

**The Pen turner's Corner**  
**by Don Ward for More Woodturning**  
**August 2011**

I just spent the week in Lancaster County, Pennsylvania. The high each day was in the upper 70's and one day the high was 82. I returned today (June 18) to N. Texas. What a shock to get home from the Dallas/Ft. Worth airport and step out of the car into 113 degrees! We have been getting into the triple digits since late August. Triple digits are not unusual here but not so early. The shop is too hot to stay in. I hate to tax the AC in the shop by turning it on in 113 degrees. So, what can be done on such a hot day here in Texas? I found the answer...sit inside in the cool and write the article for August which is not due until the end of June. It is much more comfortable inside than out in the shop.

I missed the Utah symposium and will also miss the AAW. I am going into symposium with withdrawal but will have to hold on until mid-August when the SouthWest Association of Turners has the annual symposium here in Texas. I think I can hold out. I will be busy until then getting my two demos ready and also getting 200+ penblanks drilled and tubes glued in to be used in the hands on penturning area. This will be the 3<sup>rd</sup> year for the hands on penturning and I look forward to mentoring those who stop by to make a pen...some their first...some their 10<sup>th</sup> and some their 100<sup>th</sup>. Last year the age of those who turned a pen ranged from 6 to 83. Come by if you are in attendance at SWAT.

In November I will be traveling to Oregon to demo for the Willamette Valley Woodturners club in Salem, Oregon. I've never been to Oregon and I'm looking forward to the trip. I hope to stay over for the weekend and do a couple of classes if there is enough interest. Readers who live in that area may want to consider joining us for the meeting and maybe a Saturday penturning class. I will cover several aspects of penturning, if the class makes.

This month we are going to revisit the one piece slimline. I have a couple of improvements to share and also a new one piece design to show. The new design is sort of a marriage between the one piece slimline and my challenge pen. The design will be very similar to the challenge pen but a little smaller in diameter and made using a one piece blank. The pen could be made one piece by gluing the three pieces of the challenge pen into a single blank. But, this time I will just use one blank.

### **One Piece Slimline Improvements**

**Problem #1:** After making the one piece slimline for a previous article I noticed that it was quite difficult to twist. Holding onto the nib and twisting the pen proved difficult. One reason is the slickness of the nib...it is difficult to hold onto while twisting. Holding onto the nib is not nearly as effective in twisting the pen as holding onto the lower barrel of the standard made slimline.

**Problem #2:** Another problem with the one piece slimline proved to be removing the barrel from the nib-transmission assembly for replacing the refill. Again, the slickness and smallness of the nib proved difficult to hold onto again while pulling the barrel off of the assembly. Another reason for the difficulty of taking the pen apart proved to be the result of the upper tube totally sliding over the transmission. The amount of surface area of the upper tube over the transmission coupled with the nib's slick surface and the difficulty of holding onto the nib made pulling the barrel apart from the nib-transmission assembly very difficult.

**Problem #3:** The third problem that I've discovered is the very thin amount of wood remaining on the nib end of the completed pen blank. The thin wall of the completed pen makes crushing or breaking the nib end of the pen quite easy.

Solutions to these problems proved to not be difficult. A little thought and experimentation yielded some solutions that are working quite well for me so far. Here are the solutions I am now applying.

**Solution to problem #1:** Some transmissions are inherently more difficult to twist than others. Continuous twisting of the transmission prior to installation can help to loosen the movement. Also, a small drop of thin oil will loosen or soften the grease like material inside the transmission making twisting much easier. Too much oil will dissolve the grease and make the transmission's movement very loose. Although loose, I have not had one fail to function properly. Investigate the transmission used and decide what is the better way to solve the stiffness. It may need no help at all. Some do and others do not. Problem #1 is now solved.

**Solution to problem #2:** I solved this problem by using a shorter tube for the upper tube. A shorter tube equals less surface area over the transmission and makes removing the barrel from the transmission assembly much easier. How short of an upper barrel should be used? I determined this by the following procedure: (1) cut and drill the blank to its final length. Slip a tube over a pen mill and square both ends. (2) Press the nib and transmission into one of the tubes that came with the kit. The total length of this assembly from nib tip to transmission tip is 3.95 inches. **See figure 1.**



**Figure 1**

Cut the blank to length (for now ignore the angle cut at one of the ends) and drill with the 7mm bit. Actually, I use a letter J bit which gives a better fit for the tubes than the 7mm bit. Slip the nib-tube-transmission assembly into the into the one end and place the second tube into the other end. Push the tube over the transmission just enough to grab the transmission. Test to make sure the transmission will twist. Adjust as necessary, **Figure 2** shows the assembly in place along with upper tube pushed over the transmission. Mark the tube, remove and cut it to the marked length. Glue the tube section into place. The transmission assembly should now slide into the tube and function as normal. Problem #2 is now solved.



