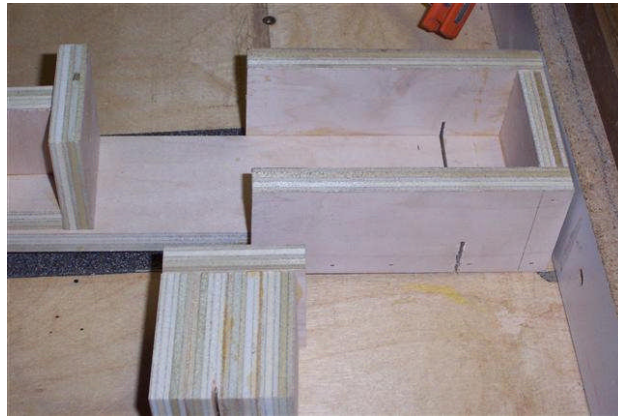


# Lite Brite Pictorial by Eagle



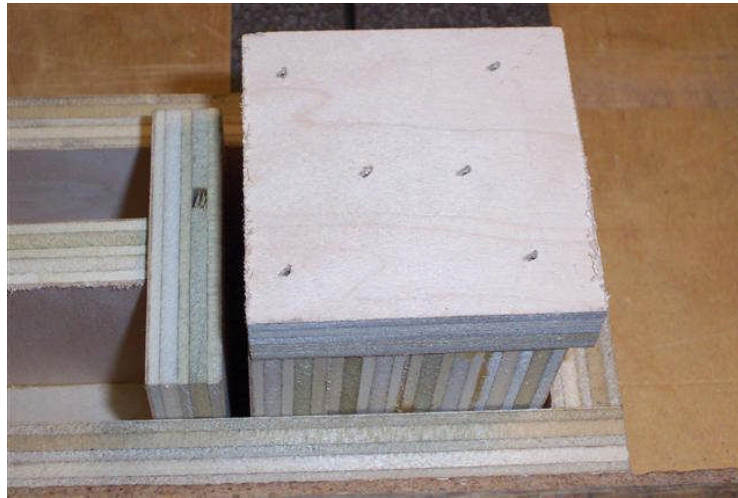
Since I figured I was going to make more of this s=design in the future I decided to make a jig to accurately cut my "lite brite" pieces. There are three components, A "crib, decker" and a hold down (For lack of better terms).



The "crib" holds the pieces and is clamped to my sled. (I made my sled a few inches wider than my table saw for this purpose. I glued and bradded a cleat to the under side of the "Crib" so the slot from the saw kerf will always be in the same place. Though the length of the pieces is not critical I envisioned it being easier if they were pretty close.



I would like to wind up with all the digits on my extremities when I get done with this project and also to accurately hold the pieces in place while I cut them, or maybe I should say while the saw cuts them



The end result a pretty even, clean cut on some small pieces with a full size contractors saw and a 7&1/4 inch Freud Diablo blade.



It took about a half an hour to make the jig and about 5 minutes to cut the pieces.

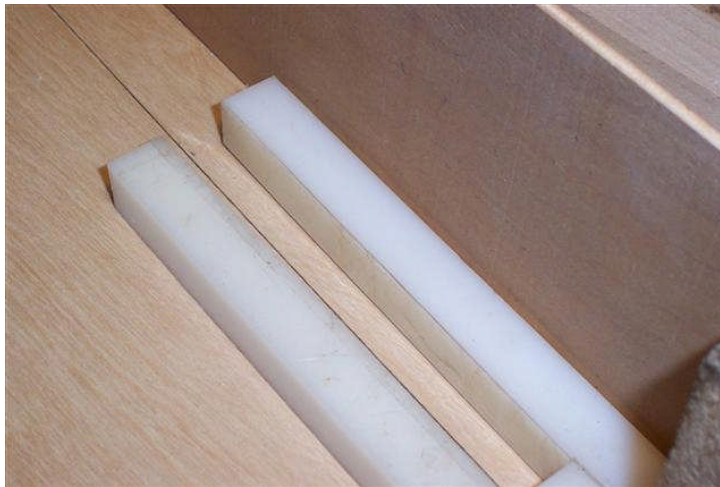


I have learned from experience the magical and mystical properties of packing tape while doing glue ups with the adhesive of my choice. Since I may want to use these same pieces again I wrap them

