Woodworking tips

Hello Woodworkers. Since I have been banned from copying any articles from the net because of copyright. For my Woodworking Tips, you will have to settle for what I can write myself, with my own experience, and with what information I can find. I had an excellent article on sanding but had to discard it, but I still think this is a very important part of woodworking. I have just spent a week working on making two "Trundle Block Wagons" for our Great Granddaughters 6 and 9 months to help them to walk. There is surprising amount of work in them even if you have the machinery to make them. After you have finished what you can do with the machines, the next important thing is the hand sanding, and for children it is very essential to get a nice smooth finish. Unfortunately there are some woodworkers who don't put enough time in the finishing of their work, and I have been guilty of that, and have been told that it needs more sanding here etc.

I read that the terms "sanding" and "sandpaper" originated long ago, when ordinary sand or dust from brinks and stone were used to smooth and polish wood surfaces prior to finishing. Just imagine having to sand like that, this would be very tedious work.

Now we are fortunate to have sanding machines, and handheld sanders to take away lot of the hard work in sanding, plus modem abrasives of different types and grades. There are four types of abrasive papers; Flint, Aluminium Oxide, Garnet, and Silicon Carbide. The one which most woodworkers use is Aluminium Oxide as this is the most readily available. Aluminium Oxide; is a synthetic abrasive made from fusing bauxite in an electric furnace. It can be either red, brown, grey, or black in colour. There are three ways of grading abrasive papers; by name such as ***coarse, medium, fine,*** etc. by grit numbers; ***60, 80, 100*** etc. and by "aught" such as ***1/0, 4/0 7/0*** etc. I haven't heard of this method but it seems that it is not commonly used.

There is Cloth backing abrasive which is durable and flexible and are usually used for belt sanders.

There is also a choice of either open or closed coat paper.

Open Coat; papers are made with their abrasive material covering only 50% to 70% of the backing surface. Since the open areas between their abrasive particles will allow the dust and residue to fall out more easily with less "loading" they are best used for machine sanding, or for sanding resinous or gummy materials.

Closed Coat; papers have a solid covering of abrasive material. As a result, there is more cutting action. However **Closed Coat** paper will "load up" more quickly. For these reasons, **Closed Coat paper are best used for hand sanding.**

Selby West

Finishing Pens

By Don Ward, Red River Pens (www.redriverpens.com)

Note: Please be aware that some, if not all, finishes can cause reactions to those who are sensitive to them.

The topic of finishing pens comes up at least once a week on the pen forums with subjects such as these:

- *What is the best finish?*
- *What is a quick and durable finish?*
- *What is the most durable finish?*
- *Which finish is the easiest to apply?*
- *Is a sanding sealer necessary?*

Which finish is quick, easy, and durable? While those three qualities don't go together, I would say that none of the finishes I've tried are especially difficult. Some take more time than others and some are more durable than others, but I've not come across a finish that is especially problematic.

The quality of the final finish will be directly proportional to the surface preparation under that finish. A quality finish on a pen starts with sanding. Sanding should start with as fine a grit as possible. I turn pens with a skew leaving a very smooth surface on which to begin sanding. I often start with 320 grit sandpaper when possible. After sanding with the first grit, stop the lathe then clean the blank and apply a sanding sealer. Then, continue sanding through finer grits. I stop sanding at 600 grit. Stopping the lathe and sanding length-wise after each grit of sandpaper is also a good practice, as is cleaning the sanding dust off of the blank. Cleaning will remove dislodged grit and keep it from interfering with the finer grits. On open grain wood, I use a slurry made from thin CA and sanding dust. The CA slurry will be discussed in more detail later. After sanding with sandpaper sand with Micro Mesh tm, a cushioned abrasive, which leaves the wood surface as smooth as glass and ready for the chosen finish. More information about Micro Mesh tm, which is available from all pen turning suppliers as well as most woodturning suppliers, can be found at www.sisweb.com/micromesh. Purchasing full sheets and cutting them into smaller swatches is much more economical than purchasing the smaller swatches in sets. Micro Meshtm will last for several months and can be cleaned by placing it in the pockets of jeans or in a separate garment bag and tossing in the washing machine. It can also be used wet for wet sanding acrylics and plastics. One thing I've noticed pen turners doing (incorrectly) is assembling and handling pens as soon as the finish is applied. A newly finished pen should be given time to cool and cure before assembly and each finish has its own cure time. Learn what they are and respect that for a much better finish.

FINISHES FOR PENS

Shellac Based Friction Polish: The finish most of us started using is shellac-based friction polish. Most pen turners who make pens to give away (the recreational or casual pen turner) will continue to use shellac based friction polish. When used correctly, shellac-based friction polish produces a very stunning finish. However, all too often shellac friction polish fails to produce the finish we desire for two reasons: (1) the use of too much friction polish for each coat and/or (2) not applying enough pressure (friction) to create the heat needed to evaporate the solvent leaving the shellac behind. Ever wonder why it is called friction polish? Several coats can be applied but the pen blanks should not be handled until the final coat is completely cured. Waiting until the next day to assemble the new pen is best. A nice shellac-based friction polish finish can be ruined by handling the pen while the shellac is still warm and not fully cured. Shellac-based friction polish is not as durable or as hard as pure shellac. They have oils and solvents added that make them easy and quick to use, but reduce the durability of the finish. Remember the white rings we often find on older furniture? Those white rings were caused by moisture condensing on drinking glasses and reacting with the finish—the shellac finish. Shellac reacts with the moisture and oils from our hands and causes the finish to deteriorate and turn darker as the pens ages and is used.

Shellac-based friction polish is great for turnings that will not be handled. Several profess to like this patina and that's fine. Several of us do not, and that's fine also. Pure shellac is quite durable but takes lots of time to properly apply.

