

John Griffith, President  
Patrick LaPoint Treasurer

Officers and Directors

Barry Humphus, Editor, Eltee Thibodeaux  
Daren Hood, John Marcon, Rob Richard

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

### July Meeting Highlights

President John Griffith was out today for surgery and we understand this has been successful and is recovering well.

Patrick LaPoint was our leader this month and as he had a short notice, did not have a safety issue other than the be careful as you work in your shop and yard with plenty of water as this is the hot time of year. Make sure you get plenty of water as you go out to your shop or yard. It is easier to take up water before you go out than to have to go back when you are dehydrated later. As I go hiking in remote places from time to time, I always "water up" before each hike. You can always pee in the woods but getting your required fluids before you go is very important.

Patrick also gave us a breif review of Club finances. and we have some \$1,778 in our account. The cost for a meeting is about \$40 (\$15 for refreshments and \$25 for the Show and Tell Gift card from Stines).

J.W. Anderson reported that he attended a kids camp and both talked about and demonstrated wood working techniques. He said that there were at least 13 children attending his session.

Patrick also told about an nice Excel-based inshop inventory application and passed out examples. This is not restricted to your shop as it could be used to inventory your house hold as well to keep track of your interior property. In fact there are several of these on line for free.

Folks ask if we could ask Stines to bring in a tool vendore and Patrick said he would pass this on to John.

It was reported that Rockler has a new Houston area location. The new store is located at 21352 Kuykendahl, Spring, TX., 77379. This is north of Houston and on I45, take exit 70 on Texas 2029.

Eltee Thibodeaux started Show and Tell with a neat baseball holder and display frame for his grand

children and will finish it soon. Aaron Andrepont had a couple

of nice hexagonal planter boxes. He used a "bird mouth" router bit and glue up jig to form the bodies. To determine the angles for the joint, he uses the width of the boards divided by 2.4.

J.W. Anderson showed a recent cutting board from mahogany and finished with mineral oil though he said he was not completely happy with the resulting finish. David Webster used blades from a dead ceiling fan to create a unique form. He used the fan blades for wings, a baseball bat for the body and small pool balls for eyes to form a dragon fly. Really cool. David also showed off one of his beautiful break down pool cues and dis-



cussed the connector he uses to connect the parts. The cue was made from maple, inlaid osage orange and purple heart and finished with poly.

George Carr carved a thread spool with an inserted cloth cutter. George is now a certified chip carving instructor. George also handed out samples of a material he is experimenting with called EZBoard. The material is suitable for carving though you could also turn it for small items such as pen/pencil sets. The material is high density urathane. EZBoard folks use a density of 400 (basswood has a density of about 370 to 410 on the Janka Scale -- see the article on page 3). So the product should be good for both carving and turning.

J.W. Anderson won the S&T Stines gift card.

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## The Fastener

A philosopher once said "We shape our tools, and then our tools shape us," and well before we realized how many other creatures -- crows, elephants, dolphins and otters -- are handy with a stick or sea sponge. Clearly, the evolution of humans hinged on innovations like the bow and arrow, the chisel and the wheel. But sea otters open abalone shells with rocks, octopuses build homes with coconut shells. What actually defines our species is not the hammer or trowel, but the nail and screw. What defines humans is not the use of tools as much as what we fasten together. Fasteners thus become our dreams for the future.

The screw thread was invented in about 455 BC by Archytas of Tarentum (428 BC - 350 BC). Archytas is sometimes called the founder of mechanics and was a contemporary of Plato. One of the first applications of the screw principle was in presses for the extraction of oils from olives and juice from grapes. The oil presses in Pomeii were worked by the screw principle.

The construction of the screw thread depended upon the eye and skill of the craftsman. Advances on this occurred in the eighteenth century. Antoine Thiout, around 1750, introduced the innovation of equipping a lathe with a screw drive allowing the tool carriage to be moved longitudinally semi-automatically. Screws with fine pitches are essential in a wide variety of instruments - such as micrometers. To construct such a thread a lathe was essential. Jesse Ramsden in 1770 made the first satisfactory screw-cutting lathe. Using his lathes a long screw could be cut from a carefully cut small original. Precision screws allowed precision instruments to be made to allow the construction of steam engines and machines tools.

