

[Richard & Anita Evans](#)

Northumbrian Pipes and Scottish Smallpipes, Border Pipes

## Making chanter reeds for bellows - blown smallpipes

The chanter reeds in all our Scottish Smallpipes are the same size, and made in the same way as those for the Northumbrian Smallpipes.

My notes were originally written to accompany an informal demonstration of reed making, and were never intended to be a definitive workshop guide, though I have since included some extra details and photos. Most of the procedures follow an accepted standard. The drawings are representational and not necessarily to scale. While professional tools and machines are available, this guide is intended to show how reed making can be undertaken using the minimum of specialist equipment.

**Note added September 2011:** I have recently made changes to some of my techniques, especially with regard to fitting the slips to the staple. **Updates in highlighted text.**

Look upon this as a virtual tour through the eyes of one reed maker. I hope to give you some insight into the care and effort that goes into the making of each chanter reed. You may even feel inspired to have a go at making your own. At the very least, you will know that a good chanter reed is worth looking after!

### Tube Cane (*L. Arundo Donax*)

This can be obtained direct from the grower, a specialist company, or bought in small quantities from woodwind suppliers. Ask for bassoon cane. A kilo gives you quite a lot of pieces, about 180mm or so long by 25mm diameter. Its best to share between a few people if you don't make many reeds, as I find the quality of the cane can deteriorate in time. I store mine in a sealed plastic bag, though opinions on this (and many other things) differ widely!

If the tubes are long enough, cut into two pieces, each piece being 90 - 95mm in length. With shorter tubes you will have some waste. With the tube upright, split with a chisel into several pieces, each about 13mm wide.

***Please note that my personal preference is NOT to soak the cane at any stage.***

### Gouging by hand

Thin down each piece (hard side down) using a sharp gouge and a gouging block. Shave off a little of the excess (the pith) at a time and let the gouge follow the natural grain of the cane. Keep turning the piece round and looking at the ends, and hold it up to a strong light at intervals to ensure even gouging. The finished slip should be a minimum of about 0.6mm in thickness, and mine are usually nearer 0.75mm. Smooth off the inside of the gouged cane slip with a piece of fine abrasive paper wrapped around a short piece of dowel (broomshank will do).



Experiment if necessary with the diameter of the dowel to produce an even finish along the length and width of the slip.



This early stage is crucial to the quality of the reed, and needs a lot of practice.

Trim the edges of the cane slips so that they are 11mm wide, and make sure the edges are parallel and straight - use a piece of sand paper on a flat surface. Some sort of width gauge may save time.

Lightly sand the inner edges of the slip on a flat surface - this helps to make an airtight seal when the slip is later folded.

Supporting the slip on the dowel, mark and trim each end to a point, to a depth of 16mm. Use a craft knife with a very sharp blade, and rock the blade forward and back slightly as you press down to cut.

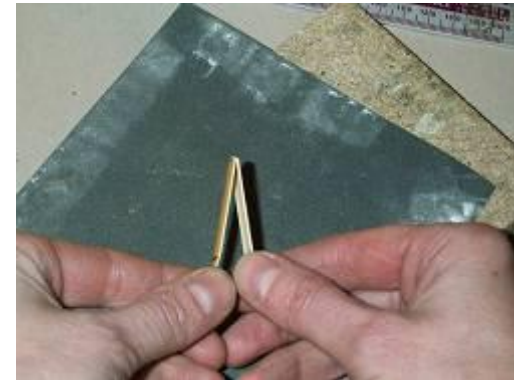
\*I now coat each end of the pointed slips on the inner surface with superglue and leave to dry, for reasons which will become apparent later\*  
**FOR ALTERNATIVE METHOD DESCRIBED LATER, DO NOT APPLY GLUE TO THE POINTS.**



Folding. \*(This doesn't show in the photo, but I now sand, or scrape off the hard shiny top layer on the middle section of the slip to make folding slightly easier)\*

**FOR ALTERNATIVE METHOD DESCRIBED LATER, LIGHTLY SCRAPE THE SHINY SURFACE OFF THE WHOLE LENGTH OF THE SLIP**

Using the dowel for support, mark the centre of the slip and press the knife blade down enough to score but not cut. This must be at right angles to the long edges of the slip. Gently but firmly fold the slip in half. The edges should meet and line up. If they don't, the reed won't work well. Try not to break the slip into two separate pieces, but use the fold as a hinge and keep the edges together with a few turns of thread (I wax it a little as well). Tie off firmly, but not so tight that it can't be moved later on.



### The staple

I buy 3/16", 28swg brass tube from a model shop, cut into 22.5mm lengths. Smooth off any ragged edges inside and out. Use a profiled nail tapped lightly into one end to start off the shaping, then squeeze with some pliers from the eye end to within 6mm of the round end.



This shaping will affect the quality of the reed, so take care! It should be a nice even ellipse of 3mm diameter.



File the outer surface of the staple to provide a key for the cane part.

#### **Attaching the staple**

Insert the shaped end of the staple into the folded cane slip so that about 6mm of staple protrudes beyond the points.



**WHILST THE HEAT METHOD DESCRIBED BELOW WORKS WELL (AND CAN BE QUITE EXCITING!), I NOW FIND IT'S JUST AS EFFECTIVE TO DIP THE TIPS OF THE FOLDED SLIPS IN SOME WATER FOR ABOUT 20 TO 30 SECS. BEFORE INSERTING THE STAPLE AND CAREFULLY PUSHING THE THREAD DOWN. THEY DON'T TAKE LONG TO DRY, AFTER WHICH THE GLUE CAN BE APPLIED IN THE NORMAL WAY.**

The next stage requires a small camping stove or similar source of heat, and I use this method as an alternative to making the cane pliable by soaking.

