A Funny Thing Happened On The Way To The PITH

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A.K.A “Russknan”

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Russknan

Dear fellow IAP members,

This posting is not really a tutorial, but rather the story of a relatively new IAP member and pen turner's journey of discovery, prompted by signing onto the PITH exchange. Building a pen unique enough and good enough to send to my PITH partner and new friend Greg (Triple Crown) was one of the more intense learning experiences - especially within the context of a hobby - that I've ever had. It would have been relatively easy to send Greg a pen that I really liked, but the requirement that it challenge one's own abilities really kicked it up a notch. As you will see, there were multiple failures. But trying to solve those problems provided a GREAT opportunity to learn new skills. Some of those problems I have not yet solved. I'm still searching for ways to successfully complete the original design, and may be getting closer. Perhaps some will know for sure how to do it. Others may identify with the mistakes. I hope you will find the following to be interesting.

The original plan was to build a rollerball, based on the Junior Gentleman II pen. Greg told me that he had not done rollerballs, so I thought this might be a good introduction. I like them, but have had difficulty drilling the JG IIs. The bits I had (10.5 and 12.5mm, respectively) have been conventional bits, not brad points. And, they haven't been perfectly straight, or very sharp. (The Christmas gift of a Drill Doctor from my wife will probably take care of the latter.) On top of that, especially with the 12.5, there isn't a lot of "meat" left over to work with, after the tubes are inserted, so you have to get as close to the center as possible. Finally, due to the lack of straightness of the bit, there is a fair amount of vibration. I was to discover that that is a VERY bad combination when working with a segmented and possibly temperamental blank. This was also my first attempt at segmenting.

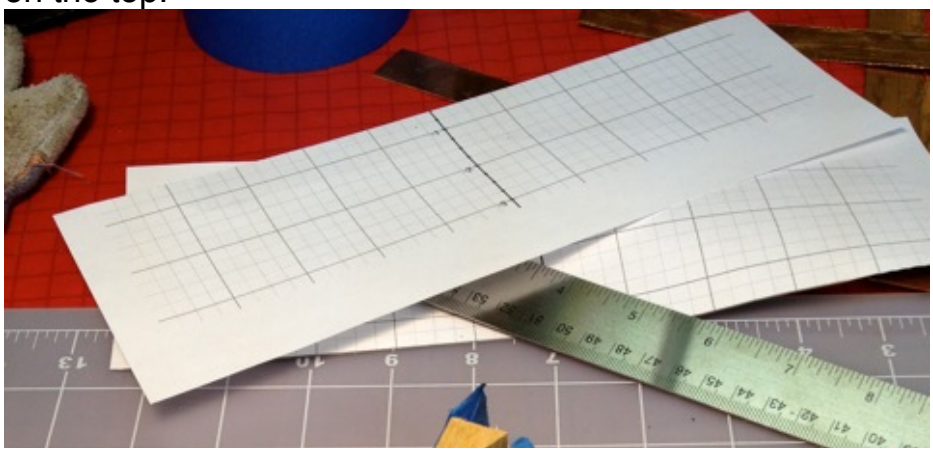
I had in mind a design of my own creation which I thought might look nice, especially with the copper accent. I wanted to play with "sine waves" with contrasting amplitudes, as you will see below. I enlisted the help of my son, the engineer, in generating a sine wave of the right size in Excel. Had no idea how to do that myself. Cut out the wave on a template - actually had my wife cut it out. She is an artist, and has a steadier hand. So now, this is becoming a family project. My job was not to booger up the result!

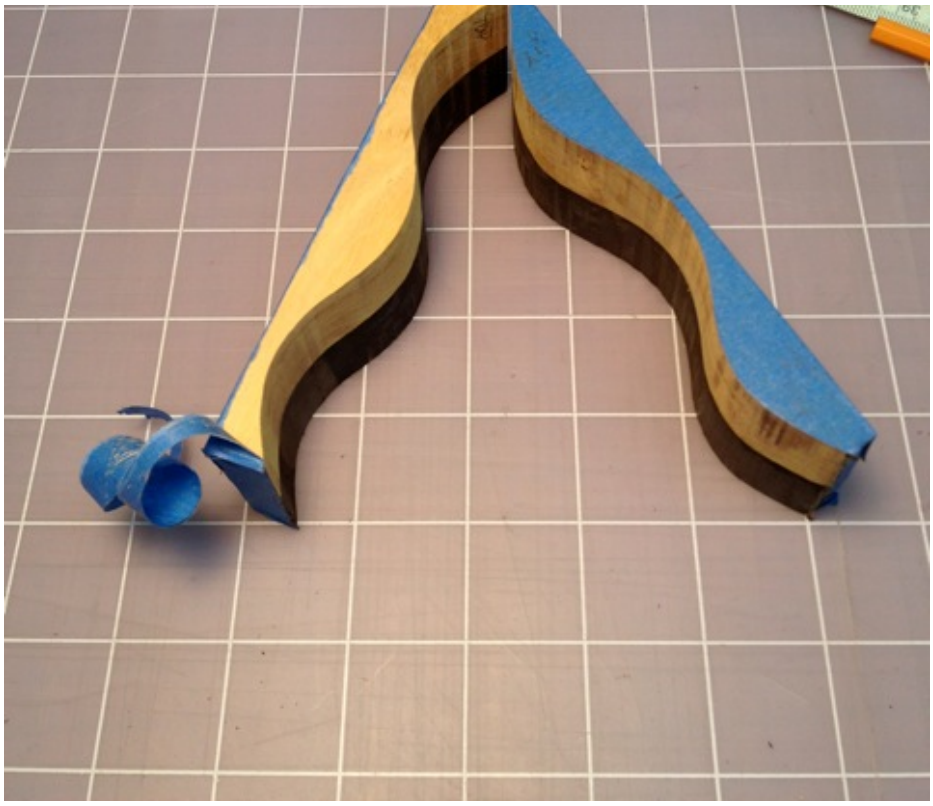
I stacked a blank of mulberry from my back yard (LOVE the wood!) over a blank of ebony. Taped them together with painter's tape, traced the first wave, and put it in a simple 2x4 jig which I had seen somewhere. Offered a much greater chance of my ending the bandsaw

adventure with the same number of fingers as when I started.

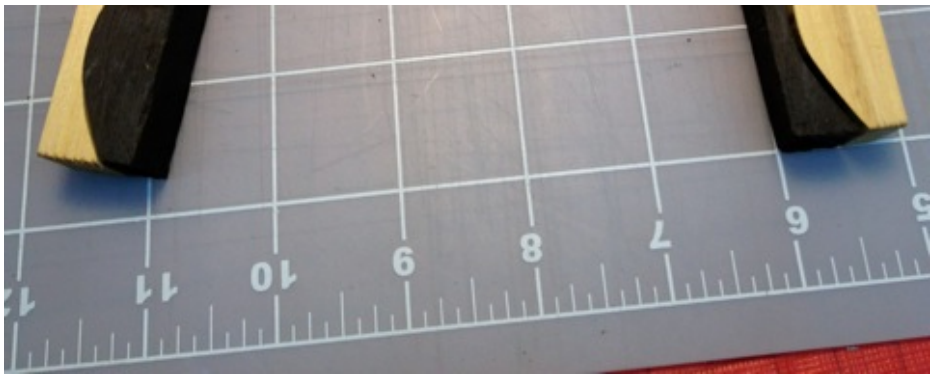
Here, it's ready to cut:

In cutting, I discovered that it is very hard to make perfectly smooth cuts on the bandsaw, using a 1/4"x14 TPI blade - or probably any other blade, in my case.
Here's the first cut. I then sanded both sides on drum sander to smooth out some of the variations. Then, took the tape off and swapped an ebony piece on the bottom for mulberry on the top.



