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**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; George Kuffel: 478-2707; John Marcon: 478-0646; Gary Rock: 433-1679; Eltee Thibodeaux: 436-1997; Dick Trough: 583-2683. Each have years of experience and knowledge.

### June Meeting Highlights

We presume that the June meeting at the Lake Charles Stine's went well. Despite my request for photos and notes from the meeting, I've received none so we have nothing to talk about here about the meeting. As always, we appreciate the great folks at Stine's for hosting our meetings.

#### Using Chisels

Back when I started doing woodworking, a chisel was something to be beaten with a large hammer. Back in the day, you bought a few chisels at a local hardware store and started using them without much regard for how sharp it might come from the store. That was before I learned how to properly sharpen and use these tools. Since then it's become apparent there are three distinct chisel operations that every woodworker should know: paring, light chopping and heavy mortise chopping.

There's a right way and a wrong way to make these cuts. This information below will show you how to use your chisel with the least amount of effort, damage to the chisel and damage to your work.

Before we begin, there are a couple things to mention about safety. One nice thing about chisels is you don't have to wear hearing protection. But there are safety issues. Wear safety glasses when chopping or mortising. A chisel breaking can send pieces of metal flying, possibly causing an eye injury.

Second, if you have any reservations about using the sharp end of a chisel while paring, consider using a Kevlar protective glove, which is routinely used by carvers. The glove will dull the impact of a slipped chisel and reduce your chance of injury. Finally, never use a chisel that's pointing toward your body. Always be mindful of the direction a chisel is going and where your hands are. This is the first thing to check before making a cut of any kind. The last thing you want to do on a Sunday afternoon is explain to an emergency room physician how you almost gave yourself a DIY appendectomy while working on a blanket chest.

At some time you'll have to do some chopping with a bench chisel. A half-blind dovetail joint is a good example of how to use chopping to remove wood. Other uses for chopping are defining a hinge mortise, low relief carving and through-dovetails. When chopping, you can use the same force you would use when mortising — just not as often. Bevel-edged bench chisels shouldn't be used for mortising. They aren't designed for this purpose. Mortise chisels have a steeper cutting angle ground on them: 30° compared to 25° for bench chisels. Their blades are thicker with square flat sides to stand up to a pounding. Bench chisels are thinner and beveled on the sides to get into tight spaces.

The one thing that amazes most beginning woodworkers is how seldom you really need to hit the chisel to get it to work right (the exception to this is, of course, mortising). Paring is a process of using the knife edge of a sharp chisel to slice small amounts of wood off. With a little technique and a sharp chisel, you can get into places inaccessible to a plane or knife. Paring is basically the finest work you can do with a chisel. Some examples of paring include:

Trimming the cheeks of a mortise to fit a tenon that's too large. In the absence of a shoulder plane, paring the tenon to fit the mortise. When you lay out a hinge mortise, after chopping the mortise sides, you basically have to pare the waste out to the edges of the hinge layout. If the space between dovetails is large enough (i.e. the pins) for a chisel, they can be pared, on their sides, to fit.

Before beginning, make sure your work is secured on your bench or in your vise. This will impart more of the force of your pushing into the work, thereby giving you more control of the cut. Paring requires pushing a chisel while it lies flat on a surface, slicing into the wood grain. This can be either with or across the grain. When you pare, you're

Coming Up . . . Saturday, July 8 at 9:00 A.M. at the Stines - Lake Charles

generally not taking off large amounts of wood. Just gently slicing little shavings off.

Most bench chisel chopping consists of light tapping of the chisel to define a cut line or remove a small amount of waste. Chopping is the most vigorous use that a bench chisel should see. Upon reading reviews of 20 different bench chisels, only about half stood up to repeated medium/heavy chopping in the testing by Popular Woodworking. If you plan on heavy use for your chisels, consult that review to get an idea of what to look for in a bench chisel. Before beginning, make sure your work has a direct connection with the ground. That is, place the work directly over the leg of a bench or table. This imparts all the force of the blow directly into the cut and not into flexing your bench's top.

