

# Making Bassoon Reeds

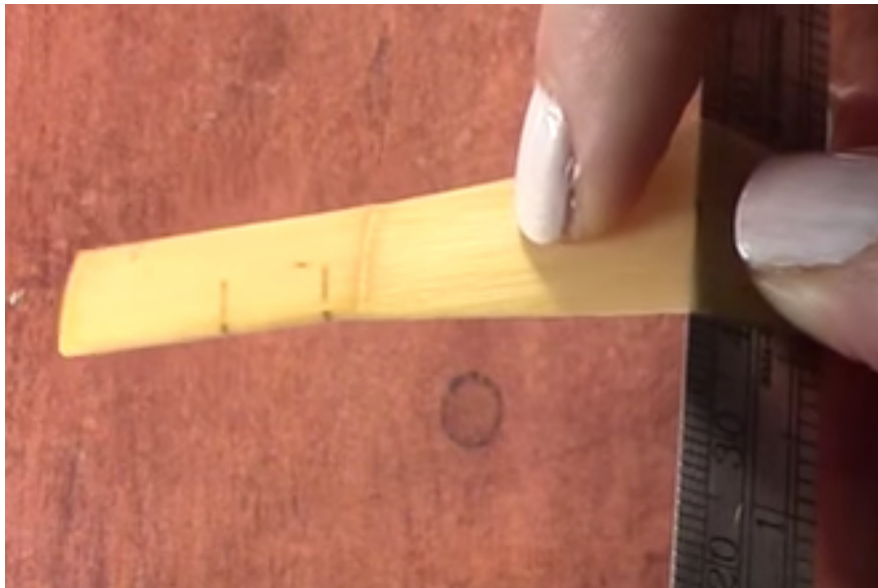
(Eryn Oft Style, using Rieger 1A shape GSP cane)

## Hand-Gouge, Fold, and Bevel:

1. Soak cane and twine for 1 hour.



2. Wrap 400-grit wet/dry sandpaper around a wine cork and sand inside of cane just to remove any fibers.
3. Mark the center of the blades where you will fold. Fold over using a thin straight edge.



4. Mark wire locations with a pencil:
  - First wire: 25 mm from base
  - Second: 9 mm down from first
  - Third, 6 mm from base



5. (Note: Other reed-makers may bevel with sandpaper while the reed is unfolded. Eryn Oft uses a razor blade.) Go ahead and put on a 1st wire just to hold the reed closed. Open the bottom of the tube slightly and stick nail pin inside. Starting at the 2nd wire marking, bevel the inner corner edge so that when the cane is folded the tube edges will seal. Start parallel with the razor blade, then increase the removal slightly (should be a small triangle piece). Release the wire.



This is what beveled cane looks like:

You can also bevel unfolded:



### Scoring:

1. Cross-hatch the bottom of the cane with a razor blade while supporting it with a wine cork, just enough to rough it up. This will help darken sound and prevent cracks from going into the blades.



2. Score the cane three times on each side of the center with a razor blade. Stick the corner all the way through into the wine cork, then rock down. Do not make a score cut in the center of the cane, or the crack might travel up into the blades. (Note: many other reed-makers do not cut all the way through)



### **Wrapping the Reed:**

1. Put on first wire, double wrapped.
2. Twine Wrapping: Starting at the bottom, wrap some dampened cotton twine up the reed. Do not pull too tightly and make sure the blades do not slip. After tying off, put the whole thing in water.



3. Wax the mandrel tip. When done, slowly insert it into the bottom of the reed. Check that the scoring went through, and don't twist as you go in. Go until you get to the marking on the mandrel (on Fox mandrels this is 44 mm from the tip – use local diameter as a guide).
4. Unwrap just the bottom twine and add third wire, triple wrapped, facing same direction as 1st.
5. Put on the 2nd wire on, double wrapped, facing the opposite direction, about a 1/4 inch from the 3rd wire (but this will not be the final location).
6. Squinch the tube around the mandrel with the reed pliers, both under and above the 3rd wire. Rewrap the bottom of the reed.





7. Let reed dry on mandrel with twine for 48-72 hours.

### **Collar:**

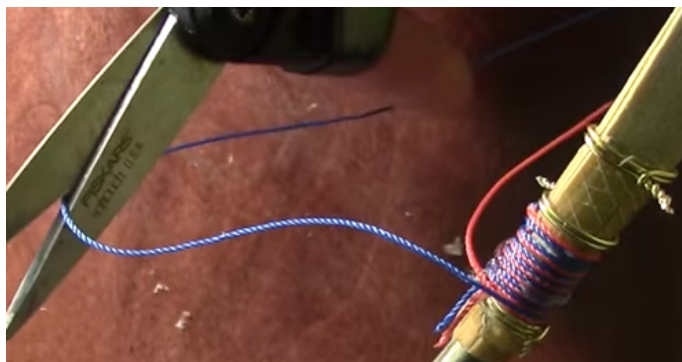
1. Unwrap. Tube will have shrunk, so tighten wires and place in correct spots.
2. Squinch tube.
3. While the reed is still dry, mark the collar (just above the 1st wire). Using a razor blade, rock to score along the line, then scrape down to the scored line from above (4-ish mm scrapes), then sand to get smooth.



4. Mark the tip length by measuring from collar 29 mm.

### **Turban Binding:**

1. Put on Duco cement from 2nd wire to base.
2. Using 1 or 2 threads, make a slip knot, place below 2nd wire and start wrapping downward.