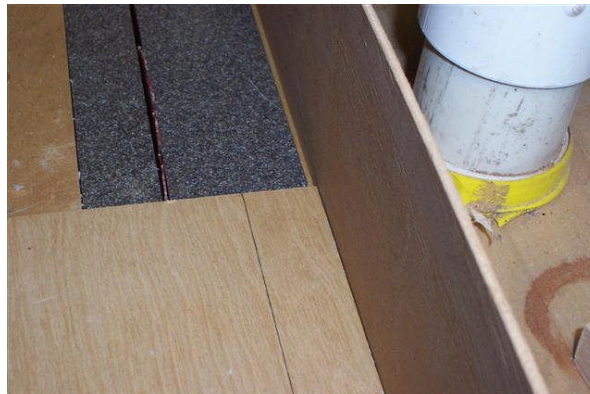
with the magical mystical tape



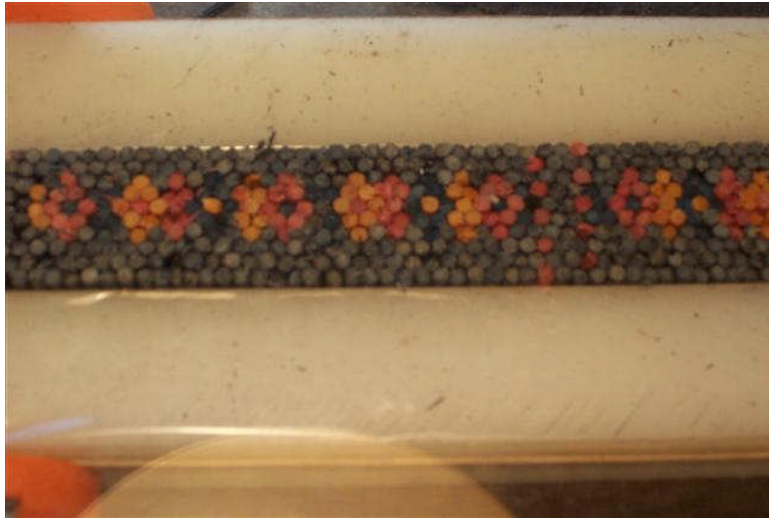
I got a little ahead of both of us there. I like to have a minimum of  $\frac{3}{4}$  square when I make my blanks, you'll see why eventually. The spacer is  $\frac{3}{4}$ " wide and the length of the forms is around 8 inches give or take I may adjust this after I do the first one but this should work for now



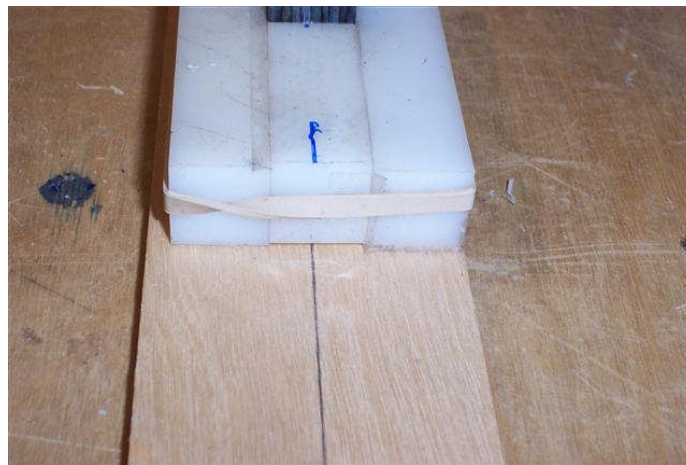
I will need a "sacrificial" bottom for this glue up .I always reference center out of a for of habit, again, you'll see why later. The final width of this waste piece will be about 2&1/2" but it isn't critical so long as the sides are parallel