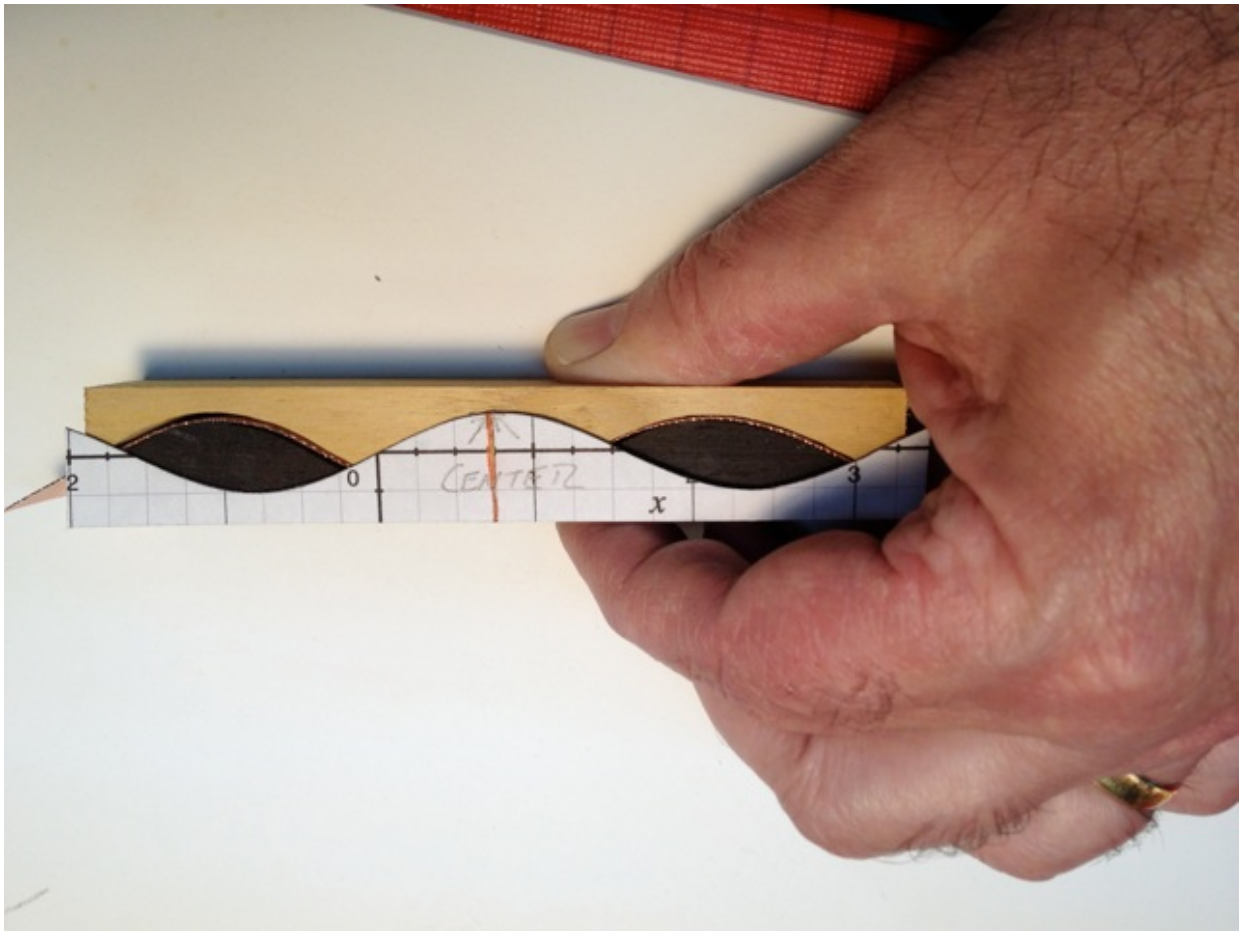


So now, there are two complete blanks, ready for gluing in some copper.



Glued up both blanks with copper "sandwiches", and proceeded to continue to work with the first one. The second one was put away for "later" and actually, in the end, would become the final pen.

