

# Turn North



The Monthly Newsletter of the Northland Woodturners

### www.northlandwoodturners-kc.com

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### Chapter Meetings:

First Thursday of every month, 7-9 pm.

Our ADDRESS: We're south of Zona Rosa just off NW Prairie View Rd., in the old Mid-Continent Library building on the top floor. Parking is on top of the hill off Tower Drive.

#### **Coming Attractions**

Newsletters on the Chapter Website: http://northlandwoodturners-kc.com Event Information: NEEDED: Fund raising Ideas.

> Next Meeting: September 3, 2020

> > On ZOOM

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From simple to intricate, it's time to look forward in the field of woodturning.

September is traditionally thought of as a time to begin something new. Woodturning can be that way as one looks for novel ideas to create or reproduce in a turned piece of wood. It may be something someone else has done and "*I want one just like it!*" or it could be an original idea.

New ideas are most welcome to the "crew" of *Northland Woodturners*. Last month saw only one shared idea for the newsletter but what a nice job it represents, even if the end use might seem a little unusual.

Harlan Henke sent pictures of two Cremation Urns he made and finished this past month. Note the lids on the left. He used PVC Pipe fittings and incorporated them into the tops as a way to fill and seal the contents.

Nice Job of inlay too, Harlan. Oak and Walnut were the woods used with a lacquer finish.



### Wood of The Month



Face grain – finished and unfinished





End Grain View (mag. 10X)

### Juglans nigra – American black walnut

Black walnut, Juglans nigra, also called, American black walnut and eastern black walnut, grows in every county of our state. Therefore, it is very familiar to us and is easily available. It is a fast growing tree that grows in well drained neutral soils and does not grow in groups but can be mixed with many other species of trees. It is one of the best known and valuable trees of the region. In fact, many woodworkers treat it as an exotic using it only for accent and smaller components in larger pieces. The wood is moderately heavy and very strong for its weight. It works and machines well and takes an excellent finish polishing to a high sheen or even a very pleasing soft luster when finished with just an oil finish.

Walnut turns easily and in fact some caution might be warranted to avoid cutting it too aggressively. Some turners can have a reaction to the sawdust and shavings in the form of skin and eye irritation although it is not common. If you work with fairly fresh or oily walnut it can turn your hands purple as do the hulls of the ripe nuts from the tree. Another "bad habit" black walnut has is poisoning trees and shrubs around it, particularly fruit trees as a result of a substance called juglone in its roots. By the same token, you should not use walnut sawdust and shavings as a mulch around other trees and flower beds or use it in your horse stable because it causes the hoofs of horses to rot. Walnut is a rich dark brown to purple in color and the sapwood of walnut is a creamy white but can be turned color to match the heartwood by steaming.

The American black walnut has been cultivated here in the United States since the 1600's. Its cousin, European walnut, Juglans regia, which is native to Eastern Europe has been cultivated for over 2000 years dating back to the ancient Greeks. European walnut is lighter and more variable in color and gets lighter with age while American walnut darkens with age. Another local cousin, Juglans cinerea, butternut is fairly common and is called 'white walnut'. It is a chestnut brown and resembles black walnut in many characteristics.

Walnut is highly prized and is used in gunstocks due to its light weight, strength and ability to absorb the recoil of the gun shot. It is an excellent cabinetry wood and is used in high end furniture, is an excellent carving wood and turning wood. Even the nuts of the walnut tree have many uses including the nutmeat as a savory treat, dyes from the husks, and the hulls are used in glues, cleaning solutions and make an excellent abrasive used in air blasting. Also, walnut oil is a very popular food safe finishing material.

There is as threat and danger to the walnut trees that bears caution. That is the thousand cankers disease (TCD). It has killed thousands of walnut trees and has been found in five eastern states and nine western states. Missouri has more walnut trees than any other state and could be seriously in danger. The walnut twig beetle, Pityophthorus juglandis and the fungus Geosmithia morbida are involved in the disease and causes a canker under the bark where the beetle infests and these cankers grow together and eventually kill the tree. Therefore, to avoid infecting walnut trees, DO NOT MOVE FIREWOOD. Please read more on this at; <u>Missouri Conservation on Thousand Cankers Diseases</u> and <u>TCD at Penn State Extension</u>.