Reverse side of completed blank before gluing



The blue line represents the center of the pattern( both ends) When it is placed on the “sacrificial” board for gluing these “bench marks” will aid in alignment for future use(you’ll see why later)

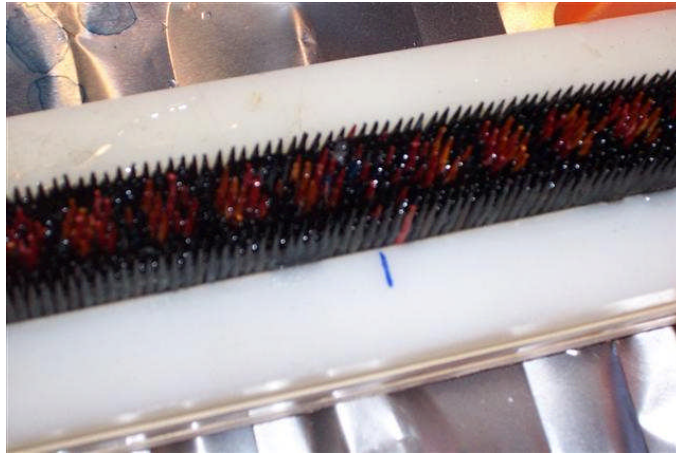


Because I could not photograph it and place it on the board at the same time, I “buttered the “flat side “with thick CA prior to placing it on the board being careful to align the center of the sacrificial board and the blue marks on the forms.

The clamp is on this end because the pieces started to "splay" the form



All glued up and curing over nite without accelerant. This is due to the amount of glue I used



Since I wanted to see the amount of glue penetration and add some more thin if necessary, I cut the tops off on the bandsaw.



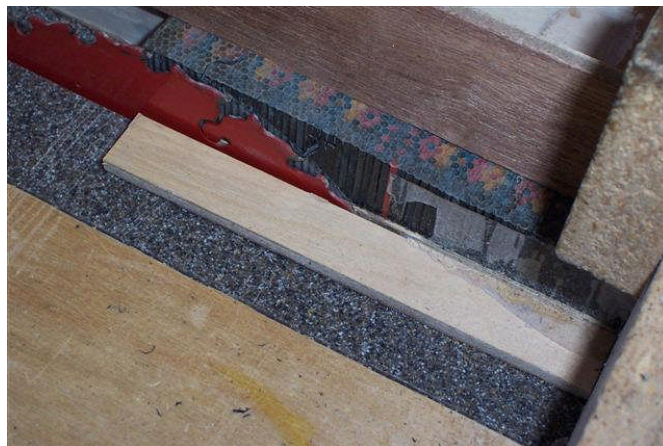
Remember when I put the packing tape on the bread board forms? This is why. Using a little leverage with the aid of a chisel I was able to pry the form off at the point where the tape contacted the glued up pieces. The bread board stuff may or may not be slick enough. I have found from previous experience the use of the tape make separating the pieces easier. I use it on wood all the time and an exacto knife can separate the tape with glue from a blank. It doesn't hurt, only takes a minute and it may help in the long run. Another thought. The next time I will just use wood forms and cut them off as you'll see in future pictures.



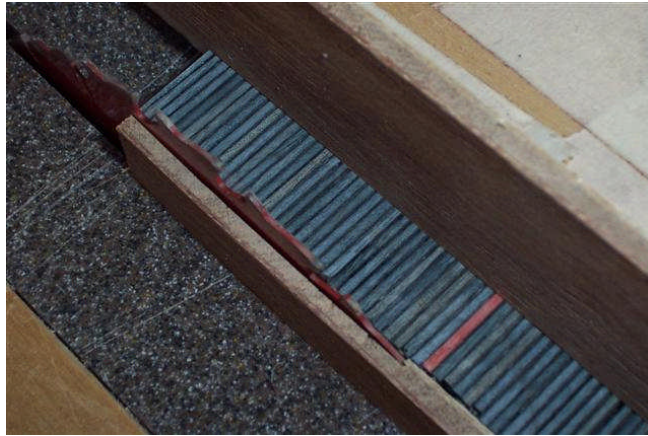
Remember that line on the “sacrificial board?”  
That line was parallel to the outside of the board I glued the blank to.  
Though not an exact science I can clean up the outside edges and dimension the blank



Here’s a couple of pictures cleaning up the blank. At the extreme upper left hand side of the picture you can make out the sacrificial base the blank is glued to.