The next pictures show me overlaying the template, marking it out, cutting and gluing in the second strip of copper.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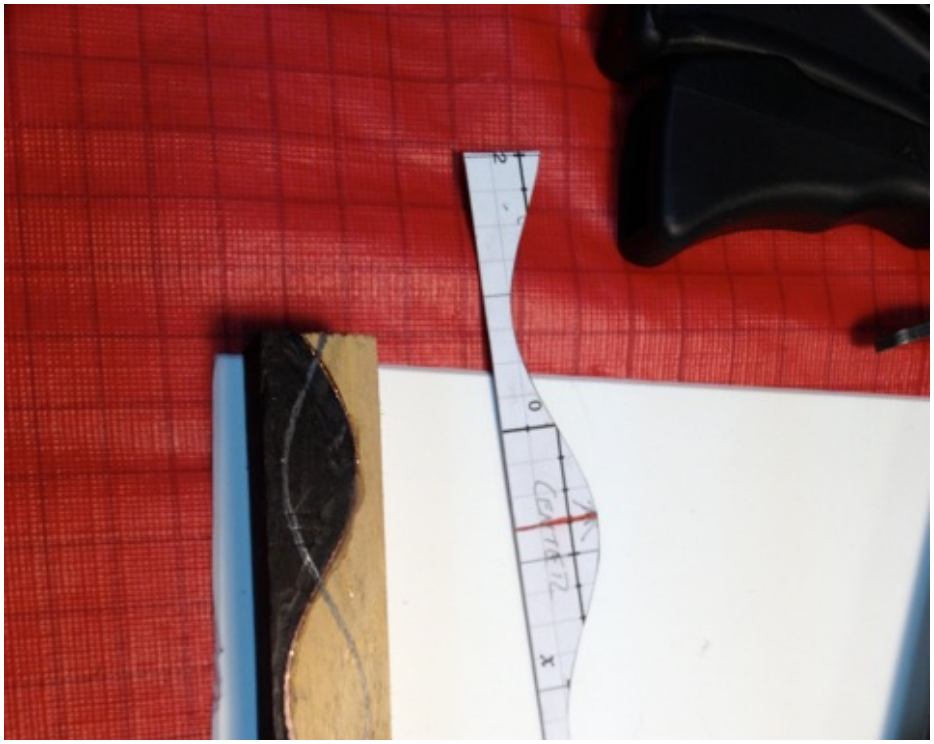
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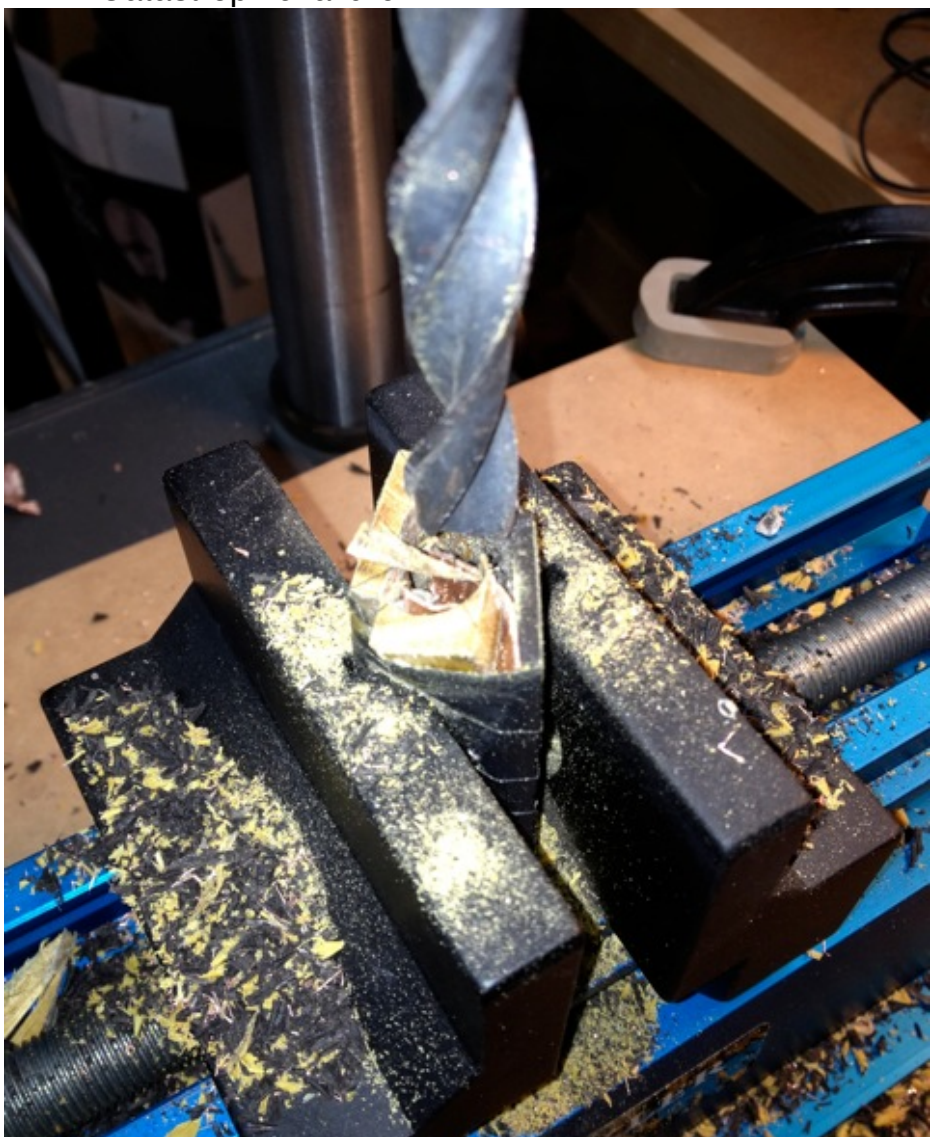
In the process of cutting, I lost a couple little pieces of wood on each end. No problem, the blanks will be shorter than that.

I'm really starting to like the looks of this! BTW, used thick CA as the glue.

Electrician's tape was used to give extra support while drilling. So let's start with the more difficult cap end, and the dreaded 12.5mm bit. In retrospect, I probably torqued the vise down a LITTLE too much, trying to compensate for the vibration of the bit. Drilled as slowly as I could, and only about 1/4" at a time. The blank survived the initial contact with the bit, and I was nearly 1/2 way through it when . . .

BAM! Catastrophic failure!



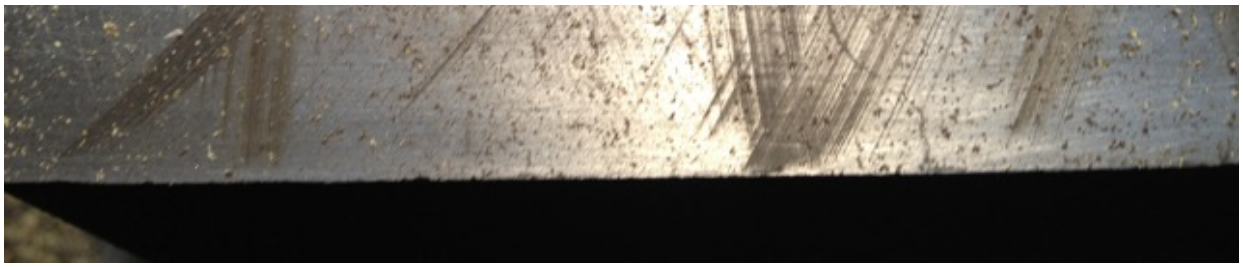
Nothing to salvage.

Managed to drill the lower tube for the JG II and glue the tube in without incident. Decided to turn it to see how it came out, thinking that perhaps I'd make a top out of some compatible wood - perhaps plain mulberry, since I like it so much. I really liked the design of the bottom blank and thought that it might carry the whole pen.

The Agony Continues . . .

