Queen Anne Dining Table

The Old Saw

Carving a basic shell

A visit with Garrett Hack

Turning chisels
Buying used tools
Getting a smooth finish
Coping through dovetails
Tool review
Ask this old saw!

Calendar

Jun 17 Summer Trip
   Rockport, ME
Jun 25-26 Wood Days
Jul 23 GSWT
Aug 5 Sunapee Setup
Aug 6-14 Sunapee Fair
Sept 17 Annual Meeting
   The Windsor Institute,
   Hampton, NH

Joinery Symposium brought together over 200 woodworkers from throughout New England to see and hear 13 demonstrators at Pinkerton Academy.

Photos by Jim Seroskie
**The State of Our Guild**

**Wow! Wasn’t that a terrific joinery symposium?**

I know that everybody reading this issue of *The Old Saw* didn’t have a chance to get to attend the Symposium, but an impressive number of you were able to make it along with visitors from around the area, and as far away as Texas.

For those who couldn’t be there, you will have to console yourself with the articles in *The Old Saw* and view the DVDs of the presentations. That’s right, we are moving from VHS tapes to DVDs and they look terrific!

The newsletter continues with the new look and expanded content as the steering committee has approved this for the coming year. You’ll continue to see terrific articles by some of the most accomplished woodworkers in the business, and expanded news coverage of Guild meetings and events.

The web site is looking great and a “members only section” will be coming shortly where you will be able to view the current issues of *The Old Saw*, as well as manage your membership information. Watch your e-mail and the web site in the near future for news on this new feature!

All of these things are possible for the Guild only because our members are willing to share their time, knowledge, experience, and talents with their fellow Guild members. At the symposium, thirteen experts took the time to prepare interesting presentations. Behind the scenes, volunteers organized the event, coordinated the presentations, secured the equipment, taped the presentations, manned the information tables, arranged for refreshments, etc. The videotape to DVD conversion is well underway, but requires tremendous effort by Peter Bloch to create the masters and make multiple copies. Many members have stepped up to write articles, report on meetings, and take pictures for *The Old Saw*, and Jim Seroskie is doing an outstanding job as editor and Syd Lorandeau handles the mailing. DJ Delorie keeps the website current and manages all of the membership information.

The steering committee meets on a regular basis and the Guild officers are working hard making sure that the Guild is in solid financial shape so that we can continue with the busy schedule of activities we have planned.

The health of an organization like ours can be measured in a number of ways. Financially we are in solid shape and we continue to watch our budget closely to insure it stays that way. Our membership numbers are strong – perhaps at an all time high. But the most important measure in my mind, is participation, and there it appears we are getting an A+. Our meetings and events are well attended and as I mentioned earlier, our members are very generous with their time and talents. If we haven’t heard from you in a while, come to a meeting or event, and consider volunteering to help in some way. I guarantee that you’ll have a great time!

By the way, check out the advertisers on the back cover. They generously offer some special values to our membership, and I encourage you to support them in return.

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**Symposium kickoff meeting in the Pinkerton gymnasium**

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**Steering Committee**

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The Guild hosted a joinery symposium at Pinkerton Academy on a beautiful spring day – April 9th. Thirteen well known presenters treated us to a series of captivating ninety minute demonstrations.

Approximately 240 members of our guild plus guilds from four other New England states attended. One dedicated woodworker actually traveled from Texas specifically to attend!

Everyone seemed to be delighted with the day. The only grousing came because one could only see three out of the thirteen presentations live. Eleven of the demonstrations are now available on DVD thanks to the dedication of many volunteer videographers and Peter Bloch.

We raised approximately $1,800 with sales from the old VHS collection, Guild clothing and donations.

Many Guild members worked hard to make the day happen smoothly. In particular I wish to thank Jack Grube, Dave Anderson and Clyde Daggett for all their behind the scenes work. It is a tribute to the Guild’s reputation and membership that we were able to attract the incredible talent of these presenters. Six presenters were our own GNHW members. All donated their time to the benefit of us all.

If you were there, I am sure that you came away inspired. The Old Saw had a team of reporters covering each presentation. Look for a brief summary of each talk scattered throughout this issue. If you couldn’t attend, watch the presentations on DVD and you will learn from the hands of the masters! It was a truly wonderful day. – Peter Breu

Joinery Symposium a great hit!