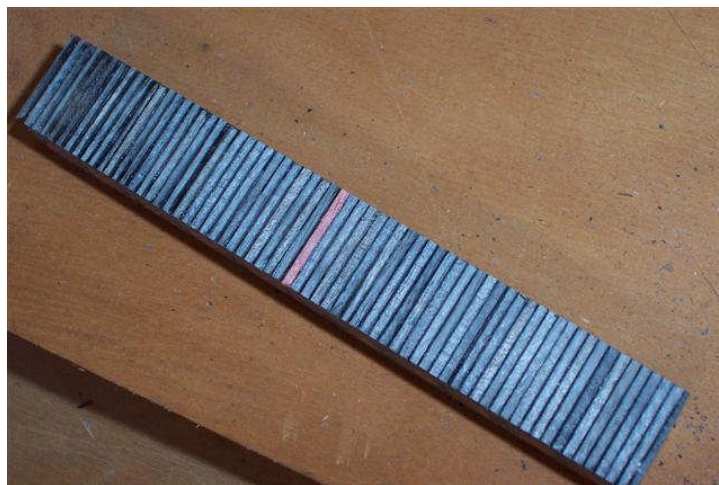


Removing the “sacrificial board” off the bottom.



Here it is, all cleaned up!

If you notice the pattern of the blank is off center. That is because I didn't notice the fact that there was an even number of rows across the blank (10). The fix is easy and at this point I am not sure if it is necessary but because I have not worked with a blank like this before I am going to err on the side of caution



I am not concerned about the voids at this time, That's why God invented CA



Since I am going to drill this blank with the Beall Collet I want to make sure I can turn this to the largest size my collet can hold somewhere around  $\frac{3}{4}$ " or under. I am adding scrap stock that may or may not get turned off until its' drilled.



You can never have enough Ca glue





I also added some scrap to the ends .I am not sure of the hardness of the pieces where the live center and the “Steb” center will go.



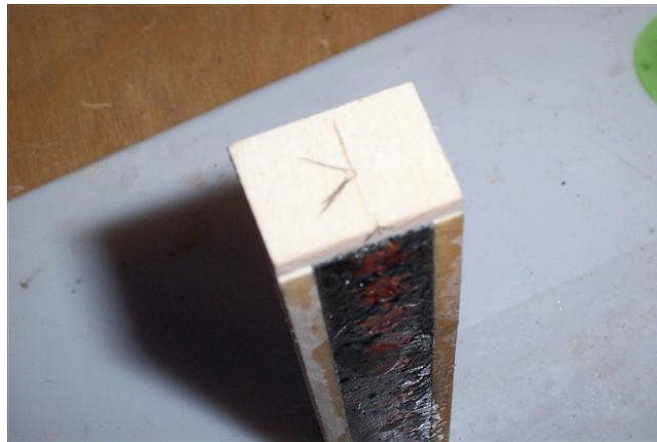
After making a blank with a design there are a few things I have learned to do that will help to insure I get the pattern somewhere near center. I try not to measure whenever possible, too much chance for error. I use pieces of key stock ( carry over from sheet metal layout work). This is a piece of 3/8ths key stock. I lay one edge on the center line and the out side mark will be the finished edge of the blank



The edge of the exacto knife represents where  $\frac{3}{8}$ ths off of center will be. Double that and the blank would be  $\frac{3}{4}$  wide. I like to have that much for drilling. The more mass around the hole the less chance of a blowout.