One more thing. Did you ever wonder why sharpening experts tell you that your chisel face has to be flat? Well, if your face isn't flat, one of two things will occur. If the chisel face is bowed you'll start digging into the wood; if the chisel face is bellied, you'll need to lift the chisel to get it to start cutting.

Either condition requires lapping. I like to use a coarse diamond stone, and then work up to a couple of finer grits. There's lots of other lapping equipment out there, but one of the cheapest alternatives is to use dark gray wet sanding paper (start with 150 grit and move up gradually to 400 or 600) on a flat surface. A thick piece of glass does nicely. Just soak the paper in water before use. Lay it down on the flat surface and the surface tension of the water will adhere it to the surface fairly well. Rub the chisel until it is flat at least two-thirds of the way up. This might take a while. Consider it paying your dues before you get into the high-end chisel-use party. Get as fine a polish on your chisel face as you can to eliminate catches or nicks. It also helps to finely sand the edges of the chisel face. If you pinch your finger between a piece of wood and the edge of the chisel, you'll stand less chance of scissoring a cut on your hand.

### Shaping Your Irons

Roughing, flattening and smoothing lumber are fundamental hand tool woodworking skills. Before you can properly perform these tasks, you need to know how to shape your plane irons. The shape of the edge of a bench

plane iron across its width is determined by its function. For roughing, the edge of the iron should be cambered (curved along a shallow arc). For flattening and smoothing, the edge should be straight across. I use a medium-length #5 jack plane for roughing, a long #6 or #7 jointer plane for flattening, and a short #3 or #4 smoother plane for smoothing (this is the Stanley numbering system, but the names apply to any medium, long, and short planes). Roughing calls for fast stock removal, where the resulting surface is not the main concern. Flattening then cleans up that surface. Smoothing is the final touch to make the surface silky smooth.

Using a cambered iron means the jack plane can be set for a heavier, more aggressive cut to complete the roughing job faster. It takes a shaving that is thick in the center and thin at the edges, leaving a scalloped surface. At its heaviest, a roughing plane may be scooping out shavings that are more like wood chips, nearly 1/16" thick at the center.

Flattening and smoothing are much finer operations. For faster surface coverage, their irons are shaped wide and flat. However, the corners should be eased to avoid leaving plane tracks in overlapping passes (streaks in the wood left by sharp corners digging in).

New plane irons come from the factory ground straight across. This leaves it to the woodworker to shape the edge according to individual preference.

Cambering a new iron requires removing a fair amount of metal. It can be done completely by hand, but is time consuming. It's also a lot of wear on a sharpening stone. This is better done with a grinder, either hand-cranked or powered. Just be sure to quench the metal frequently to keep it cool and avoid damaging the temper.

The iron should be cambered to a radius of 8-12". It doesn't need to be a perfectly smooth curve, since this is for a roughing tool. Once shaped, maintain the curve thereafter as you sharpen it.

Ease the corners of jointer and smoother irons during sharpening, either rounding them or tapering them. This requires removing only a small amount of metal. To round

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the corners, tip the iron gently up on each corner and grind it in small circles on the sharpening stone until the corner has a smoothly rounded radius of 1/16-1/8". Repeat this through the sharpening grits.

To taper the corners, pitch the iron up a bit on each side, apply pressure just on that side, and grind just that section, about 1/2" wide. Taper each side back 1/32-1/16" from the edge. Repeat this through the sharpening grits.

Both variations of this will take shavings that are the same thickness through the flat center of the cut, then feather off at the sides. Rounded corners will take shavings that feather off sharply, tapered corners will take shavings that feather off more gradually. The surface left behind will show this feathering as well, so use overlapping passes of the flat portion of the iron to take them down to a uniform, flat surface.

#### Drilling With a Twist

To drill something, particularly something of wood and not tear out either side, you really need three type of twist drills in your collection.

The do-it-all twist bits are inexpensive and designed to punch through wood, metal, and plastics. To achieve this versatility, manufacturers typically grind their cutting tips to 118°. However, this shallow angle can allow the bit to wander on entry and blow out wood fibers on exit, so reserve twist bits for plastic, metal, and holes smaller than 1/8 inch in wood where the small size minimizes those tendencies.