You can read more about walnut at; Walnut on the Wood-Database or Walnut at Wikipedia

Written by – Mel Bryan

### **Program Highlights of the August ZOOM™ Meeting**

Eleven club members attended the August 2020 Zoom meeting August 6. Program personality was our own **Chip Siskey** talking on grinding wheels and abrasives. "Most people don't realize they might need specialized grinder wheels when they begin their adventure with woodturning. The first thing they think of is usually a lathe. Next, turning tools and wood. Maybe sharpening enters into the process at some point, but grinder wheels? Nobody thinks of them." (*taken from an article by* <sup>©</sup>*Bill Neddow, American Woodturner, April 2011, pp.23-27, publication of AAW, MN*) First off, Chip related his experiences with bench grinders and grinding wheels. Below is some of the info he related during his presentation, along with some sources of the info. Several pictures from the ZOOM<sup>TM</sup> screen shots are included here.

**Selecting an Appropriate Abrasive:** Abrasive materials do the cutting, and each type of abrasive offers a different balance of cost, durability, and performance. Let's start by looking at the four most common abrasive materials:

- Aluminum Oxide (ALOX): Versatile, inexpensive and durable, <u>aluminum oxide</u> is a good go-to abrasive for everyday jobs. Aluminum oxide will cut through steel, as well as softer metals like brass, annealed iron, and steel alloys. The material's primary drawback is its relatively slow cutting speed according to abrasive manufacturer Norton, at a microscopic level, aluminum oxide grit tends to wear into dull, rounded fragments, which have a limited bite.
- **Zirconia Alumina:** A mix of aluminum oxide and <u>zirconium oxide</u>, this abrasive is durable and fast. Zirconia is a naturally occurring mineral with extremely high fracture toughness, which produces <u>a</u> <u>high metal removal rate when cutting through hardened materials like tempered steel.</u> Zirconia also offers superior heat dissipation, which can be important when cutting through thick steel plate.
- Silicon Carbide: This super sharp abrasive makes quick work of soft materials. <u>Silicon carbide</u> naturally has a very sharp edged grain. The cutting material microscopically fractures as it wears, creating new razor-edged cutting faces throughout the wheel's life. Unfortunately, silicon is not as durable as other abrasives—it's best suited for soft metals like aluminum, iron, brass, and soft bronze.
- Ceramic Aluminum Oxide: Ceramic wheels are extremely durable and versatile. This abrasive is made by heating aluminum oxide in a kiln, a process known as sintering. According to ceramics manufacturer Syalons, the sintering process fuses the aluminum oxide into a crystalline structure, which increases the alumina's hardness and durability. Abrasive ceramics are designed to micro fracture in a controlled manner. The glass-like ceramic aluminum oxide grains continuously shatter as they cuts, keeping the cutting edge sharp.

Ceramic cutting wheels also have excellent refractory properties, which <u>according ceramics</u> <u>manufacturer Accuratus, makes them resistant to deformation under heat and stress.</u> And they aren't as affected by the buildup of material that can slow down aluminum cutting. Due to higher production costs, ceramic wheels were once reserved for detail work. But improvements in manufacturing have made this abrasive an increasingly popular choice for all purpose grinding and cut-off wheels.

• **Diamond:** The hardest mineral in the world, <u>diamond abrasives offer an unmatched combination of</u> <u>durability and cutting speed.</u> Super abrasive diamond cutting wheels use synthetic diamond crystals that are manufactured specifically for use in cutting applications. The shape and size of the diamond crystals in the wheel are tightly controlled for consistency. <u>https://www.grainger.com/know-how/industry/metalworking/kh-video-ask-the-experts-choose-the-</u> *right-type-of-grinding-wheel-for-the-job* 

Aluminum oxide grinding wheels are generally recommended for **grinding** materials of high tensile strength, such as stainless steel and tool steels but it can also be **used on** some high tensile **aluminum** and bronze alloys. **Silicon carbide** is a sharper and harder grain compared to **aluminum oxide**, but **silicon carbide** is less durable because it is brittle and has a **more** narrow shape that wears down at an increased rate. ... For finishing, nothing is **better** than **silicon carbide** because it's very forgiving.

