

Jeff Cormier, President  
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George Kuffel, John Marcon, Chuck Middleton

**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; Chuck Middleton: 625-3134; Gary Rock: 433-1679; Eltee Thibodeaux: 436-1997; Dick Trough: 583-2683. Each has years of experience and knowledge.

### February Meeting Highlights

John Marcon's Studio was our meeting place this month with John and others doing presentations. John has a couple of carving projects going but he didn't discuss these and perhaps we'll see them at a future meeting.

We had a couple of guests, Bill Fay and Walter Denton. Bill won the raffle - a half round table of cypress built by Jeff Cormier. Jeff's work was actually the prototype and he plans to build more of these - about 36" wide and 30 inches tall. He said that some of the future models will be of cherry. This one was unfinished and he later gave advise to Bill Fay about finishing it.

Show and Tell included a Pie Sonnier 1957 Chevy convertible of black walnut, maple, ebony and mahogany. Jay Leno would be proud. Pie also won the Bring It Back this month, a large trivet scroll-saw item donated by Aaron Andrepont.

Jim Couvillion showed off a really nice clock of gum plus an antique scroll saw attachment from Black and Decker that fits to an electric drill. These attachments were common in the 1950's.

Jeff Cormier described the half-round table construction including how he did the mortise and tenon joints. The rounded facia were constructed using luan 1/8th inch ply with a cypress facia of cypress, water soaked and fitted. Jeff also showed photos of a lenien press cabinet he built for a friend. Steve McCorquodale showed photos and described a sasafra door he built using the sliding latch of walnut he showed at the December meeting.

Ray Kebodeaux told about the construction of three bows he made. One was of osage with a snake skin laminate, one was of hickory and the other of American horn bean wood. All three were beautiful pieces of work. Gary Rock, our illustrious past President, brought three bowls including a small elm hollow, a mulberry shallow bowl and an unusual ambrosia maple bowl. Jimmy Everett brought three canes he had refinished. Jack Stegall showed of a wonderful Back-hoe - a labor of love he said.

Jeff mentioned that there are more than 60,000 table saw accidents reported each year of which 3,000 resulted in a loss of a limb. That is about an accident every 9 minutes

that results in an injury. Be very careful.

John Marcon started by presenting several first aid kits. You can get professional kits at Vallen Safety Supply in Westlake as well as ordinary household and auto kits at WalMart and SAM's. John showed a neat \$10 splinter removal device. You can get these at [www.asktooltalk.com](http://www.asktooltalk.com) for \$4 to \$10 plus shipping.

John's presentation involved describing the restoration of two wooden statues washed out of the Our Lady of the Sea church in Cameron during Hurricane Rita. Both statues were hand carved by the Italian firm of Demetz and probably cost thousands when purchased in the late 1950's after Hurricane Audry.

When found, from between 15 and 20 miles from their original locations, had suffered damage and John struggled to find restoration sources. John said that he contacted the Smithsonian and other sources for advise for the restoration of these precious objects. Over more than two years, the 61 inch tall statues were carefully cleaned, dried and restored, leaving the Rita damage as a reminder of the event as is custom for artistic restoration.

John also discussed chisel and gouge sharpening using European techniques learned when he went to a school on carving several years ago. John uses standard grinding systems, noting that you can sharpen chisels and gouges accurately using a standard grinder. He demonstrated the techniques using a grinder with an 80 grit wheel and buffing wheel.

Most grinds are between 20 and 35 degrees, depending on the use of the chisel or gouge, John suggested.

Dick Troth discussed sanding soft woods. For any sanding, don't skip grits was Dick's advise. Soft wood sanding can result in ridges that are difficult to remove with subsequent sanding. And don't over-sand. For cabinet projects, you don't need to sand more than 220 grit. For turnings, you may need to go higher, even up to 1,200 grit depending on what you want. Higher grits basically resolve in burnishing wood, not sanding

Coming Up . . . Saturday, 8 March 2008, 9:00 A.M. Studio of John Marcon with a presentation by Steve LeGrue of The Cutting Edge in Houston on finishing.

## Hollow Chisel Mortisers

The square chisel mortiser (also called hollow chisel mortiser), is similar to a drill press in many respects, and combines the cutting of a four-sided chisel with the action of a drill bit in the center. The bit clears out most of the material to be removed, and the chisel ensures the edges are straight and clean. This device was invented in 1874 by Robert and Ralph Greenlee (founders of the Greenlee Company who are still in business).