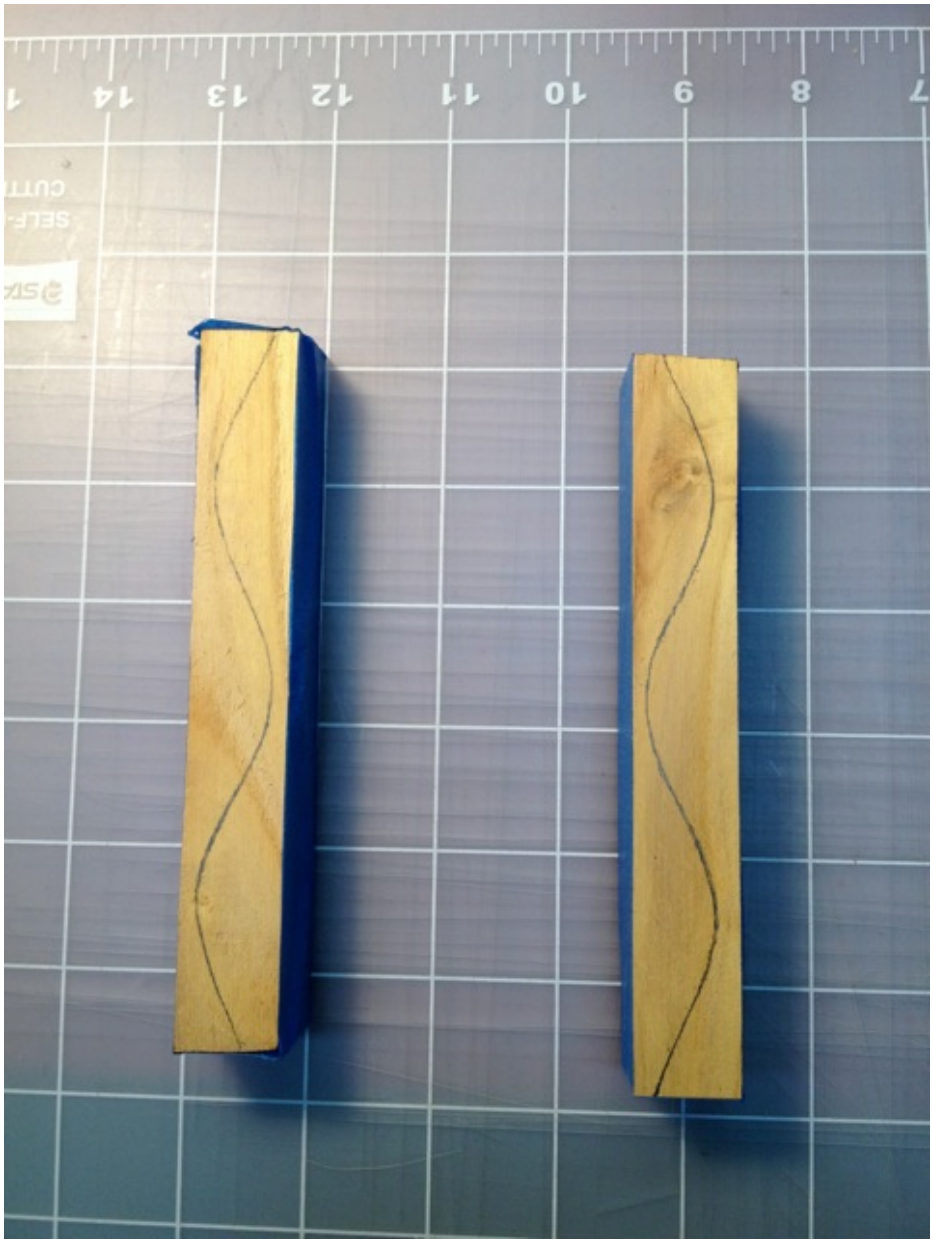
Rounded the blank with my gouge, then switched to my EasyWood carbide chisel, thinking it might put less stress on the copper, due to its hardness and sharpness. Looking at the blank below, I was really starting to fall in love with it.

Having this amount of copper near the surface might be a little challenging. So I went very gently with the chisel when . . .

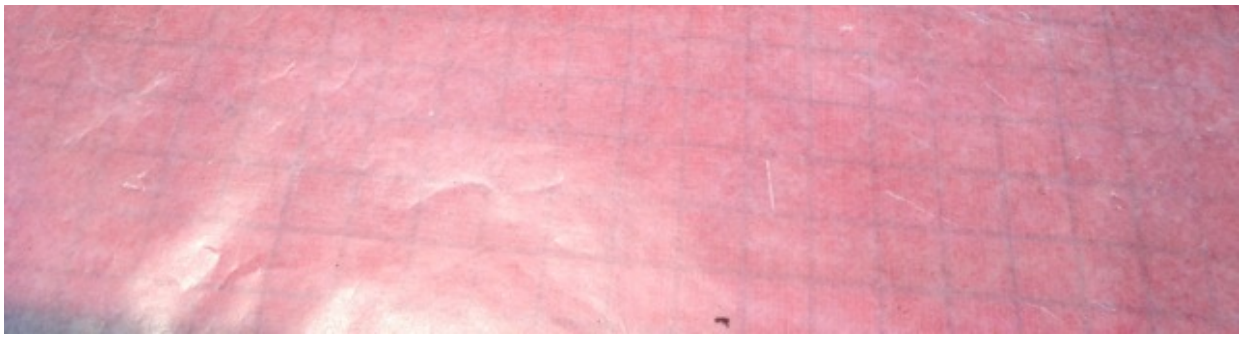


BAM! Another catastrophic failure! I guess there must have been a tiny catch and, not only did it bend the copper, but blew out the little piece of wood above it. Unsalvageable . . . although I still have fantasies of trying to cut most of the exposed copper off, perhaps with a Dremel, and part down to the bare tube on the right. Maybe someday.

So it's back to the drawing board with a modified plan. This time, no copper, and a change in placement of the sine waves. I'll cut one as before, then rotate the reassembled blanks and cut another one at 90 degrees.



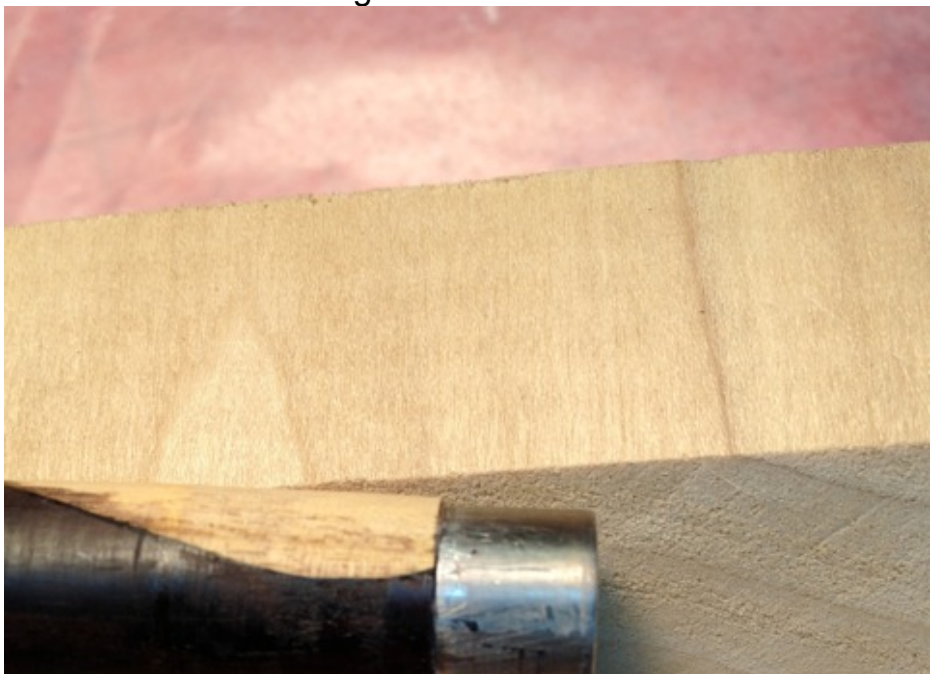
Didn't realize that I should have stacked BOTH blank sets, before making the second cut. That meant that, in order to get the design I wanted, I had to flip the halves end for end. Of course, they didn't fit as well that way. Also decided to use epoxy, instead of CA for the glueing, and put in some black resin to stain the glue. The down side is that the black outlines any wavering in my bandsaw cuts. BTW, the remaining piece of ebony that I had was too skinny. So I used African Blackwood.



Survived the drilling this time. And, on the lathe, it's starting to look pretty good, with the "sine wave" showing up well!