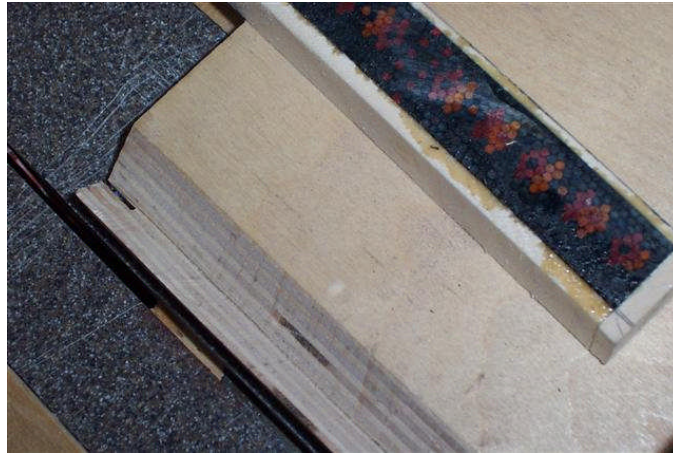
Though I try to get my blanks square I am more concerned the pattern is centered. The vertical line is centered in one direction(I normally use a knife kerf, pencils are too fat) The arrow is reminding me of an indentation I made for center.



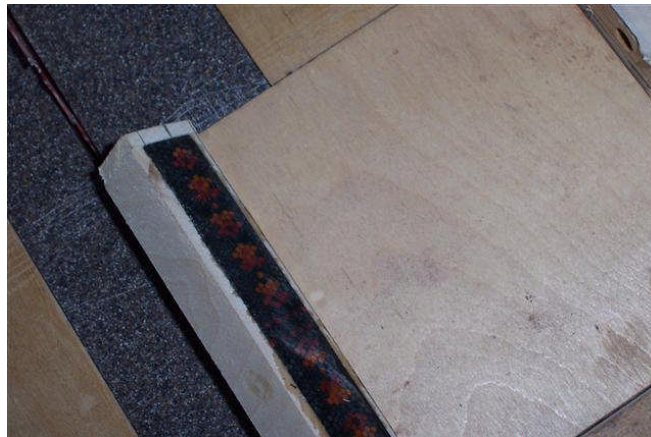
Cutting off the excess



V block to knock off the corners



Setting the block



Here it is, corners knocked off, centered on the lather to be turned round.



But first I am going to give it a shot of thin CA. I have never turned anything like this and am not taking any chances. I am envisioning some red Palm I turned cross cut once. I use foam to apply the CA.



Turning to my diameter of 3/4, I decided to add more CA, it can't hurt and it will probably help.



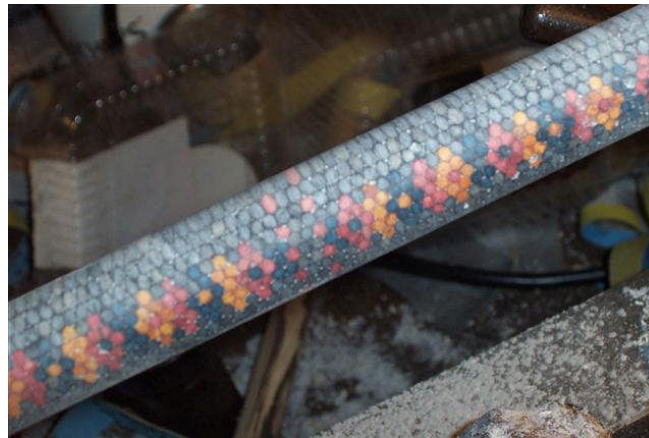
At this point I am using "poor mans accelerant". I found cigarette smoke will speed up the setting of the CA It was time for a smoke any way.



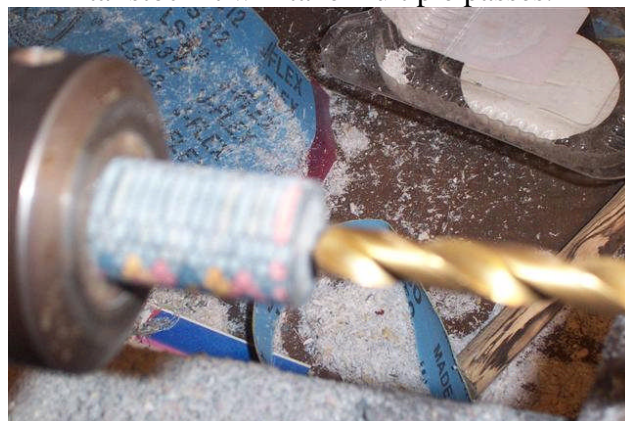
Remember the waste piece I glued on so I would hopefully wind up with the pattern on center?