Left to Right – Tom McLaughlin, David Lamb, Terry Moore, Matt Wajda, Dan Faia, Jim Blauvelt, Al Breed, Bob LaCivita, Brian Sargent, Bill Neptune, Christian Becksvoort, Paul Ruhlmann, Phil Lowe

Photo by Jim Serokie
**Ask This Old Saw!**

**Q:** Blade Sharpness — How do you judge when a blade (of any kind) is truly sharp? - Peter Breu

**Pete Boorum replies:** Here are a couple of tips — During my years working at Chicago Cutlery, I learned from some old hands in the “red meat” industry to judge sharpness by shaving hair off the forearm. If it shaves like a razor, it is sharp.

On the finish line at the manufacturing plant, the last step was to draw a blade though brown wrapping paper. If the knife cut cleanly with little resistance, it was sharp. This quality step helped the company build a reputation of making the sharpest knives in the industry.

**Jon Siegel replies:** For something like a plane blade, straight chisel, or skew chisel, use the blade to shave some hair off your arm. This test will tell you if the edge is sharp, but not if the tool has the correct geometry. For example, if the bevel has been rounded over by improper use of a stone or too much buffing, it will shave hair, but will not behave properly is use.

**Bill Thomas replies:** Telling when a tool is sharp is about the most fundamental subject in woodworking, and therefore probably the most discussed. I remember when “Fine Woodworking” magazine first published micrograph photos of sharp tool edges. In the micrographs, very sharp tools appeared to be terribly irregular and rough. Suddenly everyone was questioning their sharpening habits.

Well, those micrographs were interesting, but don’t really contribute much to the question of sharpness. It turns out (to nobody’s surprise) that sharpness is a continuum. What is “truly sharp”, anyway? That depends on who you talk to, and a Japanese master furniture maker is going to have a different answer than I.

We can debate the merits of different sharpening systems endlessly, but instead, I would like to say that how sharp a tool should be depends on practicality, speed, repeatability, and most fundamentally on making the tool in question cut effectively.

Being able to sharpen a tool requires knowing the way a particular tool works, and understanding its geometry thoroughly. It requires understanding how sharpening stones work as well. It also requires experience, because you don’t need to sharpen a tool once, but thousands of times — many times a day — and you need to understand when it is in need of sharpening.

**All that said, a practical approach is as follows…**

A dull tool has a rounded edge. The wearing effect of cutting has made it less acute. A rounded edge will reflect light. If you stand facing a light source and hold your tool with the edge up, you can rock it back and forth and look for reflected light from the edge. If you can see a bright shiny edge, you probably need to hone the tool.

After honing it, feel for the burr which will be raised on the edge. If there is a burr, you know that you have honed to the actual edge. Carefully hone to remove the burr, and then check again for reflected light. If you don’t see any, then chances are good that the tool is sharp.

I remember going to a Guild meeting on sharpening where the prevailing wisdom appeared to be that you tested your tool by shaving the hairs on the back of your hand. With the number of times I sharpen my tools in the course of a day, I know I would soon be hairless!

**Dave Emerson replies:** A truly sharp blade will show no reflected light from the edge, and the edge will catch instantly on your thumbnail.

**Garrett Hack replies:** The best way to test an edge is to pare some end grain white pine. How much effort is required is part of what I look for, but the quality of the cut surface tells even more. Only a truly sharp edge will cut the soft end grain fibers leaving a bright and glassy smooth surface. One not so sharp breaks over the fibers or tears them from the surface. The surface appears dull, and every little nick in the edge makes as a distinct white track.

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*Joinery Symposium*

**Thru Tenon Joinery**

Dan Faia – East Wakefield, NH

Dan concentrated on three types of thru tenon joinery – multiple stub tenon, tusk tenon, and through double wedge tenon. He began by explaining how the multiple stub tenon is used in trestle table construction, doors, and chipendale chairs. Then he continued on with an artful demonstration of creating an accurate multiple stub tenon.

As he walked the attendees through each step, he explained his choices and answered questions as they came up. Dan used a device I had never seen before called a “popsicle stick” as a means of accurately transferring layout. After finishing the multiple stub tenon, he constructed the remaining tenons in the same systematic manner. Like all good teachers, Dan had more to teach than there was time for us to listen and learn. — “Andy” Young
I hesitated a long time to do this review since the Festool tools have been reviewed by many magazines, and advertised very heavily, and most importantly, are very expensive. However, there is no escaping that this saw is an amazing improvement over any other saw I have used. I find myself raving about it to anyone who comes into my shop.