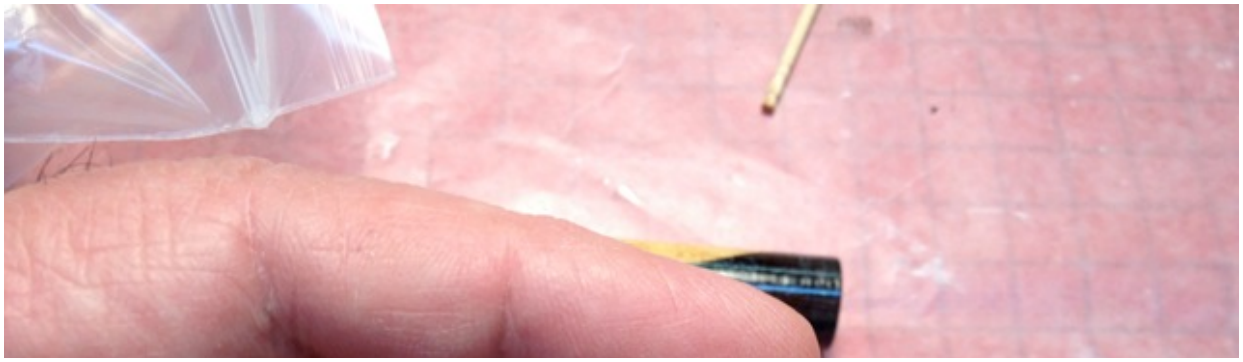
But, as I turned it down more, unanticipated shape variations were revealed. The blanks are supposed to be two different diameters, which is no problem when you are using the SAME wood throughout. But the segmenting was not coming out symmetrically. And then, there's that wavering thing.

Had to reinforce some gaps between the segments with CA. No problem . . . until it was time to take the bushings off. Stuck like I've never had before!



Finally managed to liberate the bushings and put back on the mandrel with Delrin bushings to prevent sticking from the CA and other finish. I put several coats of CA on, first, then a number of coats of Wood Turner's Finish and quit for the night.

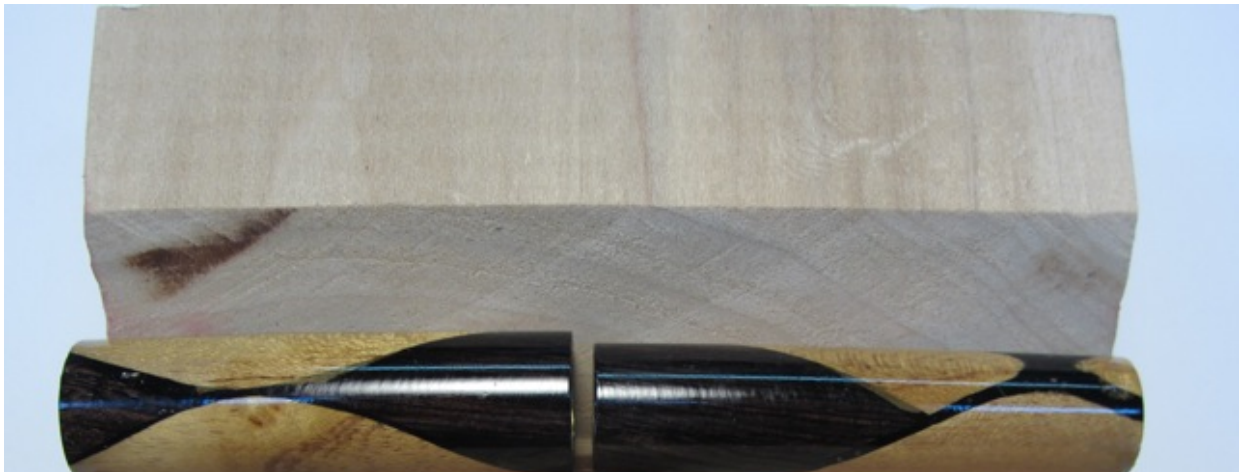
Next morning, I found some white crap in the finish!

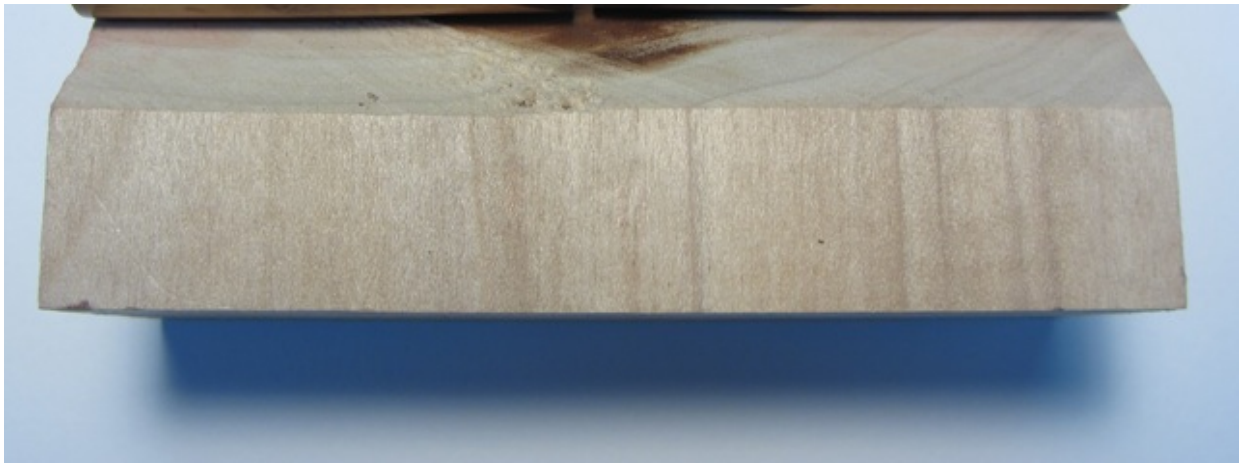


That won't do, so back on the lathe, sanding through the layers of finish, and refinishing.

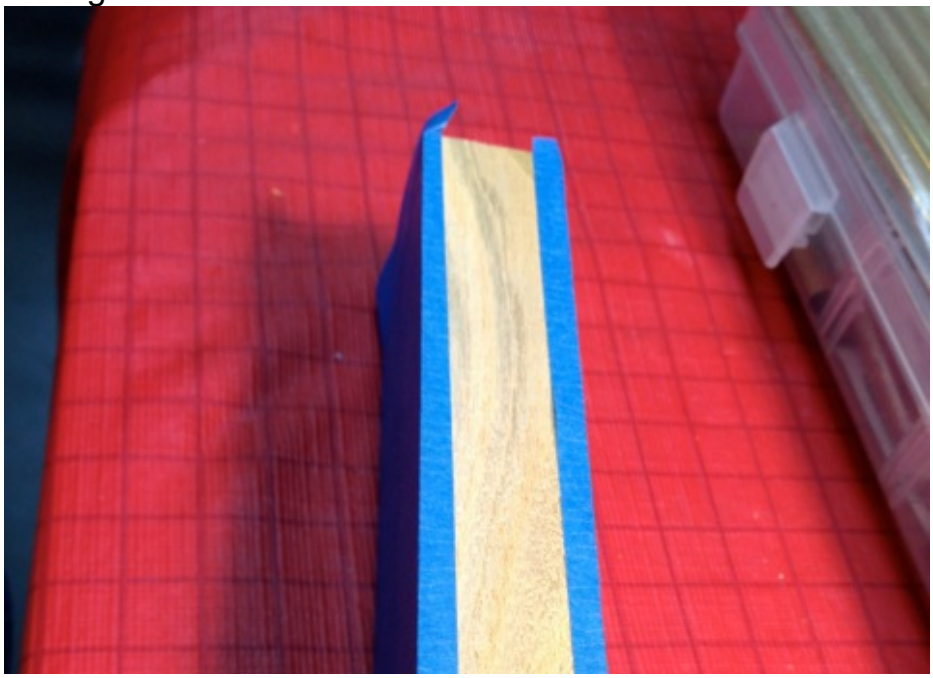
The Agony Deepens . . .

