All the News that fits

Lake Charles Woodworkers Club, Inc. February 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; George Kuffel: 478-2707; John Marcon: 478-0646; Gary Rock: 433-1679; Eltee Thibodeaux: 436-1997; Dick Trouth: 583-2683. Each have years of experience and knowledge.

January Meeting Highlights

The great folks at Stine's hosted our meeting this month. Be sure to thank them as you check out.

John Griffith started us off this month by showing one of a couple of electric guitar projects. He used the classic Gibson ES 339 body style and Gibson electronics to construct this hollow bodied electric. The guitar is built of maple and bass wood plus some figured maple for it's good looks as wella ebony for the neck. John described the difficulty mounting the electronics inside the body. He also showed off one of the many jibs he has constructed to form the shape of the side body. For finish, John used water soluable dye plus many coats of lacquer. The bulk of the cost fr the unit was from the electronics ($600) while the wood ($150) was much cheaper. John mentioned that his next luthier project will be a mandolin.

Ray Kebodeaux brought us what he called a scrap box but it looked very professionally made. He had accumulated lost of small scraps for time and decided to put them to good use by creating this small box that included poplar, maple, and mahogany. He also included wooden hinges that relly made the object stand out with a poly finish.

George Carr showed a couple of nicely carved boxes. He purchases the boxes already made and adds his own skill with his diamond shaped carving blades. Glen Ward brought a sample of some child toys he has made using low cost pine with purchased wheels finished with stain and poly.

Steve McCorquoldale has access to such wonderful wood and he has a great eye for beautiful figure. His latest project included a thick pecan block table with hair pin iron legs. He used epoxy mixed with graphite to fill in a few large cracks in the surface and finished the table with "Tree Wax" (carnuba wax). Steve did a ring count and determined that the tree started it's life in the 1860s.

Patrick LaPoint showed off his first turning, a small bowl of pecan. He said that he is enjoying the learning process of turning. He used wipe-on poly for the finish. Patrick is also looking for a source of small aluminum hinges for a repair of an old sweet little box.

Robert Pertuit demonstrated an interesting technique to determine segmented bowl thickness for the billets you may construct to do this. He experiemented with cardboard in multiple layers. Barry Humphus mentioned that there are some large power tools still available from George Kuffel's shop. These include a table saw, 6 inch jointer, radial arm saw and a thinkness planer. He also discovered a brand new Ryobi spinal sander still in its box. He is slowly going through the hand and small power tool collection and will send out a list of clamps, hand planes and small power tools shortly.

Be A Continuing Member

We certainly hope that you want to be a continuing member of the Lake Charles Woodworkers Club. What we do each month is to provide you with woodworking information, ideas, assistance and help in your avocation. To do this, we need your help in the form of a small contribution to our efforts. The only thing you need to do is pay just $20 for a family membership. See Treasurer Patrick LaPoint to pay or mail your $20 check to Treasurer, 116 E. Thomas St., Sulphur, LA 70663.

Coming Up. . . Saturday, Feb 10, 2018 at 9:00 A.M at the Stines Store on Nelson Rd. in Lake Charles.

The Screw

They hold together everything from the most delicate watch to the largest bridge. The world is literally kept from coming apart by screws and bolts, and yet we don't often give a thought to these mechanisms. Part of that is probably because we've gotten so good at making them that they're seen as cheap commodities, but the physics and engineering behind the screw thread is interesting stuff. I understand this as I love to use screws but sometimes, just a nail or two will work better.

We all likely remember an early science lesson wherein the basic building blocks of all mechanisms laid out. The simple machines are mechanisms that use an applied force to do work, such as the inclined plane, the lever, and the pulley. For instance, an inclined plane, in the form of a splitting wedge, directs the force of blows against its flat face into a chunk of wood, forcing the wood apart.

Screw threads are another simple machine, and can be thought of as a long, gently sloped inclined plane wrapped around a cylinder. Cut a long right triangle out of paper, wrap it around a pencil starting at the big end, and the hypotenuse forms a helical ramp that looks just like a thread. Of course, for a screw thread to do any work, it has to project out more than the thickness of a piece of paper, and the shape of the projection determines the mechanical properties of the screw.

