

Careful Cuts in Clarinet Reeds

by Charles West

Many clarinetists tweak deteriorating store-bought reeds in an attempt to keep them in top condition, but hand-cut reeds can be made to be reliable throughout the life of the reed. I started making clarinet reeds many years ago and have learned the hard way what steps and choices work better than others.

I began by trying to make every reed exactly the same and used a micrometer to measure the thickness from end to end. However, I discovered that among reeds with the same measurements there were both excellent and dismal reeds. This led to the realization that the cane was the critical factor. If one good reed comes from a piece of cane, the others made from that cane will also be good. Now I make one reed out of each tube, throw away the tubes that produce a poor reed, and work with only the cane that produced a good first reed.

Cane fibers are denser at the edge near the bark of the tube and less dense near the center. Reeds made from thin blanks will have a harder tip than those from a thick blank because the tip of the thin reed came from cane that was closer to the bark and has denser fibers. A clarinet reed made from a blank that is thicker than 0.140" is likely to whistle or squeak, while those made from



blanks that are 0.112"-0.120" produce the best reeds for the clarinet mouthpiece I use. However, thinner or thicker blanks may work better on other mouthpieces, and determining the best range of thicknesses is a matter of trial and error.

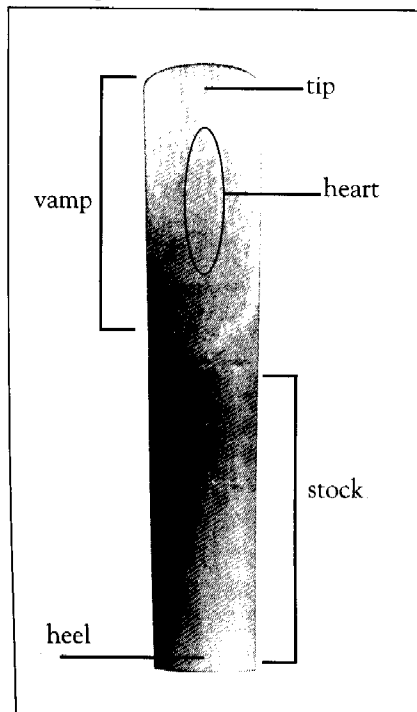
The cut part of a reed, called the vamp, should be exactly as long as the window of the mouthpiece. A reed that fits the mouthpiece well should be used to produce others that are identical to it. There are machines that cut a reed blank to match the shape of a finished reed in much the same way that keys are duplicated. The reed blank should be of the same thickness as the good sample or the copy will not match the original. A thicker blank will have a longer vamp than the original and be difficult to play with a centered sound. A thin blank will have a shorter vamp that is easy to focus but difficult to play in the low register.

The ideal is for a reed to be exactly as wide as the mouthpiece facing as it curves up to the tip. A reed that is wider than the mouthpiece will sound unfocused. Any excess cane can be removed by sanding the reed with fine sandpaper placed on a piece of glass. This may darken the sound, but if too much cane is sanded off the tone will become too thin and bright.

Another important variable is the width at the heel or back end, which affects the focus of the tone. A reed is easy to focus if its shape matches the table or bottom of the mouthpiece. Mouthpiece tables are tapered toward the back, and it may be necessary to sand the sides of the stock (the uncut part of the reed) for the heel of the reed to match the table. By sanding the side of the uncut part of the reed, also called the stock, with an equal number of strokes on the sandpaper, the reed becomes more V-shaped and easier to focus.

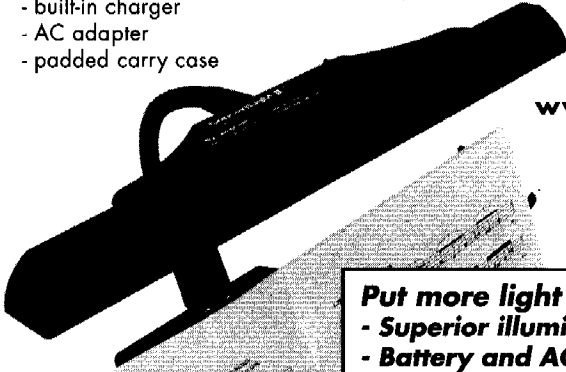
Players frequently comment that a reed has become soft when in fact the strength of the cane has not changed. The true cause is that the flat part of the reed has warped inward where the vamp begins. This effectively decreases the tip opening, and because the reed does not travel as far per vibration the resistance is reduced. A common solution is to clip off a small piece of the tip, which makes the warped reed more resistant but also brightens the sound and makes the altissimo register difficult to play. If the tip is clipped, it must also be thinned to restore the beauty and darkness of the tone.