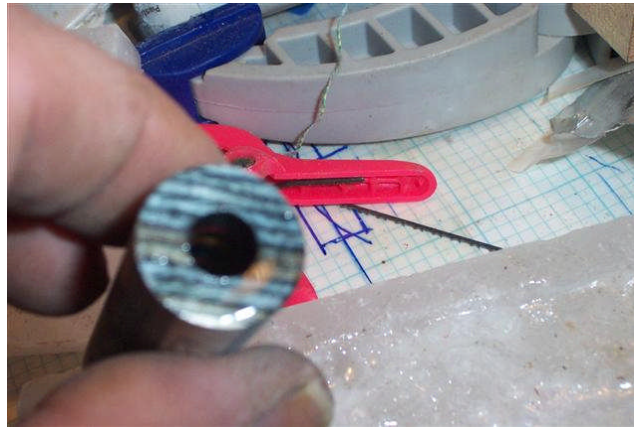
Turned and ready for drilling



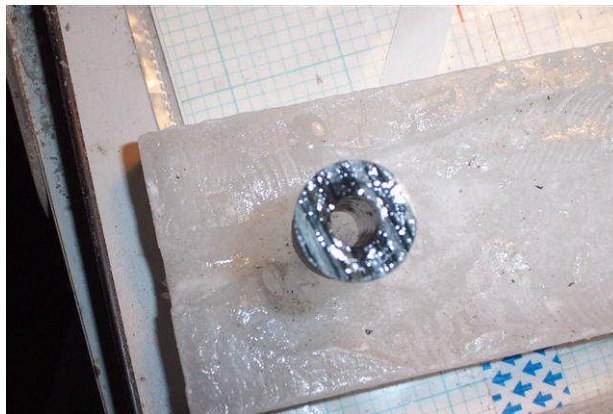
The next set of pictures show how I set the blank up for drilling and the steps I use in gluing the tubes. Though these are done normally as a matter of fact I do a few things to insure there are no mishaps while turning. At this point I have already cut the blank in half between the red centered “lines” I envisioned as the center of the pen. I also had a decision to make as to what style of pen would suit this blank. I normally would have used a slimline as it was a “proto-type” Based on how it turned round and not having any difficulties I decided to “go for it” and use a “parker” style kit. Use an HF chuck in the tailstock and drill at the slowest speed my lathe goes. I think its 500 rpm. Because of the travel of the tailstock it will take multiple passes.



This is the entry hole from the drill bit, I drizzle this CA down the center and revolve the blank to coat the inside. I do the same this from the other end, and do both blanks. This may seem like overkill but I have my reasons. I can visually inspect the outside of the blanks for glue coverage but I have no idea if I got good glue coverage INSIDE the blank. This is just another way I insure that The blank will remain sound while turning. The other reason is I feel I am “stabilizing the inside of the tube. Even using thick CA to glue my tubes in (which is supposed to be “gap filling”) I feel like I am gluing plastic to plastic as opposed to plastic to what might be a porous surface if I didn’t drizzle the inside of the tubes.