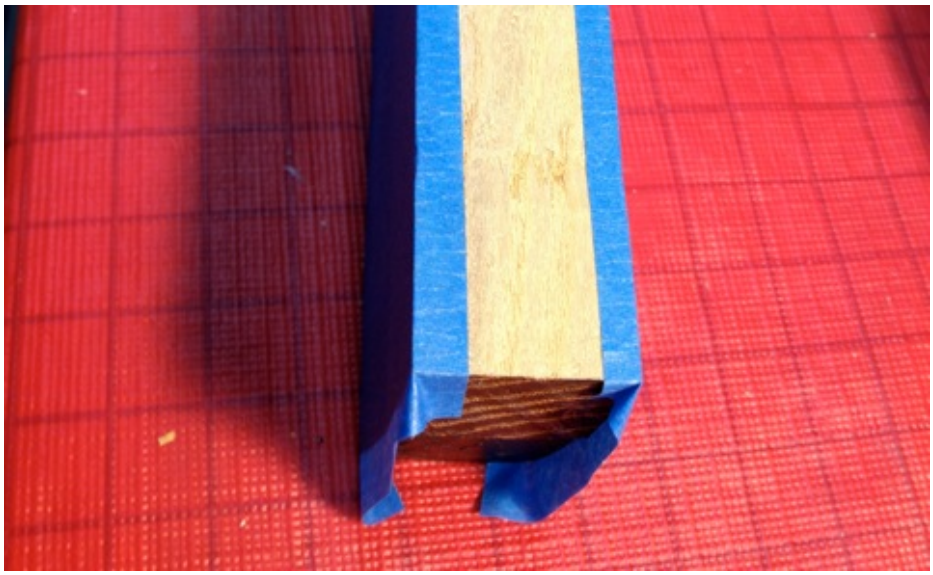
Doing some investigating online - IAP and elsewhere - I came to realize that the problem was that my CA glue had expired. Remember that I've only been making pens since March 2012, so I wouldn't have believed that the CA I bought from Craft Supplies USA around that time would have expired. Ordered some new stuff from Monty on IAP. Of course there was a lag time of over a week, waiting to get the new CA. Monty shipped pretty quickly, but there was a wait. So now, back to the workshop, sand off all the old finish, then apply the new stuff. Without yet buffing out some minor radial scratches, I think the finish looks pretty good. But, if you look closer, I just couldn't live with the shapes and some imperfections on the right side of the pictures below. The rest isn't bad, but I wasn't going to have that represent my work by sending it to Greg.





So, back to the drawing board. Stack and cut two new blanks, And THIS time, re-stack for cutting the second sine wave.

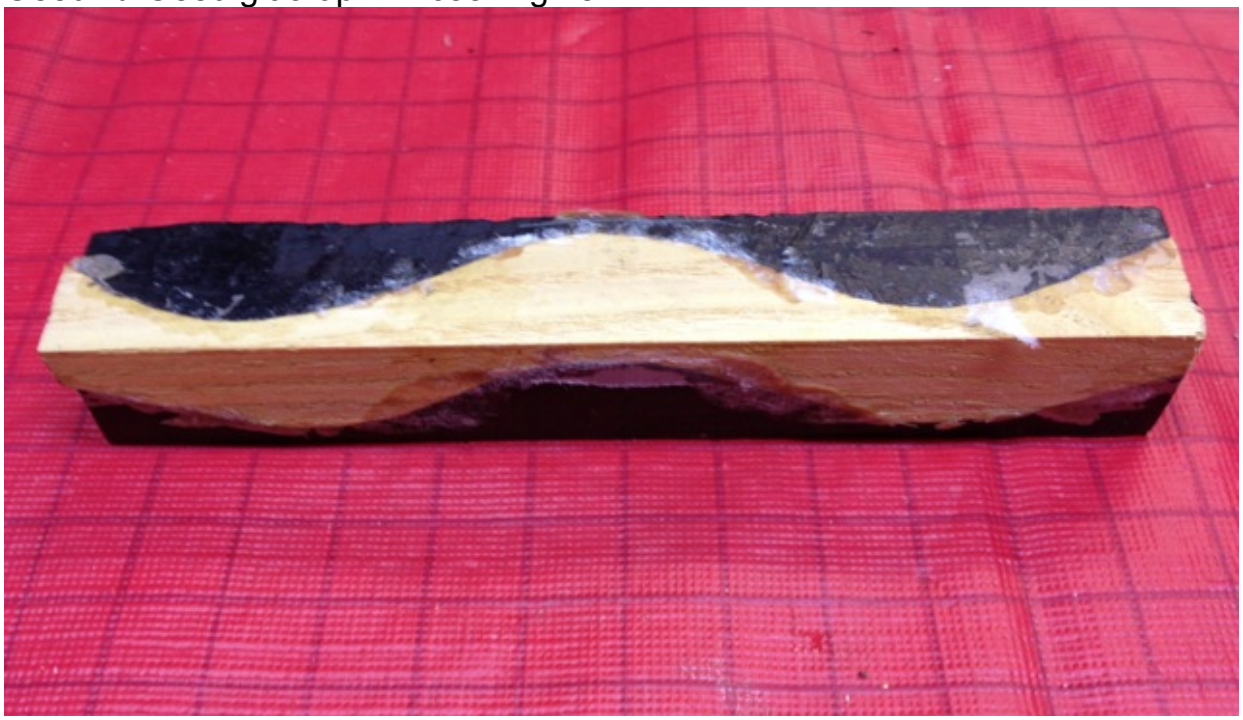




Looking pretty good, so far.

Ready to glue. Also wiped them down with Denatured Alcohol to help improve glue adhesion. And used Titebond II wood glue. A MUCH better choice.