The most common thread profile is the simple V thread, with opposing faces of the thread forming an angle of 60°. This thread angle is a compromise that balances the efficiency, wear rate, strength, and most importantly, the friction of the threads. Along with the pitch, or number of threads per unit length, thread friction contributes to the self-locking, or "non-overhauling" property of most screw threads. Self-locking threads easily convert a rotational force to an axial force, but not the other way around. It's easy to see this property in action — a nut spins easily on a screw with finger pressure, but push the nut as hard as you can along the long axis of the screw and the screw will not start spinning. Self-locking keeps tools like screw jacks from unwinding under load.

Screw thread profiles can be modified from the standard V profile for better performance under different loads. The Acme profile, a trapezoidal shape with faces forming an included angle of 29° and with large flat crests and roots, is particularly suited to high-load applications like vises and clamps. It's also found in lead screws such as those used in linear actuators found in everything from DVD players to CNC machines. The Acme profile is also found in the lead screws of most metal lathes because it works well with split nuts. Split nuts are just what they sound like — an internally threaded element that has been split lengthwise and can be opened and closed around a lead screw. This is used to advantage in thread cutting operations, which the split nut closes around the lead screw at the start of thread cutting and opens at the end of the cut, starting and stopping the movement of the cutting tool against the work piece in repeatable locations. For precision threads and low-volume production, cut threads are common. Cut threads are produced in either a lathe or a CNC machine by removing material to form the thread profile, either with a thread cutting tool translated lengthwise against a rotating work piece, or with a tap (for internal threads) or a die (for external threads).

Cutting threads is time-consuming, though, so for mass production, external threads are generally formed with a rolling operation. A forged blank is clamped tightly between a pair of grooved dies, one of which is stationary. The opposing die moves perpendicular to the long axis on the blank, pressing the thread profile into it. Since no material is removed from the blank and because the material is work hardened, rolled threads can be stronger than cut threads. The rolling process is also automation-friendly, and rolling machines can produce thousands of parts per minute.

The internal threads of nuts don't lend themselves to rolling, so most mass-produced nuts are formed with a hot forging process. Hot slugs of metal are struck by dies that form the head profile and punch the center hole. Later, the cooled blanks are sent to a tapping machine which cuts the internal threads using a tap. There's much more to screw threads than this quick tour, of course. The simplicity of screw threads and the ubiquity of threaded fasteners belie the physics behind these mechanisms, but understanding the basics is a great place to start. Barry Humphus.

The Plane

Hand planes come in a bewildering variety of sizes. Why there are so many is not a mystery. By dividing the field into four groups, in order of size: block planes, smoothing planes, jack planes, and leveling planes, you will better understand their differences. I'll show you what the planes in each group are used for, and recommend two different starter sets.

Each group best serves a particular purpose. Smoothing planes, for example, are specifically designed to make wood as smooth as silk, ready for a finish. In general, length is the key to understanding a group. Picking a plane at random, you could use it for most any task, but pick a plane that's the correct length and you'll get the job done much faster, with better results.

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The Plane continues

Block planes are often associated with carpenters and do-it-yourselfers because they're inexpensive and small enough to fit in a toolbox or on a tool belt. They have important roles in the woodshop, too. A high quality block plane can do amazing work, and may become one of your favorite tools.

Standard-angle block planes are the most common. Their blades are bedded at about 20 degrees, with the bevel facing up. If the blade is sharpened at 25 degrees, its effective cutting angle is 45 degrees, which is similar to larger planes. In a low angle block plane, the blade is bedded at about 12 degrees, resulting in a much lower cutting angle. Pocket-sized planes have a standard bedding angle; what distinguishes these planes is their ultra-small size and light-weight.

Block planes are well-suited for planing end grain or for fitting drawers and doors, where part of the assembly is end grain. Planing end grain requires more force than planing face grain and puts more stress on the blade. Block plane blades chatter less because their bevels face up, not down, as is the case with most larger planes. Bevel up, the blade's tip has additional support from the plane's body. Planing end grain using a low-angle block plane requires less force than using a standard-angle block plane.

A smoothing plane is a serious hand-tool user's best friend. Set to cut a tissue-thin shaving, it can make a board feel smooth as silk. The wood's grain will pop in a way that you can't achieve through sanding alone.

The No. 4 size is the type most commonly used, although the larger No. 4-1/2 is gaining in popularity. The 4-1/2 is heavier than the 4, and that added mass makes it easier to maintain momentum while planing difficult woods. A No. 4 blade is 2-in. wide, while a No. 4-1/2 blade is 2-3/8-in. wide. A No. 3 smoothing plane is lighter and narrower than a No. 4. It's perfect for a user with less muscle power because its shavings are narrower. The blade of a No. 3 is 1-3/4-in. wide.

