All the News that fits

Lake Charles Woodworkers Club, Inc. July 2018

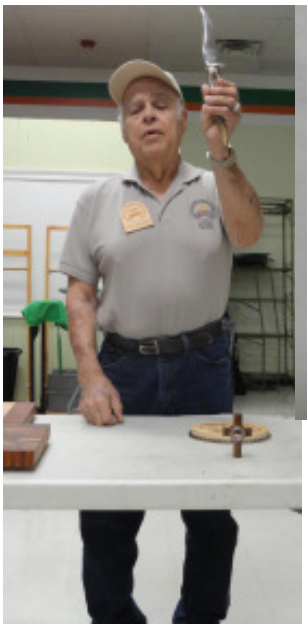
Mentoring Program - If you have a project, a problem in any woodworking area, these members have volenteered to help. Give them a call. Jeff Cormier: 582-3278; John Marcon: 478-0646; Gary Rock: 433-1679; Eltee Thibodeaux: 436-1997; Dick Trouth: 583-2683. Each have years of experience and knowledge.

June Meeting Highlights

Welcome new member Bill Bruning to the LCWW. We also had a couple of guests this month in both Glenn Ward, Sr. and Glenn Ward Jr. Someone mentioned that we could not tell who was who. Thanks to the great folks at Stines for hosting our meeting. Always thank the Stines folks as you check out. Update on John Marcon, who recently had hip surgery and Robbin Richard reported that he is recovering well.

We did not have a safety discussion this month. John Griffith did announce that he will do a patent process discussion in July and we look forward to that as at least one member has filed a patent for an invention.

For Show and Tell, Mr. Eltee Thibodeaux stepped up with a very nice Dad's Day scroll work as well as a wonderfully carved knife handle of deer horn. The blade was made by Coonie Newman and Eltee carefully carved the bone handle. The blade and handle were additionally engraved with images that Eltee did with his high speed engraving system that runs at up to 400K RPM. He uses diamond tipped engraver shafts that you can get used from your dentist.



J.W. Anderson brought a couple of his beautiful cutting boards on end grain.One was of endgrain mahogany and sweet gum and the other was of mahogany and hard pine (with a lovely figure). J.W. was walking out of the meeting and encountered one of the Assistant Managers of Stines. He sold one of the great cutting boards on the spot. J.W. mentioned that it took a lot of sand paper to get the cutting boards flat and smooth. J.W. uses mineral oil for the finish. You can use what is called "cutting board " oil but mineral oil is the same thing. Take a look at the article that follows regarding the history of abrasives.

Ray Kebodeaux had a very nice small bowl (perhaps a large cup) of magnolia with a top trim of a darker mahogany that was segmented. He used TreeWax as the finish and will do another coat at a later time. Ray also brought us a lovely jewelry box of mahogany with an internal tray that was carefully flocked. Ray discussed how he does flocking. Ray used an Incra I-Box for the nice box joints he used on the piece and said that it works very well. Ray also has an Incra HingeMaster tool that obviously works very well. Incra is an interesting compant and I bought my first table saw from that company that worked well until a major part failed.

Patrick LaPoint produced a lovely cross to display a small piece of St. Anthony of Padova's (aka Anthony of Lisbon) cape. Patrick made the item from cocobla wood.

Darren Hood discussed the finish he often uses and that is BriWax.

We have used BriWax many times for a great wax finish. In 1860, wood craftsmen around the world have used Briwax to protect, restore and recondition fine furniture and antiques to their original "patina" which could only be duplicated by laborious hand rubbing before the Briwax blend. as they say on their web site"The Old World Master Woodworking Craftsmen Seal is your guarantee of Genuine Quality Products." In my view it works well for a final finish.

Coming Up . . . Saturday, July 14 at 9:00 A.M. at the great Stines Store in Lake Charles on Nelson Road.

Abrasives

I was inspired by J.W. Anderson metioning that he had 'fun' using up considerable sandpaper on one of his latest beutiful cutting board end-grain projects.When we were kids, Summers meant random visits from the ice cream truck. We'd run up to the truck, swap sweaty coins for cool treats, and spend a few glorious minutes savoring our purchases. When it was over, we were left with only a wooden stick to show for it. So naturally, we would spend the next few hours rubbing our sticks on the curb, sharpening them as best we could so we could play a rollicking game of "Stab or Be Stabbed." It was intuitive to us that something hard and rough like a curb could wear away enough of the soft birch wood to fashion the shivs we needed to disappoint our mothers.