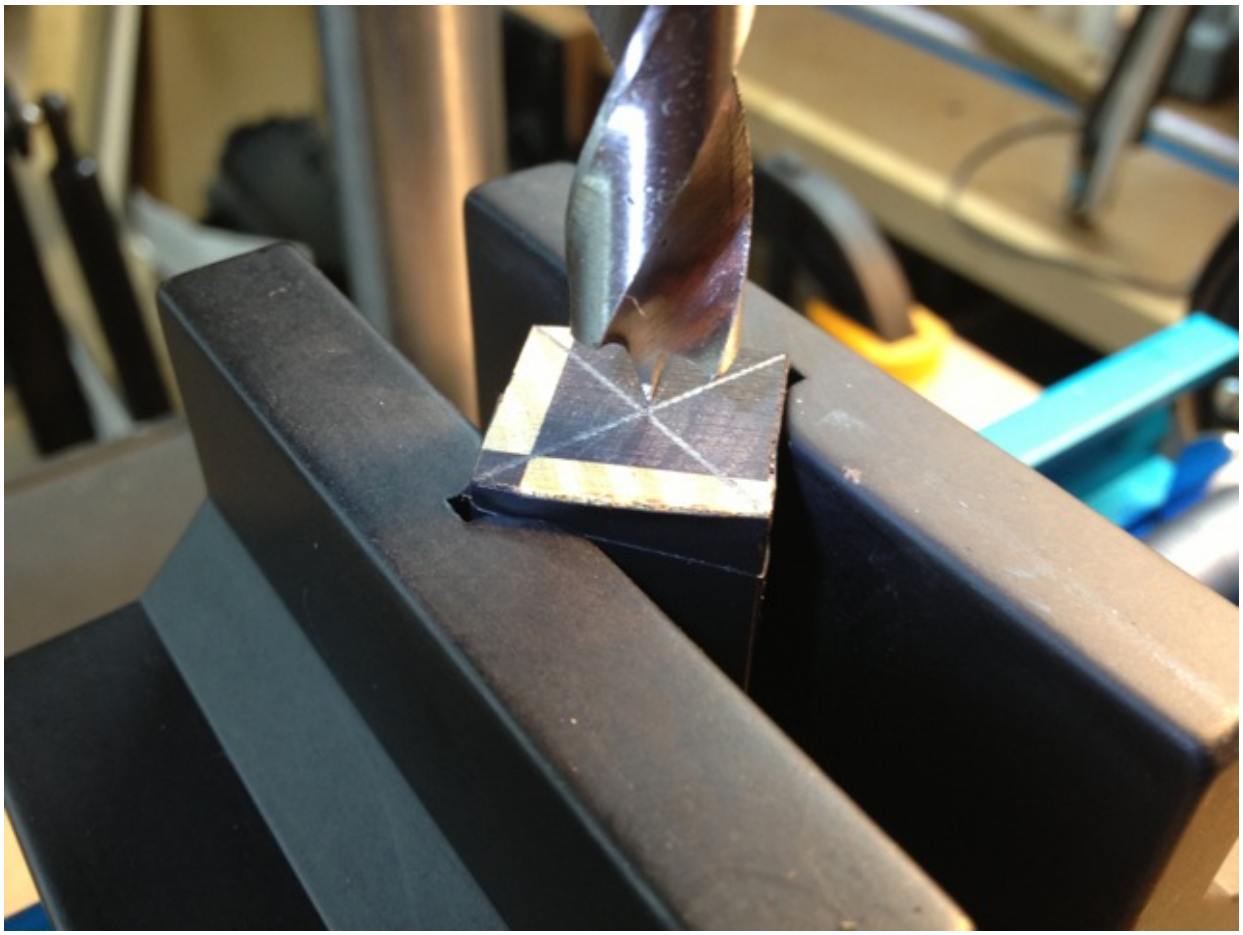
Good fit. Good glue-up. I'm cooking now!



In the mean time, I put out a question on IAP having to do with where I might buy fractional metric BRAD POINT bits. Somebody pointed me to Woodcraft. Ordered them, but there was a wait now of about 1 1/2 weeks. Are we noticing a pattern? Although I thought I had left PLENTY of time, we were getting uncomfortably closer to the deadline.

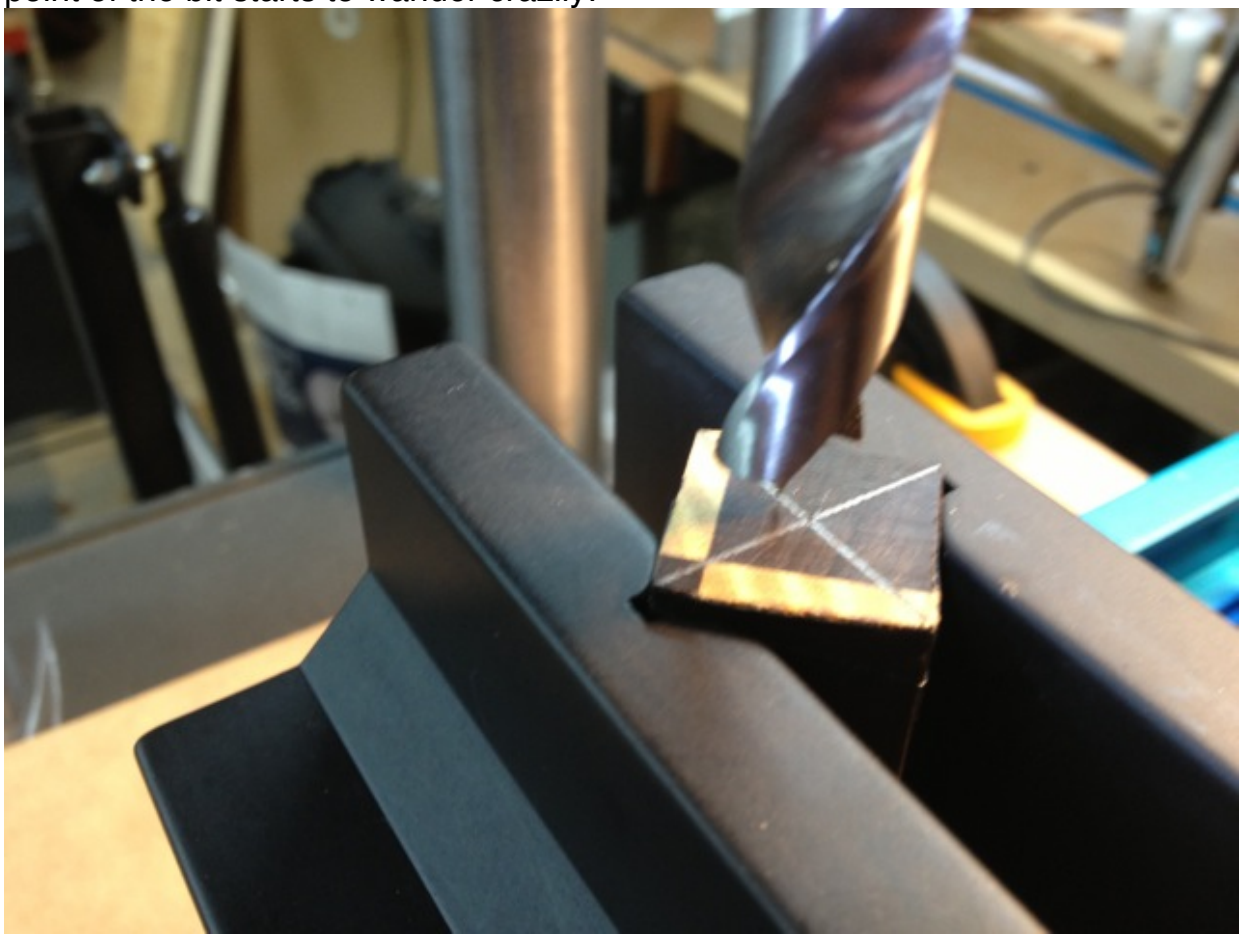
The Agony (cont.), and Finally, the Ecstasy . . .