Smoothing planes prepare boards for finishing. Their relatively short length makes them ideal for planing a wide board or a glued-up top because they can follow slight irregularities in a board's surface and still make a long, continuous thin shaving, the gold standard in smoothing work. Longer planes require a board to be flatter in order to make continuous shavings (flatter than need be, quite often), so these planes are less practical to use in preparing wood for finishing. Fine-tuning a smoothing plane can really pay off: on many woods, you can make a surface so smooth that little or no scraping or sanding is required.

"He's a jack of all trades, but master of none." That expression describes a jack plane and helps explain the origin of its name. A jack plane is longer than a smoothing plane, so it's not as efficient in smoothing a large top because it takes more strokes to cut down to the low spots. It's shorter than a leveling plane, so it's more difficult to use in making an edge straight or truing a large surface. But it can smooth or level reasonably well.

The classic jack plane is a No. 5. Its blade is 2 in. wide, the same as a No. 4, but its body is about 5 in. longer. A No. 5-1/2 is longer, wider, and heavier than a No. 5. Like a No. 4-1/2, this additional mass makes it easier to plane difficult woods. The No. 5-1/4 is shorter, narrower and lighter than a No. 5. It was designed for youngsters learning to work wood in shop classes, and is often referred to as a manual-training plane or a junior jack.

You can smooth or level with a jack plane–it just takes a bit longer than using a more specialized smoothing or leveling plane. If you sharpen a jack plane's blade with a pronounced curve, this tool is perfect for hogging off a lot of wood fast, in any situation. A jack plane is also useful for evening joints, such as a table leg and rail, because this operation combines both leveling and smoothing.

Leveling planes are long, wide, and heavy. They have two specific purposes: straightening edges and flattening large surfaces. Accuracy is the goal in both situations, and that requires a plane with a long, flat sole.

The leveling plane most often used these days is the No. 7, more commonly known as a jointer plane. As its name implies, a jointer is best suited for straightening edges prior to joining them together. A No. 6 plane is the same width as a No. 7, but about 4 in. shorter. The No. 6 is best suited for leveling the majority of a large surface. It's commonly known as a fore plane (because its used before a smoothing plane, which finishes the job) or a trying plane (because it makes a surface true and flat). A No. 8 plane is a behemoth: it's longer, wider, and heavier than a No. 7.

One plane, either a No. 6 or a No. 7, can be used for jointing and truing, although having both is ideal. If you have only one, it's best to have two blades. Jointing requires a blade that is sharpened dead straight across; truing is most efficiently done with a blade that's sharpened with a slight curve. A No. 8 is so large that it can be a bit unwieldy, but it's the perfect plane for jointing a long, wide edge, and useful for big jobs such as fitting an entryway door.

A No. 5 jack plane and a standard-angle block plane will serve you well in most situations. You'll find dozens of uses for the block plane, taking off a little bit here or there on your projects. With the jack, you can do everything a smaller or larger plane can do, such as straightening an edge, smoothing a surface, or evening up a joint. The job will just take a bit longer.

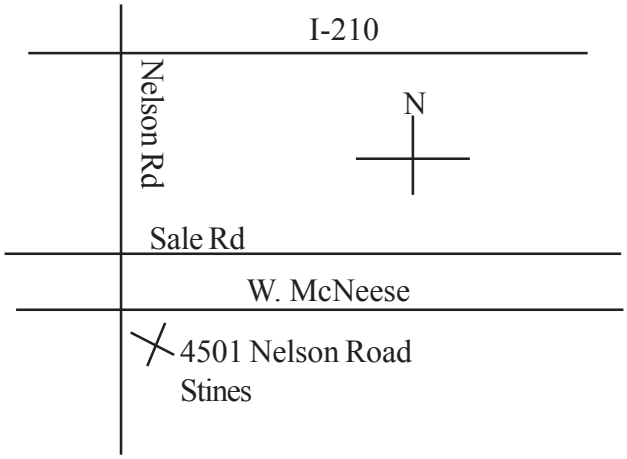
This is a good starter set for a woodworker who wants to really enjoy what hand planes can do. Each plane has a specialized purpose. The low angle block plane excels at cutting end grain; the leveling plane (which can be either a No. 6 or a No. 7) joints edges and flattens a large surface; the smoothing plane (either a No. 4 or a No. 4- 1/2) can make wood look so good that it hardly needs a finish. Barry Humphus

February 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.



Home Building Materials
Sulphur, La.

Stine

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