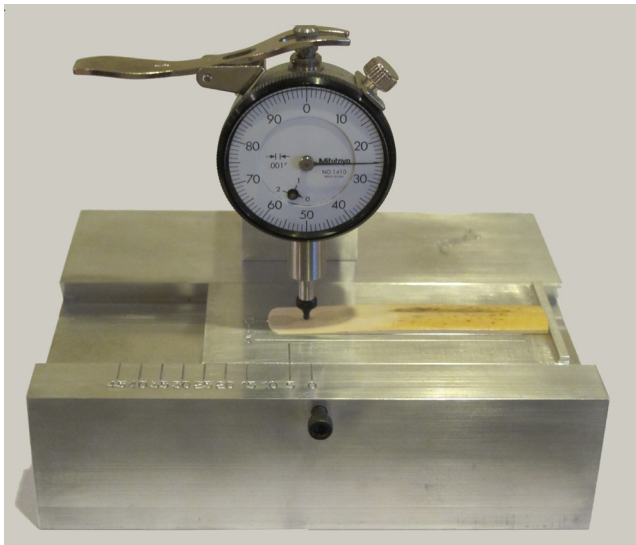
Wet-or-dry sandpaper, grades 400 and/or 600

Dutch rush and/or reed scraping knife

Reed clipper

Depending on the degree of accuracy you want in balancing your reeds, an additional tool that is valuable is a device to measure the thickness at various points on the vamp. The ReedGauge from Jeanné, Inc. is what I use. With this device, I can compare the thickness of the cane from side to side as well as the middle "hump." I also like to check the thickness of the highest part of the tip. After measuring several points across the "white" part of the tip and subtracting the lowest from the highest number, the closer to zero, the better. A large difference in thickness in this part of the tip will produce an uneven responding reed and a brighter tone.

Although you will need to find what dimensions work best for your particular needs and mouthpiece, the actual thickness measurements of the vamp will not always be the same for every reed. This is due to the vascular bundle cell structure of cane which will always vary between different pieces of tube.



Jeanné ReedGauge



Cordier reed clipper



Reed scraping knife

New reeds should be played for brief periods for two to three days before commencing regular, extended use. During this break-in period, the wood will undergo small but crucial changes in response. The following adjustments are to be made, if needed, during or even before these first playings.

One of the most important factors in reed response is flatness of the bottom table. A reed with warpage on the bottom table will respond in a stiff but uneven manner. While holding the reed on the glass plaque, check to see if it rocks to the sides or to the ends. If warpage is found, the reed bottom must be lightly sanded in a circular motion against the 400 or 600 grade sandpaper. The reed should be held flat with three fingers in the sanding process—one at each end of the reed and one in the middle. (Do not press too hard on the tip; place the finger slightly in from the tip.)

A second check for flatness can be accomplished by rubbing the reed bottom table against the reverse, ungraded side of the sandpaper. This will produce a smooth, polished look to the table when held at an angle to a light. If any areas seem dull as the light reflects off the reed bottom, the reed is not perfectly flat and the above sanding process must be repeated. (Note: Too much sanding will eventually make the reed so thin that it will not play at all.)

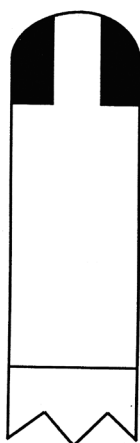
A final check for flatness involves attaching the reed in its normal playing position on the mouthpiece, closing the bottom end of the mouthpiece with the palm of the hand, and sucking the air from the mouthpiece chamber. If the reed momentarily remains closed against the mouthpiece tip, a near-vacuum has been created, implying the reed is holding flat against the mouthpiece facing. However, if this does not occur, the above sanding process should be repeated.

The general resistance of a reed is a result of two different factors: air resistance and embouchure resistance. The first may be checked by softly playing the left hand “open” g fingering, without using a tongue articulation at the start. If a “hissing” sound of the air is heard briefly before the tone starts, the air resistance is too great and the tip area should be lightly sanded. To check the resistance to the embouchure, play the second register f-sharp and attempt to “pinch” the reed closed. If this requires too much effort (as compared to a “good” reed), lightly scrape the reed where it comes in contact with the lower lip.