Lacquer: Lacquer is one of my favourite finishes. It is not a quick finish because lacquer takes a week or two or longer to fully cure and reach its full hardness. But once it does fully cure, lacquer can be buffed to a deep shine. Lacquer can be used in several ways: (1) full strength from the can; (2) diluted using lacquer thinner; (3) spray can; or (4) the dipping lacquer. Lacquer can be purchased in gloss, semi-gloss, or satin finish. But remember, lacquer must be allowed to Completely cure to its ultimate hardness before buffing. This may take several weeks depending on individual shop conditions. I prefer a 50-50 mix of gloss lacquer and lacquer thinner applied on the lathe with a clean cloth. I apply 6 or 7 coats and allow the pen to cure for two weeks before assembling and buffing. It is not a fast finish, but lacquer is a great finish for pens.

Plexiglass: After reading several threads on the pen turning forums, I think Plexiglass finish has potential. Basically, the Plexiglass is broken into small pieces, dissolved into acetone and applied to the pen. Smaller pieces will dissolve quicker. The solution needs to be stirred often to keep the pieces of Plexiglass from forming one large mound of Plexiglass reducing the total surface area of the Plexiglass and requiring more time for it to dissolve. Add more Plexiglass or acetone as needed to reach a solution that is close to thick syrup in consistency. The mix is applied to the pen using paper towels. Two or three coats are applied and when it dries, wet sanding seems to be the best way to sand. Wet sanding keeps down the heat and the finish doesn't melt. Caution: use only real Plexiglass. Other clear plastics like Lexan(tm) will not work. And, the best Plexiglass to use is the Cyro brand which is used by picture framers. Cyro brand Acrylite(tm) is the only sheet acrylic currently manufactured that is guaranteed not to yellow. Other brands of sheet acrylic will yellow, especially the Plexiglasstm brand. Scrap from picture framing shops can be bought cheaply or often will be given away, else it ends up in landfills

CA (cyanoacrylate) glue with or without Boiled Linseed Oil: As will soon be revealed, finishing pens with CA glue has become my finish of choice. And, I also use boiled linseed oil with the CA. Woodturners have been using CA glue for filling checks, cracks, and gaps on woodturnings. But, CA has become a popular finish for pens. I know some turners who use CA for a finish on small bowls and spindle turnings. CA is used with and without boiled linseed oil and results are quite comparable. I've seen excellent and not so good CA finishes where CA was used with boiled linseed oil as well as without the oil. Several excellent instructional articles have been posted on the pen turning forums outlining the finishing techniques for CA glue. Go to your favourite pen turning forum and you'll find those instructions where ever the forum stores articles and instructions. My CA instructions follow. I use either a sanding sealer or a slurry of CA and sanding dust after sanding with 320 sandpaper. Sanding through 600 grit sandpaper is followed with Micro Meshtm starting with 1500 and progressing through 12000. An application of Medium Walnut WATCO Danish oil follows. The Danish oil darkens the wood just a little and makes the grain very noticeable. The pen is now ready for the CA finish.
Here are the steps I use:

1. Tear a sheet of paper towel into six or seven strips and fold. Use a piece of paper towel folded several times, add three drops of boiled linseed oil and apply a light coat of boiled linseed oil to the spinning pen blanks, using a slow lathe speed. I use three drops for the entire pen with each coat of CA. I apply the finish at a much faster lathe speed now than I did when I first started learning. (Note: if you use too much oil the CA will gunk up and not be nice and smooth or the finish will appear to have some ghosting spots, like maybe the CA is not stuck to the wood.)

2. Hold the paper towel applicator from step 1 (which was used to apply the boiled linseed oil) against the bottom side of blank. Starting with the paper towel and CA bottle on same end of pen, add a thin layer of medium CA on top of blank as the blank spins while moving the CA and towel pad from one end of the pen to the other--one pass only--then add light pressure with the paper towel on the blank, constantly moving side-to-side until the CA is dry and the surface of the pen is smooth and slick. The CA will heat up some (the heat is from the CA curing, not the friction applied by the paper towel applicator.) Repeat process for second blank. The paper towel should be kept moving from end to end and the CA will cure to a bright shiny coating. After some practice, you will be able to determine how long to keep the applicator on the blank and moving. I think many who try this remove the applicator too soon and hence the high failure rate and frustration. Now, do the same to the other half of the pen.

3. I sometimes lightly sand between the CA layers but most of the time I don't...you will learn to tell when you should. I use very fine sandpaper (600 or 1000) or the 1500 Micromesh

4. Repeat step two...I do four coats of CA/boiled linseed oil.

5. After the final coat of CA/boiled linseed oil, sand with Micro Meshtm 1500 to 12000.

6. After sanding with Micromesh, I buff with Tripoli, white diamond and HUT Ultra Gloss Plastic Polish.

7. Next, I use McGuire's scratch and swirl remover auto polish and I use it as directed on the tube.

8. I use no wax or other top coats over the CA finish.

That's how it's done and the result is a great durable finish for pens. After using this finish for three years now, I get such a great looking finish after the final CA/boiled linseed oil application that I have stopped the sanding after the CA application and go straight to the buffing step. This has come with practice and continual tweaking of the application process. I often apply the CA to the paper towel applicator and then apply the CA to the spinning pen, but I think learning as I have outlined may produce quicker successful results. Deviations can be developed as you become comfortable with the CA/boiled linseed oil finishing process. Happy finishing....and, OH YEAH, you should keep a can of acetone close by. You will figure out why!
Do a good turn daily!

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For Sale on behalf of the Guild

Tanner lathe model FS100 $600 bare lathe or $800 with Chuck

Contact Doug 573 8399

Wood for sale;

Contact Mike McCarthy 575 2991

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