Grip the tips of the cane slip points on the staple with pliers, and hold the exposed end of the staple in a flame. Allow a short while for the cane to warm and become pliable, but stop if it bursts into flames and turns black!! Take care as there may be fumes from the superglue. Push the wrapping gently down towards the 'shoulders' of the reed. I use the nails on my thumb and index finger to push at the very edges of the thread wrapping. After the initial heating of the staple end, you can keep taking the staple out of the flame for a few seconds while you work the thread a little further down each time. You will find that the cane moulds itself to the staple while the heated superglue will help it stick and reduce the risk of splitting.

Make sure the staple and the body of the reed are in a nice straight line. You can make fine adjustments by gently re-heating the staple. If the edges haven't closed up, try pushing another wrapping down while re-heating. This sometimes works, though obviously its better to get it right first time.



When cool, apply a small drop of superglue to each side of the points and allow to dry with the staple end pointed slightly downwards - glue must not enter the upper body of the reed.

When the glue is dry, use a file, knife etc. to chamfer the edges and points and make a nice smooth base for the wrapping.



**AT THIS STAGE, THERE SHOULD BE NO GAP AT THE SIDES OF THE SLIP. I HAVE FOUND THAT THE AIRTIGHTNESS OF THE FINISHED REED IS IMPROVED BY SMEARING A LITTLE ALL PURPOSE BATHROOM/KITCHEN SEALANT (NOT SILICONE) INTO THE 'V' SHAPE ON EACH SIDE WHERE THE POINTS FIT TO THE STAPLE. WHEN DRY, ADD A LAYER OF PTFE TAPE FOR GOOD MEASURE, THEN PROCEED WITH THE NORMAL WRAPPING. I NOW APPLY TWO COATS OF PVA GLUE AS AN ALTERNATIVE TO VARNISH OR SUPERGLUE.**

### Wrapping

Using waxed yellow hemp thread, embroidery thread or similar, wrap the end of the reed carefully up to 25mm above the end of the staple (should be just past the reed shoulders). You can start from the very end of the staple, but I usually leave some of the staple bare and add a few turns of loose waxed hemp later when its ready to be fitted in a chanter. (I have now started putting a few turns of PTFE or plumber's tape on before the thread, which makes the finished reed beautifully airtight).



The wrapping needs to be made airtight by coating with a mixture of knotting and shellac, or varnish. I use two coats of brush on superglue. I have tried nail varnish, but found it wasn't particularly airtight. Perhaps some of it is designed to be breathable. Again, this is something you can experiment with.

Leave until absolutely dry.

### **Now you are ready for the hard part!**

#### **Scraping the reed**

I use 240 grit wet and dry paper to begin with, and a sharp straight bladed craft knife. A combination of sanding and scraping removes the excess material from the reed blades, and regulates the shape and size of the scrape area. I keep the reed close to me, and hold the knife near the blade for extra control. Put the wet and dry paper on a flat surface. Alternate between sanding, holding the staple with the thumb and second finger, and your first finger over the top half of the reed, and scraping with the knife blade. Keep turning the reed and work on both sides equally. The reed blades will begin to thin and flex, and flatten between your finger and the flat surface. Hold the reed up to a strong light at frequent intervals to check on progress. Take care when scraping near the middle of the reed blade, just as it begins to curve out and back towards the staple end. It is quite easy to be a little too enthusiastic, making weak spots which are too thin, and the reed will be spoiled.

**USING A DIAGONAL SCRAPING TECHNIQUE HELPS TO PREVENT OVER THINNING OF THE MIDDLE AND LOWER SECTION OF THE REED**



Once the reed blades start to flex and flatten to your satisfaction, (sorry, this is a case of trial and error, and practice), twist a piece of wire around the cane part just above the wrapping and secure the ends. This is the bridle. It can be used to make adjustments to the reed aperture. Use pliers over the bridle to gently squeeze the reed blades together. (I use two turns of tinned copper wire, 22 SWG, but some may prefer one or more turns of thinner or thicker wire).




Continue with some gentle sanding (400 or 600 grit wet and dry) and scraping if necessary, then trim the end of the reed with a sharp blade, so that the total length of the reed is 51mm. Use the reflection in the knife again to ensure you are cutting squarely. I use a small cutting block for this job. Continue sanding and scraping, checking against the light.



Open up the reed aperture a little by squeezing the sides of the bridle and check that the "lips" of the reed are not getting too thin. The reed will begin to "crow" when sucked (**blow the dust out first!**). Unlike Highland Bagpipe reeds, these reeds must not be exposed to moisture. Take great care not to over thin, especially the tip of the reed. Again, only trial and error and a lot of practice will tell you how to proceed at this stage.



The finished reed sounds 'C' sharp when sucked.

 [Sound file \(wav.\) 33.2KB](#) - Please don't rely on the pitch being accurate in the sample.

**Small quantities of good quality reed cane can be obtained from:**

<http://www.windcraft.co.uk>

<http://www.howarth.uk.com/>

### **Reedmaking resources**

The Lowland and Border Pipers' Society website now has some very useful links for reedmaking and more on its [resources](#) page. Also highly recommended, The Lowland and Border Pipers' Society guide to Scottish bellows bagpipes ["More Power to your Elbow"](#) (with reedmaking appendix)