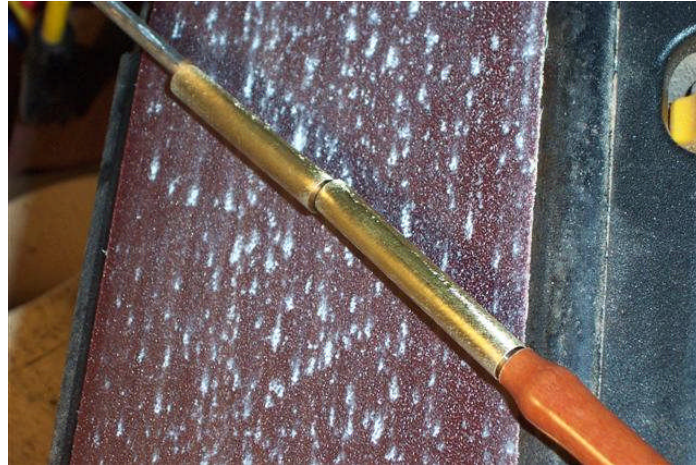
After I “drizzle” the CA I set the blank down on a pieces of paraffin wax. There usually is glue on the wax. I purposely dip the ends in the glue to seal them It may stick but snaps off easily. I proceed to the other half and do the same thing. After the glue has set a few minutes I give both ends of each blank a spritz of accelerant and clean the inside of the blank out with the same drill bit I used to drill the holes. I install the bit on the DP or the drive end of the lathe and holding the blank in my hand I run it up and down the bit once.



While the CA is setting up in the blanks I turn my attention to prepping the tubes. I ran across this method a long time ago on the net and do not know who to give credit to. Though some may think the purpose of scuffing the tubes is to remove oils from the manufacturing process I believe it is to create a rough surface for better glue adhesion. Those nooks and crannies allow the glue to “mechanically grip the tube along with a chemical adhesion. A cursory swipe with sand paper won’t do that. I have even read where some use 220 grit. If it works for you fine, but after the time I pit into the blanks I make, I want to do everything I can to insure I get good glue coverage and proper adhesion. With 220 grit the tubes feel more “polished” though they may not be “shiny”. What is pictured here is the tubes on a long handled screw driver with a clunker 7 mm pen blank as a spacer. I have an 80 HF belt on my bench sander. The

tubes are angled into the direction of the travel of the belt .If you put them the wrong direction you'll know why I hold them in the direction them I do. After I "scuff" in one direction I reverse the tubes on the screwdriver and repeat the process. It doesn't take long to get the hang of doing tubes this way. I have found the ideal way is to lower them onto the belt until they "bounce" as they spin.

The entire process takes less than 15 seconds.



Not the best picture but it does show the tubes fairly roughed up.



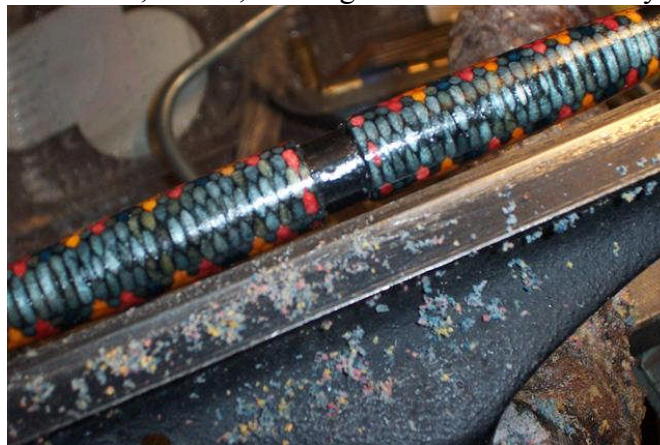
If you plug your tubes for gluing with base plate wax more power to you. I decided I wanted to try plugging my tubes on a Sunday afternoon. Kind of hard to try it if you didn't order any. I figured wax is wax. I use regular old paraffin. My method is to scrape a bar of wax with the edge of the tube for about 5 swipes. The tube will fill up fast. I place the end of the tube flush on a hard surface like a cutting board or a piece of tempered glass and tamp the wax with a rod or bolt that fits in the tube to pack the wax..

This method has an added benefit. After the wax has been packed in the tube it can be extruded out the end to act as a "depth indicator" when I go to glue my tubes in.



I was not able to take a picture of how I glue up my tubes and though it may seem self explanatory, at the risk of telling you something you already know how to do I will try to explain the method I use.