Screw threads for fasteners were cut by hand but increasing demands deemed it necessary from them to be factory made. J and W Wyatt patented such a system in 1760. The lack of thread standardisation made fastener interchangeability problematical. To overcome these problems Joseph Whitworth collected sample screws from a large number of British workshops and in 1841 proposed the Whitworth standard (55° pitch) and adopted for the U.K. in the 1860's.

William Sellers independently proposed another standard based upon a 60 degree thread form and various thread pitches for different diameters. This became adopted as the U.S. Standard and subsequently developed into the American Standard Coarse Series (NC) and the Fine Series (NF).

Around the same time metric thread standards were being adopted in continental Europe with a number of different thread flank angles being adopted. For example the German Loewenherz had a thread flank angle of 53 degrees 8

minutes and the Swiss Thury thread had an angle of 47.5 degrees. The standard international metric thread eventually evolved from German and French metric standards being based upon a 60 degree flank angle with flat crests and rounded roots.

In November 1948 the Unified thread was agreed upon by the UK, the US and Canada to be used as the single standard for all countries using inch units. In 1965 the British Standards Institution issued a policy statement requesting that organisations should regard the BSW, BSF and BA threads as obsolete. The first choice replacement for future designs was to be the ISO metric thread with the ISO inch (Unified) thread being the second choice.

We have many other fasteners these days including thermoplastic glue (Hot Melt Adhesives / glue sticks) were invented around 1940 by Procter & Gamble as a solution to water-based adhesives commonly used in packaging at that time failing in high humid climates, causing packages to fail and pop open.

Zip ties were invented by Marcus Logan, an engineer at the Thomas & Betts electrical company. He got the idea while touring a Boeing aircraft plant and seeing the beatup fingers operators whose job was to wire aircraft. Logan's design was first marketed as Ty-Rap in 1958 and the rest is history.

Rivets have been around as early as 3000 BC. They first appeared in Egypt, where wooden rivets were used to manufacture several types of tools. Later on, the wooden rivets were used as fasteners in Gaul (France) while it was under the rule of the Roman Empire. In the 7th and 8th centuries the Vikings installed planking on their boats using wooden rivets.

From 1840-1930 the use of rivets evolved, and so did the materials that could be fastened. Wooden constructions were widely used and joined with rivets, but the large thickness of parts being fastened resulted in structural disadvantages: for example the risk of rivets splitting made structures unreliable. Rivets, blind rivets, pop rivets, cold rivets, hot rivets, joining, fixing, riveting, metal work, DIY, wonkee donkee. At the start of the 19th century there was a breakthrough in the iron and steel industry which helped overcome the unreliability of wooden rivets. Wrought iron and steel, with their ductile behaviour, produced cross sections which provided strong fasteners for thick materials. This triggered and symbolised the start of a new era: the joining era. Ductile behaviour means the ability deform or in this case stretch the wrought iron and steel to produce metal rivets. A number of other methods have surfaced since then. However, rivets are still commonly used today to fasten materials together.

## The Janka Scale for Wood

The Janka scale rates the relative hardness of wood. The scale is mostly for the hardness of wood used in flooring but may be useful to you for other applications.

The higher the number the harder the wood. These ratings were determined using the Janka Hardness Test which measures the side hardness measure of the force required to embed a .444 inch steel ball to half its diameter into the wood. This is one of the best measures of the ability of wood species to withstand denting and wear. It is also a good indicator of how hard a species is to saw, screw or nail.

This should only be used as a general guide when comparing various species of wood flooring. Depending on where the wood is harvested the results may vary. Plank construction and finish are also important factors when determining the durability and ease of maintenance of any wood floor.

The Janka Hardness Scale rating has become the industry standard for determining whether a given wood is suitable for flooring material and other applications. Red Oak, which has a Janka rating of 1290, is the industry benchmark for comparing the relative hardness of different wood species.

The majority of hardwoods and many softwoods are durable enough to withstand normal flooring use - especially with proper installation and finishing. However, no matter the Janka rating, all wood will dent or mar with a hard enough impact.

The hardness of wood varies with the direction of the wood grain. Testing on the surface of a plank, perpendicular to the grain, is said to be of "side hardness". Testing the cut surface of a stump is called a test of "end hardness". Side hardness may be further divided into "radial hardness" and "tangential hardness", although the differences are minor and often neglected.