The "discovery" was nothing new, of course. Archeological records show that humans have been using abrasives for at least 12,000 years, using them to fashion everything from the spears they needed to feed themselves to early sculptures from tusk and bone. That sand could be used to smooth other materials must have been as intuitive to a paleolithic hunter walking barefoot on a beach looking at smooth stones as it was to us juvenile delinquents.

The first manufactured abrasives, as opposed to those simply borrowed from nature, were probably grindstones for processing grains into flour. Simple forms like saddle stones and querns were fashioned from easily worked sandstone, and allowed the relatively soft grains to be pulverized between the stones. Grindstones were also adapted for preparing pigments and crushing ores for smelting. One clever Egyptian craftsman even invented cylindrical grinding by using a grindstone mounted to a shaft to sharpen bronze implements.

These early grindstones are examples of bonded abrasives, one of the main types of abrasives. Bonded abrasives, whether natural or manufactured, are composite materials with abrasive grains cemented together with some kind of binder into a solid shape. In natural stones, the abrasive grains are stuck together through chemical and physical processes when the rock was formed. Manufactured bonded abrasives, like grinding wheels and cutting wheels, use abrasive grit mixed with a resin or sintered together.

Another major type of abrasive, coated abrasives, are exactly what they sound like: abrasive grains stuck to a backing of some sort. Sandpaper is the most common example, and has been in use since its invention in China in the 13th century in the form of crushed shells and sand held to paper with natural gum. Coated abrasives now run the gamut from modern sandpapers to the diamond-studded cutting wheels found on tile saws and concrete cutting tools.

But just what is it about an abrasive material that makes it work? Again, it's pretty intuitive: when one material is harder than another, the harder one can scratch the softer one. But there's complexity behind that simple observation. It's not sufficient to have a difference in hardness; while tool steel is harder than aluminum, rubbing the flat side of fresh tool blank against an aluminum plate won't do much. But press the corner of that blank against the aluminum, or better yet grind it into a proper cutting edge, and the aluminum will easily yield.

So an abrasive needs to both be harder than the intended substrate and present cutting edges to it. Look at a piece of sandpaper under a microscope and you'll see exactly how that happens: thousands of grains of more or less uniform size stud the surface in an even layer, with jagged edges projecting out of the surface. When rubbed against a piece of wood or other softer material, the projections cut into the surface, plowing tiny tracks and removing material. Larger grains take deeper and wider cuts and remove material faster, at the price of a rougher finish than smaller grains.

While some bonded and coated abrasive still use natural materials like garnet, volcanic pumice, feldspar, or even plain old beach sand, most abrasive manufacturers make their own synthetic abrasives. Aluminum oxide, smelted from bauxite ore by arc furnaces, is a major synthetic abrasive. Giant aluminum oxide ingots are broken down into smaller and smaller particles by crushers and passed through a series of screens to achieve a range of grain sizes.

When it comes time to create a bonded flexible abrasive like sandpaper, some interesting processes are used. First, many times, the backing for sandpaper isn't even paper. Cloth, fabric, even fiberglass screening are all used, depending on the application. Whatever backing is used, giant rolls of it are loaded into machines that coat it with bonding agents. The sticky backing then goes on to have the abrasive grit applied, but rather than sprinkling the grit down onto the backing, it's scattered upward onto the binder by a strong electrostatic field. This assures even distribution of the grains across the whole surface of the backing, and makes it easier to reuse grit that hasn't adhered.

In addition to bonded and coated abrasives, unmatrixed abrasive grits have a lot of applications too. Abrasive blasting (sandblasting), uses compressed air to propel abrasive grit to remove rust, paint, and contaminants from metals and other material. Water jet cutting is another form of abrasive blasting, where the abrasive is carried by high-pressure water with the intention of cutting through metal completely. Sometimes very finely ground abrasives are mixed into a paste for delicate polishing operations. Barry Humphus

Tools For Accuracy: Part Three

In part one we introduced tools for standardization. These are the measuring tools that you also use to verify and quality your other tools. Every woodworker should have a high-quality combination square at the very least. In part two, I covered basic measuring tools: rules, tapes, and squares. Certainly, these are the tools that get the biggest work out in woodworkers' shops. And, now it's time to dial it up a notch and cover tools for precision.

In this category, we're including calipers, micrometers and other testing equipment such as dial indicators. These are the tools that measure the thousands of an inch and up. Why would a woodworker need a precision tool for this level? The rule of thumb for engineers and machinists is that your testing and measuring instruments should be 10 times more precise than the smallest increment needed in your work. Outside of joinery, which needs a high level of precision, furniture makers should strive to work at an accuracy of 1/64" or better. Translated to fractions that would be .0156". So, following the rule of thumb of a measuring tool being 10 times the needed measurement, it would be nice to be able to measure to .001" to .002". Even if you decide that 1/32" is good enough that's .032" that means a measuring goal of .003".