Hollow chisel mortisers have become very popular in home-based woodworking shops. Though relatively simple to use, there are setup and maintenance procedures that preserve their accuracy and maintain trouble-free operation. There are several products on the market including attachments to a drill press that work very well. While drill press attachments work well, you should consider these as occasional use devices. If you are doing a large number of hollow mortises for a project, a dedicated hollow mortising machine is preferable.

As always, follow manufacturer recommendations and instructions supplied with your machine. Pay particular attention to instructions related to the safe operation of your machinery.

Contamination of moving parts by sawdust and other debris must be controlled for the machine to operate properly. For maximum benefit, clean and lubricate the mortiser before making adjustments. Don't forget to clean the teeth of the gears that move the head up and down.

The power head of mortising machines travel up and down on some form of slide, keyway or a post, all designed to keep the bit traveling straight up and down accurately. Contamination of those sliding surfaces affects ease of use, accuracy and eventually, the life of the machine. Use a cheap nylon cleaning brush with a wooden handle to dislodge the dust.

In most cases, other moving parts can be cleaned with a rag or an old paintbrush. Stubborn contamination may require some kind of solvent, but make sure the material used is paint and plastic safe. In no case should caustic materials be used. After cleaning, dry the area completely.

While nearly any type of grease or clinging oil will lubricate these moving parts, consider dry graphite or Teflon-based products that dry after application. Dry lubricants do not attract or hold dust and may extend the periods between necessary cleanings. Short of these, use an acid free clinging lubricant such as Automatic Transmission Fluid.

The owner's manual should provide instructions on what parts need lubrication, what parts do not and may even suggest acceptable lubricants.

Adjusting the slides is one of the critical parts of setting this machine up for accurate operation.

The sliding mechanism on which the power head moves is usually adjustable so the owner can compensate for normal wear. Though set up at the factory, I always go over these adjustments on new machines to insure they are set as best as can be.

Following the recommendations of the manufacturer on adjustment procedures and the allowable tolerance is mandatory. The engineers who designed the machine consider the properties of the materials used to make these parts when calculating adjustment tolerances. This is not a good time to try to out-think the manufacturer. Stay within the guidelines to insure the best performance and longest life of the tool.

Checking the slider adjustment occasionally should be part of the machines maintenance, the frequency dependent on how much use the machine sees.

Make sure the chisel is square to the table or your projects may "lean" a little, all the time.

On mortisers with an attached table surface, checking its alignment to the chisel is also important. If the table is not square to the chisel, the mortises cut will be at an angle, transmitting that misalignment to the project. For drill press mortisers, squaring the drill press table to the drill press stem is mandatory before attaching the unit to the drill press.

Install one of the larger chisels in the motor head, aligning its flat sides with the front-to-back and side-to-side axis and then lower the chisel so it is close to the table surface. Place a good 90-degree square on the table surface; one leg flat on the table and the other leg against the flat chisel side. Look for gaps between the square and the chisel. Check this alignment on the left and right sides as well as the front. If there is a gap between the chisel and square, shim the table accordingly to bring the table into alignment with the chisel.

The combination of a square chisel preceded by a round drill requires a specific gap between the two for proper operation. Because chips are evacuated through a slot in the chisel housing, there must be sufficient space between the drill bit and the tip of the chisel for the chips to be carried up to the slot by the specially designed flutes on the drill.

Most manufacturers give a range of bit to chisel clearances, sometimes indicating the range of settings are meant to accommodate different woods. Unfortunately, they seldom describe what setting is for what type of wood.

The logical interpretation is that the greater bit to chisel clearance is for softer woods that produce larger chips and shavings. Hardwoods, which normally generate much finer chips when drilled, can use the smaller end of the tolerance range. While researching this story I cut mortises in every species of wood I could find and this bit to chisel concept seems to hold up.

In reality, most woodworkers use a bit to chisel setting in the middle of the range for all of their work. This one-setting-fits-all approach usually works, but remember this setting in case you encounter a problem with chip extraction in the future as it might be the cure.

While manufacturers sometimes provide instructions on how to attain this bit to chisel setting, they are often more complicated than need be. Enterprising woodworkers discov

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Mortising Machine Setup continues . . .

ered that American coinage provided an alternative that simplifies the set up task.

Locate the recommended bit to chisel clearance in the instructions that came with your mortiser, and then find a coin with a thickness that most closely matches that number.