The results are stated in various ways, which can lead to confusion, especially when the actual units employed are often not attached. Overall, the resulting measure is always one of force. In the United States, the measurement is in pounds-force (lbf). In Sweden it is in kilograms-force (kgf), and in Australia, either in newtons (N) or kilonewtons (kN). This confusion is greatest when the results are treated as units, for example "660 Janka" could be in newtons, lbf or kilo-newtons.

The Janka scale is useful to a variety of different wood projects. For example, if you are a carver, you may want to select woods in the 600 to 300 Janka scale. Turners may want to look at the 1,000 to 600 range. Furniture or other

need for durable wood may want to see woods at most anything above 1,000 lbf. The entire range is large going from balsa at less than 75 lbf to a wood I've never heard of called Australian Buloke at over 5,000 lbf.

Thanks to George Carr, who sent me a link that shows in pounds-force (US) as a chart.

See: <https://goo.gl/images/DyfdWG>. An even larger list is found at: [https://en.wikipedia.org/wiki/Janka\\_hardness\\_test](https://en.wikipedia.org/wiki/Janka_hardness_test)  
Barry Humphus

## The Fear of Sharpening

Sharp tools are essential to doing good work, but when I was getting into woodworking, I didn't really know where to start. I was scared of ruining chisels and planes. I didn't use chisels and planes much because they were doing more harm than good (because they never were sharp enough). That fear went away once I read a lot and practiced what I learned.

Popular Woodworking has just published a new book by Ron Hock titled *The Perfect Edge* that is well worth reading. The book takes you through sharpening from the beginning, making no assumptions about what you already know (very helpful for beginners). The book covers everything from basic metallurgy to sharpening a basic hand tool kit and everything in between. You will learn something new every time you open the book. The biggest takeaway, though, is that sharpening is skill, just like cutting dovetails or applying finish. Use the sharpening supplies you have and practice until you're able to sharpen consistently. You'll learn the difference between sharp enough and not sharp as you go.

A few years back, Popular Woodworking shot a video with Hock that shows a lot of the info in the book on camera, and it's fascinating – like a Mr. Wizard or Bill Nye for woodworkers. Seeing precisely how he tempers steel (with a torch and peanut oil!) to demonstrating different sharpening abrasives to getting a glimpse of his very skilled hands sharpening – it really made the book come to life. Of course, though, the video can't go quite as in-depth as the book does. The book is a bit easier to reference at the bench.

Every woodworker either has or will face the task of sharpening as a part of their hobby or occupation on a nearly daily basis. Some will choose the simplest method to sharpen their tools, while others will look for the superior method for an unparalleled edge. This book includes information to help the simply curious to the seriously involved woodworker, including: what steel is; how it works for us and how to bend and shape it to our needs. *The Perfect Edge* along with a free download of the video is available at <https://www.shopwoodworking.com> for \$29.99.

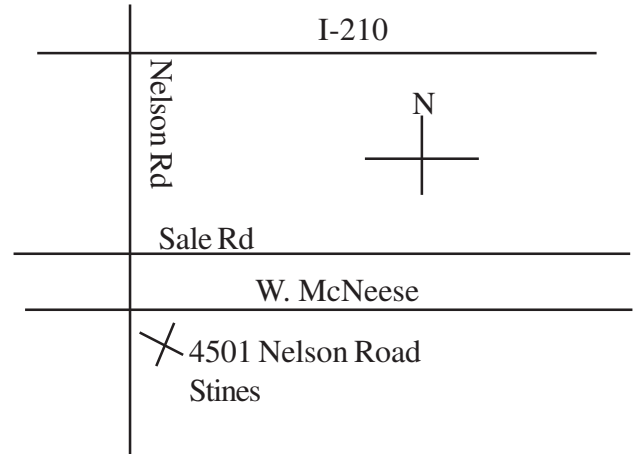


### August Meeting Location

We have the wonderful opportunity to meet at the Stines Lake Charles location at 4501 Nelson Road. Please enter the store and go to the back left in the store to the meeting room. The meeting starts at 9:00 A.M. on August 11.

To get there go South on Nelson Road in Lake Charles going from I-10 or I-210 and turn 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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