Silicon carbide is an abrasive used for grinding gray iron, chilled iron, brass, soft bronze and aluminum, as well as stone, rubber and other non-ferrous materials. ... Grit size is the size of individual abrasive grains in the wheel. https://www.google.com/search?q=silicon+carbide+grinding+wheel&sa=X&ved=2ahUKEwjxybuZkLrrAhXsmq0K HVcSDdMO10IoB3oECA00CA&biw=1366&bih=626

**CBN** stands for **Cubic Boron Nitride**.



eft to Right, Optigrind, D Way Regular, D Way Radius edge, Woodcut, Raptor, Cuttermaster, NW Super Abra

There are two types. One is a mix of abrasive and a bonding agent that is applied to an aluminum hub in a layer that is about 3/16 inch thick. The other type is a machined steel hub with the abrasive material electroplated to the surface of the wheel. Both types are already balanced when you get them. This means they will spin true and will not wobble unless your grinder has a bent shaft, or an unbalanced wheel on the other side. With the matrix bond type, there is tiny wear factor involved as the matrix is not as hard as the abrasive materials. They do develop a tiny amount of run out over a year or so of heavy use.

There is no need to ever balance these wheels. Generally

when you order them, they will include a machined bushing to match the wheel with your grinder shaft, or are drilled to spec. No cheap plastic bushings.

There is another advantage in that there is never any risk of these wheels exploding. They will not chip or crack from tool dig-ins. You cannot crack them from over tightening the nut. If you drop them they will not break. The other factor is how long they last. The electroplated wheels do have a break in period, which depends on how much you use them. It took me about a month. They are very aggressive when brand new, with the 180 grit cutting faster than 120 grit. The 80 grit wheels cut a lot faster than standard 80 grit wheels. After they break in, they still cut faster, but the resulting bevel surface is more polished looking. The biggest difference between the two types is that the matrix wheels will leave a more shiny bevel surface, and do not cut as fast.

https://www.robohippy.net/featured-article

If your grinding fixture is solid and repeatable, you can sharpen your tools in one or two "swipes" across the CBN wheel; powered off) and then scrub the wheel surface with a toothbrush or steel brush by hand with the power off.

Now on to Chip's presentation...Chip's setup with the two grinders and the types of wheels installed are shown at



left. The CBN wheels are on the left grinder and Ceramic aluminum oxide wheels ae on the right. CBN wheels never need trueing. The Ceramic wheel stays much cooler during operation and wears much better than plain aluminum oxide wheels. The left wheel grit is 150(?) grit and the right wheel is 80 grit. Chip uses the right wheel for re-profiling a tool and to do other maintenance and "rough" work.

It too can be dressed the same way as the one on the left of the Rikon grinder. The left grinder was procured for a very low price at a garage sale. It is also important to "dress" the wheels to make the grinding face perfectly flat and true. One Way<sup>TM</sup> has an attachment that allows repeatable settings to keep your grinding wheel dressed. Chip demonstrated this during his presentation. (*see picture at right for* One Way<sup>TM</sup> *fixture*)





expensive" Rikon grinder at the left in this picture; check the Close-up on the far left. Chip then moved to sharpening tool edges and setups on the grinder to achieve the correct angles. Several fixtures were demonstrated as well as the tool rest that is a part of the grinder itself.

### Moving right along...

### **Edging Parting tools:**

For best results Chip recommends grinding the edge holding the parting tool flat on the tool rest. Grind one side, roll the tool over and check to see that the new edge is 90 degrees to the tool.



For the diamond parting tool, an adjustment of the tool rest is needed to allow for the change in thickness of the center to the outside edge.

A quick way to check your accuracy is to color the edges with a Sharpie<sup>™</sup> so the ground edge is more obvious.

**Edging Gouges**: First up was a Continental Gouge. Chip used a special fixture that holds the gouge in place to duplicate the original angle.

As he tightened the clamp in the right hand picture, he held up on the fixture to maintain the angle once tight,

**SAFETY:** All this setup is done with the grinder shut off. The gouge is rolled back and forth to renew the edge. This is done from center to the edge one direction at a time, then from the center to the other edge.

**Fingernail Grind on a Gouge**: This is a jig for positioning the Varigrind jig by One-Way for grinding a fingernail grind on a gouge. It has a hole bored with a Forstner bit 1-3/4" deep. The trough that the jig goes in is also approximately 1-3/4". This means you DON'T need to keep up with yet another



piece.

Here is a picture of the Varigrind Jig. Set the gouge in the jig and tighten the thumbwheel to hold the gouge in place. Then position the grinding jig to duplicate the angle on the end of the tool and tighten in place, again holding the main support while snugging the clamp.



To sharpen or touchup the bowl gouge: start in the center of the tool on the center of the wheel. roll first to one side, then back to the center and roll the other way. Bowl gouges are done the same way.

(see end of newsletter for a sample price for this fixture.)





Note on Chip's One-Way gouge jig the lines he has scribed to denote the different angles for different gouge angles.

