

## Reed-Making Handout

**Disclaimer:** I don't claim that this is the only way to make a reed. It is the system that has given me the best results, but I fully acknowledge that there are many great musicians who do not subscribe to these concepts.

### *The Four Systems*

- There are four interconnected systems to effect change in a reed.
  - Shape
    - A wider shape yields flatter, darker reeds that tend to favor the low register more; a narrower shape yields sharper, brighter reeds that tend to favor the tenor and high registers more.
    - The shape is intimately connected to wire placement.
  - Wires
    - Assuming a constant blade length, the closer the first wire is placed to the foldover point, the wider the blade will be; the further the first wire is placed from the foldover point, the narrower the blade will be.
    - The second wire acts as a fulcrum between the back of the reed (the bevel) and the tip. In order to be effective, it must be placed at or near the narrowest point in the shape.
    - The second wire must be rounder than the first wire for acoustical reasons: the bore must go gradually from round (through the bocal) to flat enough to be manipulated by the embouchure (the tip of the reed).
  - Bevel
    - The purpose of the bevel is to open the tip.
      - The closer the bevel is to the butt end, the more pronounced the effect.
        - A bevel that is very close to the butt end will open the tip substantially. The first wire will need to be flattened more to optimize the tip opening.
        - A bevel that is very long will have a less-pronounced effect, so the tip will have to be opened at the first wire, resulting in a rounder tube.
  - Scrape
    - The reed should taper from back to front and from center to sides.
    - Every piece of cane is different. By tailoring the scrape to the needs of each individual piece of cane, we bring out a reed's best qualities and mitigate its limitations.
- The effectiveness of these systems is based on the quality of the cane.
  - A good piece of cane is one that responds to the work that is done to it and doesn't change back.
  - Ideally, the quality of the cane should be the *only* variable. All steps in the process should be executed as consistently as possible, leaving only the quality of the cane to determine a reed's success.
    - This is easiest in the blank-making process, which must be as consistent as possible.
    - This is much more difficult in the finishing process, because it requires *consistency in reacting to the unique qualities of each piece of cane*.

## ***Finishing the Reed***

### *Goals*

- I make reeds with the goal of intonation and response. **This does not mean sound is unimportant.** Sound is of absolutely vital importance, but sound is not an *objective* criterion. Intonation and response are, and by making a reed for those attributes, the sound that one prefers is built *into* the reed.
  - Put another way, every reed I have ever made with a sound I disliked has also had issues that could be described in terms of intonation and response. By addressing those, the sound was also improved.

### *Wires/Tip Opening*

- The wires should be one of the first parts of the reed we adjust when trying to effect change, since they are the only things that can be changed back if we go too far.
  - This is not the case when the scrape is very rough - for example, when the tapers to the corners of the tip are insufficiently refined, no amount of wire adjustment can compensate.
- The tip opening is the only thing about a reed that can be perfect, so it must be exactly where the player prefers.
  - This can't be measured visually, since minute adjustments that can't be seen can still yield significant changes in the playability of a reed.

### *Scraping*

- The reed should taper from back to front and from center to sides.
  - This means the corners of the tip will be the thinnest points on the reed. The "thumbnail" naturally emerges from the tapers to these points.
- Every piece of cane is different. By tailoring the scrape to the needs of each individual piece of cane, we bring out a reed's best qualities and mitigate its limitations.
- Scraping nearer to the tip one yields more immediate effect.
  - For this reason, I tend to move to the back of my reeds later than some and leave the back relatively heavy.
  - However, this *must* be balanced with the understanding that there must *always* be a taper from the back to front and center to sides, including at the tip, so there is a limit to how much cane one can remove near the tip.
- Scraping near the center weakens, or flattens, the reed.
  - If one thinks of each blade as an arch, removing material near the center weakens the arch, whereas removing material on the sides strengthens the center relative to the sides.

### *Success/Failure*

- **Don't think of the point at which you throw away a reed away as a point of failure. Think of it as a point of release, because that reed is now out of your life forever.**

### My Measurements

<i>Gouge</i>	1.30-1.35 mm
<i>Profile</i>	.90-.95 mm at the back (just in front of the "bump" that most profilers leave) .58-.62 mm at $\frac{5}{16}$ " back from the tip (on my profile, this is 14 mm from the foldover point)
<i>Shape</i>	Herzberg
<i>Bevel</i>	$\frac{3}{8}$ " from butt end
<i>First Wire</i>	$1\frac{5}{16}$ " from foldover point (I actually put it at $1\frac{11}{32}$ ", yielding a slightly narrower shape)
<i>Second Wire</i>	$\frac{1}{4}$ " from bottom of the first wire to top of the second wire
<i>Third Wire</i>	$\frac{3}{16}$ " from butt end
<i>Blade Length</i>	28 mm from top of first wire