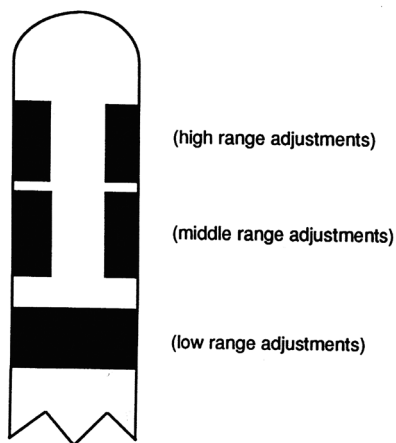
To do a simple, aural check of the balance or symmetry of the tip and upper heart area, the reed should be moved slightly off-center to each side of the mouthpiece. The response of these off-center positions while playing “open” g should be compared. (The side of the reed being heard is that which is outside the mouthpiece.) A more accurate measurement requires a device such as the ReedGauge. If one side is found to be more resistant, this side should be lightly scraped in the area shown in Diagram 2.

After several playings, response comparisons should be made between ranges using the three octaves of g: lowest g, open g, and second register g. If any note seems more resistant than the others, the reed should be scraped or sanded in the appropriate areas as shown below in Diagram 3. In many commercial reeds, the heart is too thin; hence, this middle part of the reed vamp should be avoided at first in the sanding process. If after sanding the appropriate side area, the register remains too stiff, the vamp center may be sanded to improve response.

**DIAGRAM 2**  
Reed Tip Adjustments



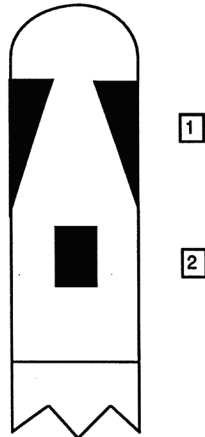
**DIAGRAM 3**  
Range Response Comparisons



Many commercial reeds have not had enough bark removed from the stock area. This will cause an uneven right hand, low register. The length of the window opening of the mouthpiece must equal the length of the reed vamp. Too short a vamp may be corrected by gently scraping the bark with a knife and then sanding this area to blend into the remainder of the vamp.

If the tone is too bright, the shoulder area, marked “1” in the next diagram, should be sanded or scraped. If the reed blank is not too thin—i.e., less than 2.8 millimeters—scraping the reed center below the point where the player’s lip contacts the reed, marked “2” in Diagram 4, will also darken the tone. This is not a common adjustment of commercial reeds due to the all too frequent thinness of the reed blanks. Conversely, if the tone quality is too hollow and dull, the areas marked in Diagram 5 should be sanded or scraped.

**DIAGRAM 4**  
Adjustments to Darken Tone



**DIAGRAM 5**  
Adjustments to Brighten Tone

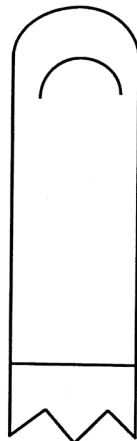


The preceding suggestions all apply to reeds with too much or uneven resistance. One of the most difficult problems is when a reed plays too weak or has too thin a heart for proper spring action. A slight change in the resistance may be accomplished by clipping a small amount off the tip. However, if the heart needs rebuilding, the following steps must be followed:

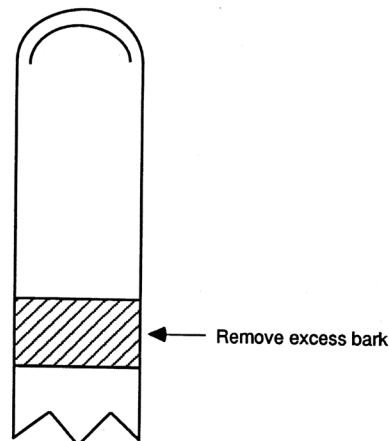
- 1) Clip a small amount off the tip and test the reed. Repeat this process until the reed plays slightly too stiff.
- 2) Scrape the bark so the vamp length matches the mouthpiece window opening. Sand to blend the back vamp.
- 3) Test the reed to see if too much resistance is found. If needed, lightly sand the tip to improve response and to darken tone quality.

**DIAGRAM 6**  
Heart Rebuilding

Example #1  
(Heart too low)



Example #2  
(After clipping)



The suggestions in this brief guide are only a beginning to your reed adjustments. It is not meant as a comprehensive “solution” for reed problems. However, the more you experiment and discover how the reed works, the more confident and successful you will become.

#### **CARE AND STORAGE OF CLARINET REEDS**

The playing life of a commercial reed can vary from one or two days to approximately two weeks. This can be slightly extended if reeds are used in rotation rather than playing a single reed continuously day after day. In addition, reeds should be stored on a flat, hard surface such as glass, Plexiglas, or metal so to prevent warpage as much as possible. Commercial cases are available that press the reed flat and protect the tip. Storage cases can also be made using a piece of glass or Plexiglas and a wide rubber band to secure the reeds. This is then wrapped in cloth or placed in a pouch for protective cushioning. Players should have a minimum of three to four good reeds available at all times.