I cup the blank in the palm of my left hand(I am right handed) I start by holding the glue bottle in my right hand and a home made insertion tool with the tube already on it with the thumb and index finger of my left hand. Oh have I mentioned I only use CA glue for my tubes. Anyone who has switched from Ca because of blowouts did not do their prep work correctly. Using this method I simply DON'T have any blow outs so long as my tools are sharp. OK So now I have both the blank and the tube insertion tool in my left hand and the glue bottle in my right. When I first started turning pens my method was pretty much as described in a lot of information. Put glue on the tube and twist as I inserted in into the blank. What I noticed was the hole for the tube would act as a squeegee and I wound up with a lot of glue at the end I inserted the tube. I have started putting a bead of glue inside the hole as well as on the tube. My reasoning is that the plugged end of the tube will force the glue to the opposite end of the blank spreading the glue as it goes. As I stated earlier I simply have not had any blowouts using this method. So there you have it Here's the blank tubed, milled, bushings and on the lathe ready to be turned.



I can assure you it took longer to take these pictures and write and upload these descriptions than it took to make this blank and the pen it turned into. Each blank I make usually winds up as a building block in either technique or design for the next "oddball" idea I have. I have often said I don't do tutorials. Allow me to explain why I don't and why I decided to write this PICtutorial. I have a few reasons. Some are selfish, some may even be deemed noble. Regardless of how you may perceive me I am a rather insecure individual.

For me to write a tutorial on anything is the same thing as me standing on a soapbox and screaming "Look how great this is and see what I have done!" I have gotten a reputation that I did not seek. I just



want to make something that has not been done before and might wind up being “new and innovative” I love woodworking though I have never been a great flat work woodworker. I hate finishing, I hate sanding, I hate sharpening. I love to run wood through my table saw and see the resulting cut and how accurate I was and see the smoothness of the wood. I love to see different woods in combination with others (patterns) Making the blanks that I make allows me to use a minimum outlay in materials and still get to run my saws. There is also the idea of creating something that is unlike anything anyone else makes. I guess that might fall under the heading of new and innovative. I was once asked by a manger of a Woodcraft store, “Why can’t you make the pens the way they are supposed to be made, i.e. like the ones displayed in the catalogue?” I won’t bother finishing the conversation here but I don’t shop at that WC store very often any more and stayed out of it for a year. I sell my pens,. To get interest from a shop keeper I need to show them something they have never seen before, though no two pieces of wood are exactly alike, pens made of the same wood will look similar and there are a lot of people making pens with the visions of supporting their “habit” That is where selfishness comes in. With the advent of the internet, we are all in competition with each other. Can you give me a valid reason to give up any secrets I may have or why on earth I would tell you exactly how I do something as in making a particular kind of blank? If I show a picture and someone decides to make a pen like it, I may have just given them the ammunition to go out and shoot me with my own idea. I aint going to load the gun for them too. Here comes what I might call the noble reason. Each blank comes from an idea I gave birth to. Getting to the end result may take a lot of hours depending on the complexity of the design or the materials I envision making it with. Just coming up with the idea is usually the hardest part. If I go ahead and tell how I do something step by step I am robbing someone of the joy of discovery when the idea comes out as envisioned. Look what I made is not the same as look what I copied because I followed instructions. Lastly I have a conscience. Though I do not practice unsafe operations when I make a certain cut with a saw I am still vulnerable to getting hurt. I have no control of the wood working skills of anyone one but myself. If I don’t feel qualified to make a cut safely I try to find another way that is more safe. I make jigs to do these operations as safely as I can and the risk of injury is still possible. Lastly is time. It takes a long time to write what only takes a few minutes to do when you do that by instinct or experience.

O.K. the Nitty Gritty. (Not the Dirt Band)

Johnny asked me to write a tutorial for this site. I didn’t want to write an article about how I make a particular blank that I have already made. His announcement was there would be a “reality based PICtutorial”. My idea was to show step by step what I go through in making a blank but the twist was that I had no idea of the outcome. I would have fulfilled my end of the deal if after all the words and pictures the whole thing was a failure i.e. if it had blown up on the lathe. I would have been happy if the result was like Heraldo Rivera standing in front of Al Capones safe on live T.V. with nothing in it. This PICtutorial provided me a chance to give something to this site. This was the bonus.