The tip of a clarinet reed should be .0035"-.005" at the center. A reed with a tip that is thicker than .005" will



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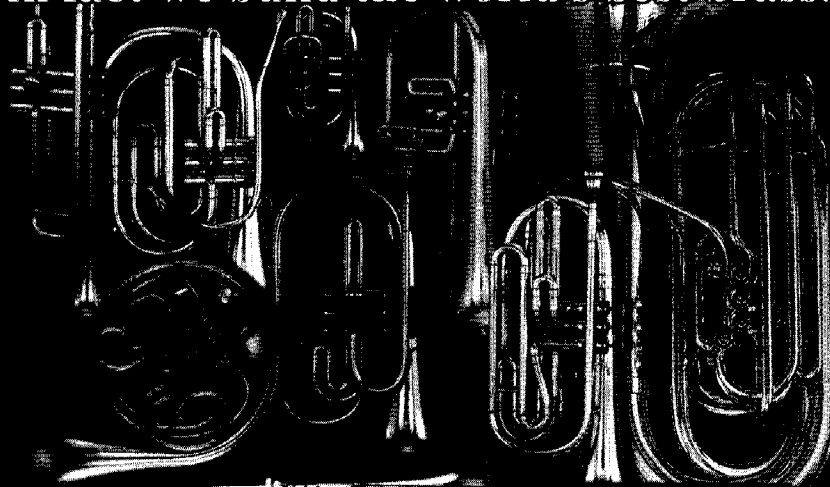


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respond slowly in the altissimo register although other ranges may work well. If the reed tip is thinner than .0035" it will probably squeak. Experienced reedmakers can gauge reed thickness by the sound of the clipper as it cuts the tip. Clipping a tip that is thinner than .0035" makes almost no noise, and clipping a tip thicker than .005" produces a loud snap.

I prefer reeds with a thin tip, especially at the center, because they produce a dark, colorful sound if the heart is relatively thick. The relationship between heart and tip alters the brightness of the tone, while a thick tip and a thick heart produce a dark sound. Clarinetists are often surprised to discover that thinning the tip actually darkens the tone.

The relationship between the extreme corners and the thinnest point in the center of the tip is also critical. The center of the tip should be perfectly flat for the last several millimeters so when the reed is trimmed the corners will still be thicker than the center. If the corners are thinner than the center, the reed will become dull and lifeless.

The best way to cure the reed blank is to soak it repeatedly, usually with saliva, followed by drying and sanding until the blank stays flat between soakings. Only then is the blank ready to be made into a reed. Unfortunately, humidity changes will warp any blank or finished reed, whether cured or



Charles West is professor of clarinet and coordinator of winds and percussion at Virginia Commonwealth University in Richmond. He is past president of the International Clarinet Association and studied with Himie Voxman, Leon Russianoff, and Robert Marcellus

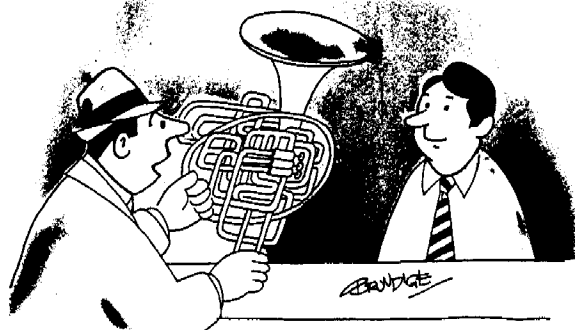


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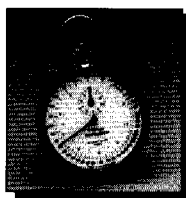
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not. I once brought 20 well-cured blanks to a summer orchestra festival in a dry climate and kept them in a stable, humid container. They still became convex from the change in humidity. The new blanks I made at the festival became concave when I brought them to Virginia.

Reeds become convex if dried too quickly and concave if dried too slowly. An easy test for warping is to place a drop of water on a piece of glass and press the reed over the drop. If only the sides of the reed touch the glass, water will be trapped under the center, and the reed is concave. If the sides of the reed do not touch the glass and it is possible to rock the reed back and forth on the glass, the reed is convex.

The only way to prevent warping in a different season or climate is to acclimate and sand the blanks before cutting the reeds or by controlling the humidity where the reeds are kept. It is certainly worth whatever effort it takes to prevent warping because no amount of sanding the back of a warped reed will ever completely flatten it and can also cause the sides to be much thinner than the center, which makes the reed useless.