Milling wood to thickness and joinery tolerances is first on my list. The final thickness matters as it's tied into joint making. No matter what method you use to produce your joinery, you're going to make to measure the joint or joint position with some kind of reference position on the side or the center of the board. If your board thicknesses are not precise from one board to another, your joint will move. For years, I tried to get my board thicknesses accurate to .010.

The difference between a tight and loose joint could be in the range of .003"-.030". On top of that, during joint making, you have to measure tenons and shoulders precisely. Small inlays need to be as tight as .002" or so. And, all of this is before you take into consideration the higher precision needs of digital woodworking tools, such as a CN like Eltee Thibodeaux likes to use.

As a practical matter, the tool for measuring this kind of accuracy is a caliper. These are usually found in three forms: a dial caliper, a digital readout caliper, and the traditional vernier caliper. They come in sizes from 4" to 12" and way beyond. The most common and useful size is 6". Starting from the last, the vernier caliper works by aligning marks between the vernier scales on the body and extension of the caliper. Once you the find two lines that align, you add that fraction to what you already know. I have a very nice Brown and Sharpe vernier caliper that's incredibly well made. But, I'll be the first to tell you that you better get a strong set of glasses or a magnifying glass to use one. As a result, using them is slow and inconvenient. Despite the extra effort in using them, if they're well made, they are very, very accurate. Even with the convenience of more modern alternatives, many long-time machinists swear by them.

Next up are dial calipers. With a rotary dial representing fractions of one or two full units, these are easy to use and can measure to the 1/1000". Because the display is visual, they are particularly useful if you're trying to compare differences between two measurements in a hurry. Your eye will quickly see changes. So, if you're running boards through a planer, you'll see those fractional changes by the rotation of the dial.

Finally, there's the modern version of the caliper that uses a digital display. These are very easy to use. Just look for number changes as you take measurements. Good ones easily measure accurately to 1 or 2 thousands of an inch. The best ones are accurate to .0005".

I happen to have added such on my Bosch table saw and it is amazing as an add-on with the purchase. The accuracy is close to .005 or better and using this gives me super accurate cuts, every time.

Digital calipers come in a couple of forms. Regular ones need to be pushed back to zero and reset before each measurement. The "Absolute Origin" or origin style popularized by Mitutoyo, remember their origin point and where they were last even if you turn them off. The Origin style calipers are wonderful, none that I can find offer auto shut off. So, if you leave the display on, they'll drain the battery quickly.

Now, we're getting into accuracy levels of .0001" or better. And, a reasonable question is why would a woodworker who works in a material that expands and contracts constantly need a tool with that level of precision? For most woodworkers, the answer is you don't need one to measure wood. This is a really a machinist tool used for setting up and measuring your digital woodworking tools and tooling. I've found a lot of variations in claimed bit sizes vs measured bit sizes.

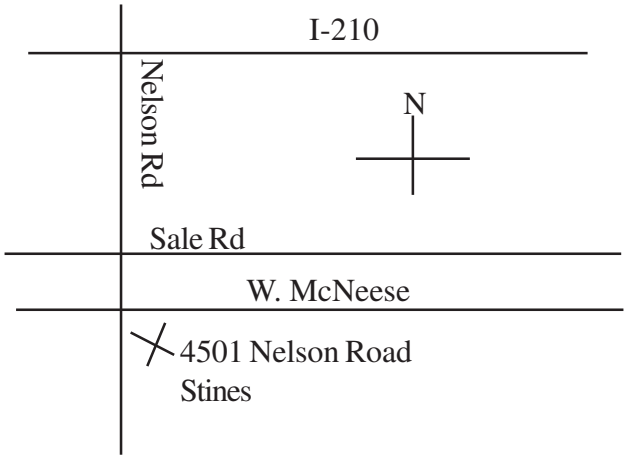
One more thing: a dial indicator, combined with some kind of holder that fits in a miter slot is the perfect tool for setting up a table saw fence and blade. With the probe resting against one side of the blade, then slide down to the other side of the blade you can see if the saw blade is square to the table.That way, you are super accurate. Barry Humphus

July Meeting Location

We have the wonderful opportunity to meet at the Stines Lake Charles kocation at 4501 Nelson Road Please enter the store and go to the back left in the store to the meeting room.

To get there go South on Nelson Road in Lake Charles going from I-10 or I-210 and tuen into the parking lot. Go to the back of the main entrance to the very back to the meeting room to find us.

Please take an opportunity to explore Stines before you leave to find the items for your shop or home that you may need. As always, thank the folks at Stines as you check out.



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