Figure 2

**Solution to problem #3:** The thinness of the wood and inherent weakness can be solved by using another tube section in the nib end. The extra section of tube needs to be just large enough (diameter) for the 7mm tube to slip inside. The tube I've settled on is the 8mm tube from either the Berea perfume pen or the bracelet helper. Other kit tubes may also work. I used a  $\frac{3}{4}$  inch length to solve this problem. After drilling the blank with the 7mm bit the blank must be counter drilled with a letter O bit to accommodate the 8mm tube. Decide which end of the blank will be the nib end. After drilling the 7mm hole remove the 7mm bit from the Jacob's chuck and replace it with the letter O bit. Do not move the pen blank. The center axis of the blank and the center axis of the drill bit need to stay aligned. Once the letter O bit is in place chase the 7mm hole with the O bit to a length of  $\frac{3}{4}$  inch. **Figure 3** shows the letter O bit drilling the new hole. Glue in the 8mm tube section, trim if needed and square the end.



Figure 3

**Figure 4** shows the 8mm tube going into place. To square the end place a 7mm tube over the pen mill pilot shaft, insert into the 8mm tube and square as usual.



**Figure 4**

**Figure 5** shows the 8mm tube glued into place and the end squared. The pen blank is now ready to be placed onto the lathe, turned and made into a pen. This is exactly what will be done next



**Figure 5.**

**Let's make a pen:** The pen will be a marriage between the one piece slimline (July 2009) and the pen I call the challenge pen (July 2007). Of course, I will be using the improvements discussed above. **Figure 6** shows the parts laid out with the prepped blank. To get the blank ready I drilled the 7mm hole while the blank was still square. I would have rounded it but cutting the angle on the clip end is easier done with a square blank than a round one.



**Figure 6**

The next step, after drilling the 7mm hole is to counter drill a hole for the clip finial. Remember, on the challenge pen the clip finial will be recessed into a little larger hole. Counter drill a 11/32 hole in what will be the clip end. Drill to a depth of about  $\frac{3}{4}$  inch. The final depth will be adjusted later.

The next step is to cut the clip end at 15°. Other angles can be used but 15° looks best to me. Try several angles and decide the angle that looks best. Cut off as little as possible so the long end of the cut is very close to the end of the blank. Now, we must test fit the clip finial and adjust the angle cut. A relief notch will be needed for the clip to clear. The longer the 11/32 inch hole the deeper the notch will need to be. Review the challenge pen article. It is on my website for easy reviewing. For this pen I chose the depth to be rather shallow so no notch is needed. This will require the bottom of the clip finial to be positioned just a little bit above the short end of the 15° cut. **See figure 7.** Some relief may be needed. To do this I use a Drimmel tool, small micro files, or both. The deeper the finial is recessed the deeper the relief slot must be. Play with placement and do what looks best to your eye.



**Figure 7**

The blank is now ready to be cut to length. The pen blank I used for this article had a length of 4.5 inches from the lone side of the 15° cut to the other end. This length can be adjusted to personal taste...a little longer or even a little shorter. After cutting to length the blank needs to be aligned with the 7mm drill bit and the hole for the 8mm tube need to be cut as outlined above.

After cutting the blank the upper tube is ready to be glued into place. The clip end of the upper tube should be positioned at the bottom of the 11/32 hole and at the top of the 7mm hold. The clip end needs to be at the junction of these two holes. That will allow the clip finial to be positioned as planned. The 8mm section is now ready to be glued into place. Square the nib end as outlined above. The pen is now ready to be mounted on the mandrel and turned.

So the pen blank will be stable on the pen mandrel a length of 7mm tube must be inserted through the 8mm tube and meet with the upper tube. This tube needs to cut to the end of the 8mm section. **DO NOT GLUE THIS TUBE.** It will be removed after turning. With the lose section of 7mm tube inserted the blank can now be placed on the mandrel with

bushings on each end. Tighten the nut, bring up the tail stock and begin turning. Shape the pen, sand and finish. Be careful not to turn into the 8mm tube. When the diameter of the nib end is reached carefully round over the end to soften the sharp edge. **Figure 8** shows the blank on the mandrel.



**Figure 8**

**Figure 9** shows the completed pen.



**Figure 9**

Have fun with this pen. Look me up at SWAT. Come to the Friday evening special interest group meeting for pen turning. Stop by the hands on pen turning area and make yourself a pen. We will have some really nice afzelia blanks ready to turn into a pen. Comments and questions welcome. Email me at [don@RedRiverPens.com](mailto:don@RedRiverPens.com)  
Do a good turn daily!..... Don