Insert the chisel into its bushing and raise it up to the bushing face trapping the appropriate coin between the bushing and chisel face (see photos) before tightening the setscrew to secure the chisel. Insert the drill bit through the chisel and into the chuck, holding the tip of the bit fully up against the end of the chisel. Tighten the chuck to secure the bit. Loosen the chisel set screw, remove the coin and slide the chisel up, butting it against the bushing. Make sure the chip port in the chisel faces to the right or left, not front or back, before tightening the setscrew to secure the chisel housing.

You should now have the proper bit to chisel clearance for your machine.

For this operation, you can use the face of the fence itself, or place a piece of wood with parallel faces between the fence and chisel. Lower the chisel so the flat portions of its sides are at the fence level. Slide the fence forward until its face, or the wood in front of it, contacts the chisel. Loosen the chisel set screw and turn the chisel until the rear flat is flush against the fence or wood. Make sure the chip ejection port is facing to the right or left and that the chisel housing is butted against the bushing before tightening the setscrew.

When setting the depth of a mortise, remember that the drill bit precedes the chisel housing that actually cuts the square shape. The protrusion of the bit cuts indentations in the bottom of the mortise that serve a useful purpose. When a mortise and tenon are coated with glue and assembled, some of the glue is scraped from the sides and becomes trapped at the bottom of the mortise. The irregular bottom surface gives that glue somewhere to go.

When setting depth, you have to remember the bit protruding ahead of the chisel.

When setting the depth of cut for a mortise you have to consider the drill bit protrusion. The easiest is to draw a line representing the bottom of the tenon on the side of the material in which the mortise is being cut, place that piece on the mortiser bed and lower the chisel (not the drill bit) until it is slightly below the layout line and lock the depth stop rod (dedicated or drill press).

This setting allows the tenon to seat fully into the mortise while providing a small amount of room for excess glue.

There are two schools of thought regarding the expected life span of mortising chisels and bits. Some consider these pieces to be consumables, meant to be replaced when they become too dull for effective use. Others sharpen the chisels with specially designed stones (available from Lee Valley) that touch up the inner bevels, restoring their cutting

edge. Dremel also makes a wide variety of cone-shaped stones for their tools. A hard cone-shaped stone in a Dremel tool will quickly sharpen all the different sizes of mortising chisels and is much less costly than purchasing new ones.

The drill bits do not seem to lose their boring ability to any appreciable degree. The feed rate for cutting mortises is relatively slow which limits the wear and tear on the bits. However, they are fairly brittle and you can break one (as I have). Replacement bits are available from a wide variety of sources.

Whatever your choice, keeping the chisels in good condition is important to the performance of the mortising machine. Oddly, softer woods like pine will reveal dull chisels before most hardwoods. The softer wood tends to crush and bend when a dull chisel is pressed into it.

The inside of a mortise will not win any finish awards, but does make a very strong joint when all those little ridges dry into the glue.

Using a relatively small, square chisel usually leaves small ridges on the sides of the mortise. If the chisel is parallel to the fence, these ridges are usually very small. In addition, most woodworkers make a second pass through the mortise to "clean up" the bottom and make sure all of the material has been removed. This process cleans up the ridges as well.

Leaving these small ridges in the mortise has no affect on the strength of an otherwise properly fit mortise and tenon joint. Some even believe the ridges prevent scraping too much glue from the sides of the tenons and actually increases the strength of that bond.

Whether you use a dedicated hollow chisel mortiser or an attachment to a drill press, good woodworking equipment costs money. Taking the time to set up and care for machines properly does not take a lot of time but can save piles of money in the long run. *Derived and edited from newwooderker.com, Barry Humphus.*

### **Mortisers**

General International 5/8" Hollow Chisel Mortiser Model 75-050T M1. General International's 5/8" Hollow Chisel Mortiser is made with heavy-duty, precision-machined cast iron. About \$450.

Delta Bench Top Mortiser, Model 14-651 1/2HP, 120VAC 60 Hz., single phase induction 1725 rpm motor runs chisel bit sets from 1/4" to 1/2" (5/8" max dia. shank). About \$260

Jet Hollow Chisel Mortiser 1/2 hp, 1 phase, 115V motor. Heavy duty cast iron and steel construction. About \$250.

Delta Drill Press Motiser Attachment (fits almost all Delta Presses and many others. About \$165.

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