So the new drill bits arrive. They are shiny, sharp, and look great. I can't wait to use them to finally complete Greg's pen. Load the cap into the vise on the drill press and line up the point of the bit. Check that the pressure from the vise isn't too tight. The excitement builds!

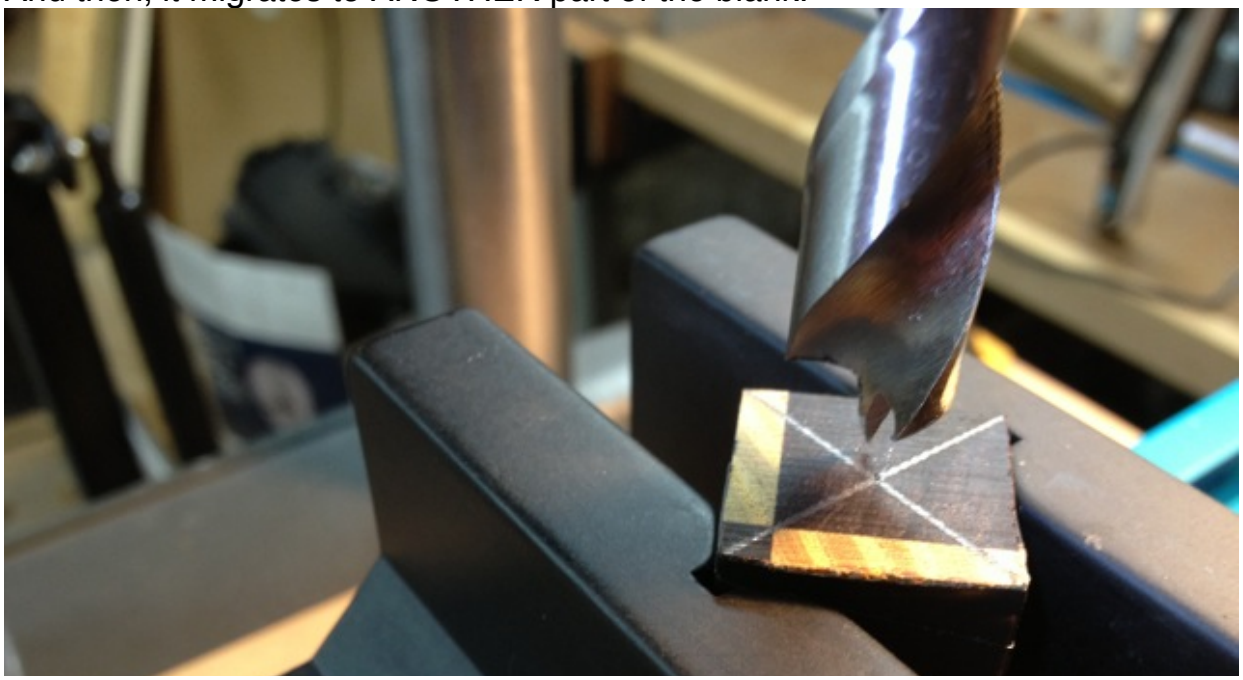


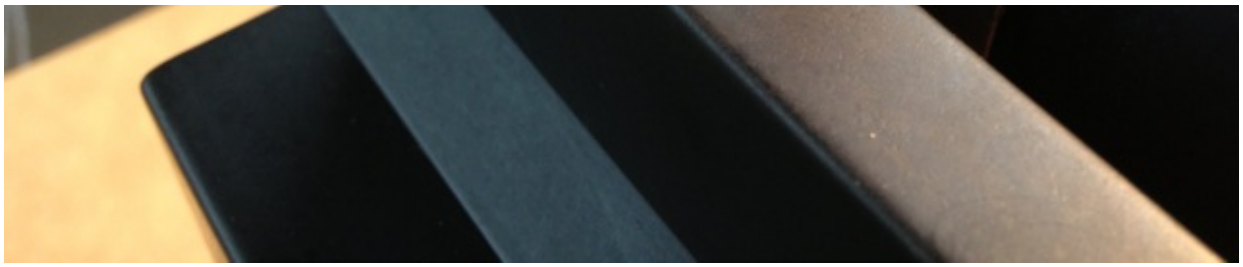
For some reason, I had the good sense to turn the quill before firing up the drill press. The

point of the bit starts to wander crazily!



And then, it migrates to ANOTHER part of the blank.





Note that, from one flute to the next, the runout was .040! Not going to drill with that!

Time to break out the old bits and drill carefully.
No blow-outs. Whew! Got 'em drilled, and ready to turn.

Turning completed, and partially finished.

Look at that sine wave! Looks much better than the first one . . . but there are still funky, wavy lines, and random, funky, unpleasing shapes. This won't do either!

May we all bow our heads, and pause for a moment of despair?

In desperation now, because so much time has passed, I decided to take out the ORIGINAL left-over blank with ONE piece of copper in it. Instead of doing a Jr. Gent II, perhaps I'll use a Designer NT blank. That should leave more "meat" on the tubes, since they are 7mm, and may give me a better chance at avoiding a blow-out. Hopefully, the shape will be more pleasing, too. Got them drilled, tubed (epoxy, no colorant), and on the lathe. Started turning carefully with a gouge - NO EasyWood carbide! Really coming along. Shape and design are pleasing. But the part where the finial will go is looking awfully thin! Wouldn't take much to just nick that and pop out the thin slice of wood above it. Needed to use the skew as a scraper to even out the turning. Did it EVER so gently. HUGE pucker factor. Finally got it smooth enough and to the right dimension. Great sense of relief in being able to put the chisels down and begin to sand. Wiped the whole thing with DNA. But then there are dark dots on the ebony on both blanks! Sand some more, and DNA again. Dots still there. Can't do anything about it. They're about the same size and symmetrical on both blanks.

Screw it, time to put some finish on. The dots disappear! So now, 6-8 coats of CA, steel wool, then 6-8 coats of WTF.

Buff with tripoli, then white diamond. Put Renaissance Wax on the metal parts and assemble CAREFULLY so no last-minute cracks. It worked!

So, there it is, the REST of the story. I hope Greg's pen gives him years of good use and enjoyment. And I hope that you've found something to connect with in the tale.

Yeah, I'll be putting my name in again for the PITH challenge next year. Trying for a LITTLE more ecstasy and a LOT less agony! If you haven't tried the PITH yet, when the opportunity presents, DO IT! You'll learn a LOT more about making pens . . . and perhaps, like me, you'll gain a really good friend.

Russ