For holes sized from 1/8 " to 1/2 ", instead select a brad-point bit. The center point of a brad-point bit prevents wandering on entry, while the sharp outer spurs shear the wood for far less tear-out.

When you need to drill holes larger than 1/2 ", move up to a Forstner bit. Like brad-point bits, Forstners feature a center guiding point and cut very clean holes. Multispur Forstner bits, add sawlike teeth to the rims, which cut more aggressively without sacrificing cut quality. When using this type of Forstner, slow the feed rate, and secure the workpiece with clamps.

Regardless of bit choice, any time you punch metal through wood, unsupported wood fibers on the back of the workpiece can tear out. So get in the practice of backing up your workpiece with scrap wood. The backing board traps the wood fibers around the exit point, preventing the bit from pushing out the last splinters. At the drill press, simply slip a scrap beneath the workpiece; for handheld drilling, clamp

the backer in place. If your bits lift fibers around the entry points, apply masking tape to the face of the workpiece before marking your layout lines and drilling.

If the location of a hole makes it difficult to clamp a backer board in place (such as when drilling cord-access holes in the back of an entertainment center), instead drill from both directions, for a hole with clean edges. You can do this easily by first drilling a 1/16" pilot hole centered where you want the larger hole. The small size of the pilot hole still allows the Forstner's spur to do its job.

By the way, both standard twist and brad-point drill bits can be sharpened with either a jig for your grinder or with a specialty tool such as the Drill Doctor. Forstner bits are different.

When you first bought a set of Forstner bits, they likely cut through wood like butter with thin shavings like a well tuned hand plane. Over time, they get dull and take much more force to get through your project with possibly more smoke than wood.

You can sharpen these easily with a round slip stone, a very fine triangle (slip stone or file) and a bit of wet/dry sand paper wrapped around a flat piece of wood such as a popsicle stick. There are two types of Forstner bits that include a knife edge single cutting rim type and a serated rim type. The easy way to sharpen the knife edge is to mount the slip stone in a drill press and just hand tighten the stone. Practice your movements before and only work on the factory ground edges and never the outside edges. Use the slowest speed of your drill press and don't take off much material. Try to be as close as possible to the original angle of the grind.

The serated bits obviously need to be sharpened by hand and try your best to follow the serations at the angle of the original angle grind.

The second step for either type is to hone the chipper. I used a 600 grit wet/dry piece of sand paper glued to a popsicle stick but this could also be done with a small flat diamond hone should you have one handy. What you need to do is flatten the back of the chipper rather than trying to follow the original angle of the top grind. This will result in a very sharp edge without removing much material. You could do a few careful strokes on the original grind jsut to remove any burr created from the honing.

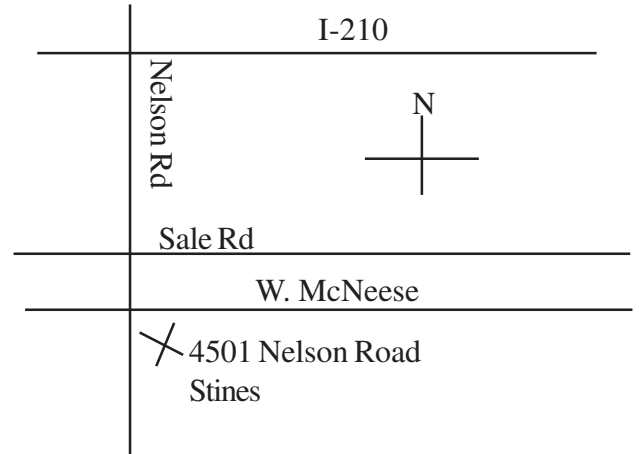
For all of these, just do a hone of the surface. You are not trying to reshape the bit, just give it a gentle hone so this would not very much time to do a complete set of Forstner bits. Its also important to clamp your bit while doing this. Last, give a few strokes to the center spire. Barry Humphus.

### July 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.

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.



July 2017