A common practice to prevent warping is to attach a reed to a flat piece of plastic or glass with a rubber band, but in fact this makes reeds warp more severely. When the back of a wet reed is stuck to a nonporous surface, the thin edges of the reed dry out first and trap water beneath the center of the reed, which warps toward the glass while the edges curl up in a convex shape. The best way to prevent convex or concave warping is to control the humidity.

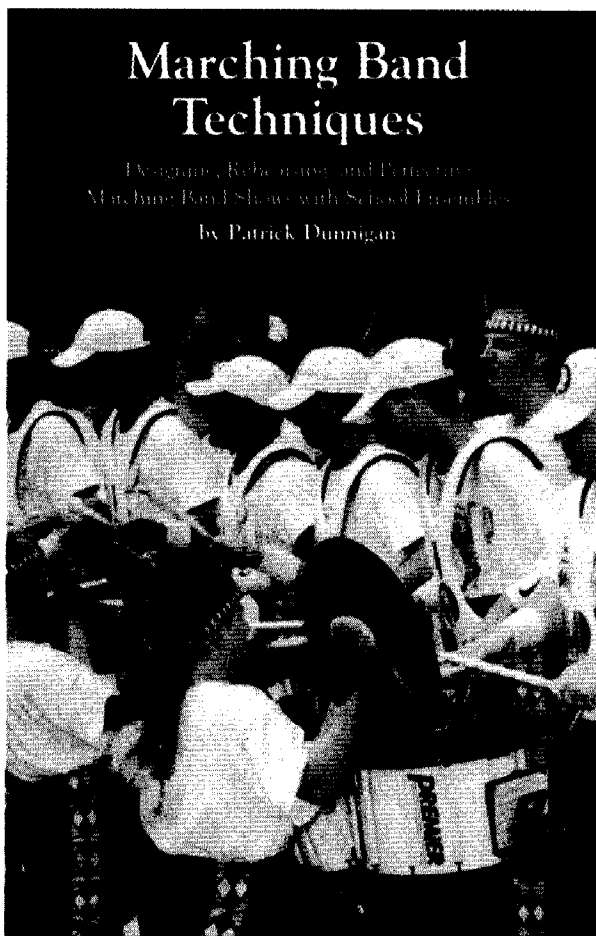
Occasionally the tip of a reed will become wavy, especially on larger reeds. This happens if a reed has dried completely and then becomes wet again; but the waviness merely indicates that the reed has been soaked insufficiently. It is nothing to be concerned about, and the tip will straighten out after soaking and playing.

When a reed and a mouthpiece facing match perfectly, the reed is said to be balanced. Usually the cane on a balanced reed will be evenly thick on both sides of the heart, but occasionally the best sound results when one side of the reed is thinner than the other.

To test the balance of a reed, play an open G4 and roll the mouthpiece slightly on its axis. If the sound is more open with the mouthpiece slightly off center, the side of the reed tilted down is the resistant side. It is also possible to check the balance by placing the reed

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slightly off center on the mouthpiece. If the sound is open with the reed sticking out to one side, the side that does not stick out is too resistant. The usual solution is to remove some wood from where the stock and vamp meet to halfway to the tip of the resistant side of the vamp to balance a reed.

Although it is time-consuming, it is much better to make a good clarinet reed than to adjust a store-bought one to the point that it plays well consistently. The idea of reed making frightens many clarinetists, but knowledge of what makes some reeds sound good and others sound poor can pay dividends the night of a performance. □

Zildjian Celebration

On May 9 the Avedis Zildjian Cymbal and Drumstick Company celebrated its 380th year. Guests included Elvin Jones, Joey Kramer, Terri Lynne Carrington, and Cindy Blackman. Speakers included several Massachusetts and United States congressmen, Craigie, Debbie, and Rab Zildjian, and Elvin Jones. Dun and Bradstreet declared Zildjian to be the oldest continually-owned family business in the United States. (www.zildjian.com)

James Grine Retirement Celebration

Alumnae and community members surprised James Grine by creating an endowed scholarship in his honor. It was announced at the conclusion of Grine's final faculty recital in March. His mentor during graduate school, Walfrid Kujala, attended the event.

New Headjoint Company

The Welans Headjoint of Boston has begun to produce a silver headjoint designed by David Welans and will be introduced at the August N.F.A. Convention.

Bruce Miller Premiere

John Barcellona and the university orchestra gave the premiere of *Spirits of the Mask*, a flute concerto by Bruce Edward Miller on April 3 at California State University-Long Beach. The work was commissioned by the Brannen-Cooper Fund and dedicated to Barcellona.

New Flute Competition

The New England String Ensemble held its first flute competition for players 18 and under, and Nicholas Johnson of Hartford, Connecticut won first place. The panel of judges included Doriot Anthony Dwyer and Fenwick Smich.