### **Edging Skew Chisels:**



Some turners like to put a hollow grind on the edge. One problem less metal at the edge tends to get dull quicker. One-Way<sup>™</sup> came up with a solution. Chip demoed the idea although he doesn't use it. It is

an arm that mounts on the fixture to hold the skew. Using the two side slots. the skew is ground on the face of the wheel.



A big No-No is trying to use the side of the wheel. The reason being the side "loads with metal particles, producing more heat, can't be dressed and ends up cracking the wheel. VERY DANGEROUS!!!



Chip's alternative to produce a flat edge is use a belt sander.

Visible is the tool rest that is set to the desired angle to produce the edge on the Skew.



Belt changes are easy to produce different

edge qualities. This particular belt sander is designed for wood-turners but any belt sander can be adapted to provide the needed results.

With the table set to give a  $25^{\circ}$  angle the rest is

straight-forward.

The picture on the left shows the relationship of

skew to belt and the right-hand picture shows the angle of the stop to insure the "skew" angle is correct.





To sharpen first one side then the other is held against the belt while the fixture slides left to right,

This is a close-up of the rest

adjustment Chip uses to set the angle for each different tool being sharpened on his Robert Sorby ProEdge Plus Sharpening<sup>™</sup> system.

 Taken from <a href="https://www.amazon.com/Sorby-ProEdge-Plus-Sharpening-System/dp/B0045CHAMK">https://www.amazon.com/Sorby-ProEdge-Plus-Sharpening-System/dp/B0045CHAMK</a>





From left to right, Chip also has a vee-groove attachment for sharpening the Roughing gouge on the belt sander. At the right the angle is 45° and the belt is running as Chip works from center to left then center to right rolling the gouge. Heat buildup is minimum and only a light touch-up is needed for most operations. The belt shown is a 600 grit belt. They are available from 600, 1200, and 3000 grit producing a polished shine similar to what a Tormec<sup>TM</sup> system would produce. Aluminum oxide, Zirconium, Ceramic and Diamond belts are available ranging from \$19.00 to \$190.00. All of these jigs and fixtures make the Robert Sorby<sup>TM</sup> system more expensive than the One-Way<sup>TM</sup> system.



Robert Sorby ProEdge Deluxe Sharpening System by Rockler

<u>\$524.99</u> Rockler Woodworking and Hardware



Rockler 600-Grit Trizact Sharpening Belt for ProEdge ... **\$21.99** Rockler Woodw.



Rockler 3000-Grit Trizact Sharpening Belt for ProEdge ... \$19.99 Rockler Woodw..



Sorby PEDIA ProEdge Diamond Abrasive Belt \$189.94 Hartville Tool A cool running diamond abrasive belt for Sorby's ProEdge Sharpening system.

Rockler Woodworking handles all the belts except the Diamond abrasive.

Chip also can sharpen his planer blades using this belt sander.



Another fixture/jig is used for fingernail grind on small spindle gouges similar to the operation of the One-Way<sup>™</sup> jig earlier on page 6 in this newsletter. The only downside is how much more tool sticks out and thus limiting the tool size that can be sharpened using the Robert Sorby<sup>™</sup> system.



Chip's preference, if starting over, would be the Robert Sorby<sup>TM</sup> system since the versatility is so wide. Having bought his system on E-Bay used and needing repair made it economical. To each his own, however. What may work best for one may not be as good for someone else, so shop and compare before investing. Space may also determine application. Thank you to Chip Siskey for a great presentation on sharpening lathe tools and associated sharpening systems.

### Wolverine Vari-Grind Attachment \$45.02 Amazon.com

A copy of Chip's presentation is available on DVD. If you want a copy LET Leland know.

Coming in the next few months: Your choice of program based on how YOU want to present.

2021 AAW Symposium Omaha, Nebraska July 15-18, 2021





This is also available from AAW. See their website.

Download this publication for more info, pictures and explanations of Chip's presentation. Go to https://www.woodturner.org/Woodturner/Resou rces/Information-/Sharpening/Woodturner/Resources/Safety-Materials/Sharpening-Turning-Tools.aspx?hkey=b906c020-d0c5-4240-a677c2ccb6d6e4f5

Sharpening

Turning Tools

Thanks to everyone who has helped with our plug orders in the past. We will be asking for help getting other projects to raise funds. All ideas are welcome along with samples.

The CLUB NEWSLETTER tab of the club website is at <a href="http://www.northlandwoodturners-kc.com/">http://www.northlandwoodturners-kc.com/</a>

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