3. When you get to the 3rd wire, clip one color and continue wrapping above and below the 3rd wire to create the turban.
4. Tie a slip knot above the turban, cut leaving a short tail, and put on a thin layer of duco cement with your finger.

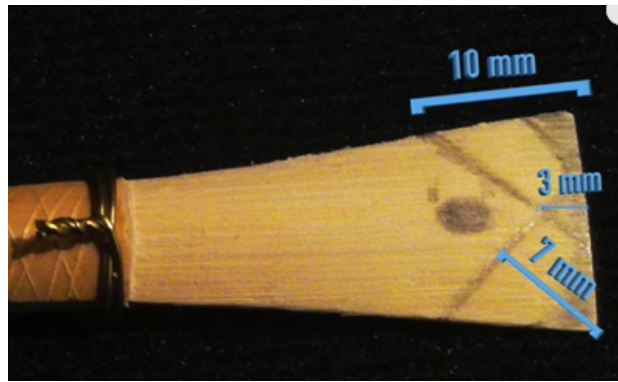


5. Replace the 1st and 2nd wires. The 2<sup>nd</sup> wire has probably gotten glue on it, and the 1<sup>st</sup> may have developed tiny spaces between it and the cane during the forming process.
6. Other reed-makers may bind reeds with clear nail polish, wax, hot glue or heat shrinking bands.

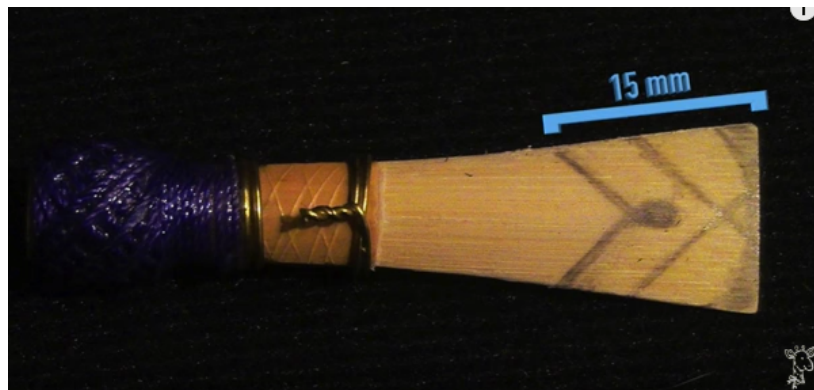
### **Clipping Reed Open and Scraping:**

1. Soak reed 5 minutes.
2. Clip reed open (29 mm blade) using a reed cutter or reed-clipping pliers.
3. Go ahead and mark the “heart” of the reed. It is in a round area between 6 and 9 mm from the tip.
4. Scrape 1 “Crescent Moon”
  - a. Insert reed plaque. Scrape just the edge of the tip (2 mm away from tip on side, 1 mm in center). Make sure to scrape all the way to the plaque.
  - b. Should be around 35 on reed dial
5. Scrape 2 “Three Triangles”
  - a. Similar to oboe reed scraping, draw two overlapping triangles. Scrape toward and past each corner of the reed.

b. Blend into first section.



6. Scrape 3 “The Chevron” – blend so there are no ledges between sections.



7. Micrometer measurements taken from the tip on Eryn’s reeds (can vary with type of cane and other reed-makers):

3mm:	.36mm
6mm:	.50mm
Heart:	.64mm (can be up to .68)
9mm:	.66mm
12mm:	.68mm
15mm:	.70mm
18mm:	.73mm
21mm:	.75mm
24mm:	.78mm
27mm:	.85mm

8. Crow the reed. The crow should offer high and low frequencies.

## Bassoon Reed Adjustment

(from the Crook and Staple online guide)

### Darkening the Sound:

1. The further apart the 1<sup>st</sup> two wires, the darker the reed (9mm)
2. Soak, then pinch both sides of the tip. Push them inward, then pull outward a few times, then pinch the sides of the reed all the way down to the collar.
3. Fold a piece of 400-grit sandpaper and insert like a plaque. Pinch reed shut and pull sandpaper out (can do up to 3 times).

### Wire Adjustment and Aperture:

1. Squeeze wires with pliers to change the aperture.
  - a. Squeezing wire 1 horizontally - opens center, lowers pitch, more resistant



- b. Squeezing wire 1 vertically – closes center, raises pitch, better response



- c. Squeezing wire 2 horizontally – closes sides of tip, helps high notes, raises pitch, mellows sound, improves stability of middle E and C#, adds resistance



- d. Squeezing wire 2 vertically – opens sides of tip, lowers pitch, helps response, brightens tone, increases projection, helps low notes





## Wire Tightness:

1. The 1<sup>st</sup> Wire
  - a. This wire should, as a starting point be loose enough that you can see it move slightly when you press your finger nail against it but not so loose that you can easily move the wire up and down the reed shaft
  - b. Loosening this wire will allow more vibration and give the crow lower tones.
  - c. Tightening will dampen the reeds vibrations and give the crow higher tones.
2. The 2<sup>nd</sup> Wire
  - a. This wire should be so tight it cannot be moved.
  - b. Tightening will increase pitch stability of the reed.

## Bassoon Scraping Solutions:

The general effects of scraping the following areas are:

- A. Freer and flatter low register
- B. Softer reed
- C. Flatter low register
- D. Easier tonguing and easier *ppp* in high register
- E. Less resistant low register and overall flatter
- F. More freedom and flexibility BUT weaker sound and stability
- G. Makes sound brighter, more flexibility and easier tonguing