I don’t own a panel saw or have a sliding panel attachment for my table saw. So when cutting plywood (or doors or tables), I have to turn to a hand held saw.

So, what is so special about this saw that makes it worth the money ($400!!!)? I’ll tell you how I used it recently as the best explanation. I recently made a Sheraton style dining room table with two leaves of figured cherry – total length of ten feet. I used the Festool saw to cut the two leaves to final width. I had intended the first cut to be a bit long so I could plane to final size knowing how a saw would leave kerf marks – especially in cherry. I was completely astonished to see the perfect cut the saw left – I literally had to only sand starting with 220 grit – and I pride myself on seeing even the slightest end grain tear-out! How is this possible?

The saw has a number of differences over a traditional circular saw – it has an excellent blade, it plunge cuts, it has a sophisticated motor electronically controlled, and it uses a guide rail for a perfectly straight cut. I have had the saw for about two years now, and have never failed to be impressed by the perfect cuts I can achieve. No tearout in plywood, no burning with hardwoods, no problem with angled cuts, incredible ease of use – the guide rail usually needs no clamping at all. On top of this are the added features of an amazing vacuum system. I suspect you could cut on the living room carpet and no one would know. And there a number of other accessories if your wallet is fat enough. This is NOT for framing or rough use. The depth of cut is just 2”.

But if you are in the market for a new circular saw, come over to my shop and try out the Festool – I am serious!

I have already let a number of friends try it out, and am happy to make this offer to anyone in the Guild. I am not a dealer. I also have the jigsaw, router, sander and vacuum if you want to see or try those. Don’t you wish you could do that at the stores? – Just let me try the tool before I buy it! I only wish it weren’t so expensive, but I suppose the old adage is exactly appropriate here – you get what you pay for!

In the last issue, I told you about an amazing scraper which can be made for pennies. I now understand it came from John Skewes – thank you John!!
Carving a Basic Shell

For period furniture makers as well as others, the shell motif is a common decorative device used in nearly every period of furniture design.

Most commonly, it is seen on skirts of tables, drawer fronts, pediments of chests and the knees, crests and skirts of chairs. Some examples are exact copies of the sea shell while others are more interpretive. These lie somewhere between shells and fans with added flourishes and volutes.

The basic shell illustrated here is based on a Boston example of around 1770. I’ve carved the example here in basswood to photograph better, but the originals would be of the same wood as the rest of the piece, probably mahogany or walnut.

The shell starts with a circular blank about ½” thick at the thickest. Many originals are barely more than ¼”. Err on the thin side if you are in doubt. A very impressive carving can be done in thin stock. It doesn’t want to look like a bump. The blank should be secured to a waste piece with screws or hide glue and a piece of paper. Double stick tape can work but may allow some chip out on the back if it isn’t really stuck on well.

The blank is first roughed out with a shallow gouge to create a flattish dome (photo 1). Using a compass or dividers, the hinge area is scribed on the blank and the lobes are drawn on. I use dividers to walk off the spacing at two different locations. These are at the outer edge and at a spot halfway between the bottom and the top. Then connect the dots to get a clean line (photo 2).

The initial cuts to separate the lobes are made with a “V” tool ground back so that the wings of the tool cut the wood ahead of the bottom (photo 3). In this way, the cross grain cuts can be made with no tear-out. The grain will be running side to side in most shells with chair knees being one exception.

I use this 11mm “V” tool in all shell carving. The rest of the tools used will depend on the size of the shell. Size them so that you can do one side of each convex lobe at a time. The concave lobes can be one pass down the center with a properly sized gouge.

Once the lobes are defined with the “V” tool, the convex lobes are shaped with one pass on each side (photo 4). You’ll have to go in different directions on some lobes to avoid tear-out. If the wood is snapping instead of hissing, it’s telling you to turn around! And beware that the tools need to be as sharp as you can get them in order to get clean cross grain cuts. I usually strop the tools before the last cuts to insure a good surface.

The concave lobes are shaped with a pass down the center (photo 5). Grinding a gouge in the same manner as the “V” tool will insure that there is no tear-out here.

The hinge area is chopped in and flattened with a shallow gouge or straight bench chisel to about ¼” thick and either vertical or horizontal veiner cuts to embellish it (photo 6).

I usually sand a shell with 400 grit paper. For intricate carvings, I forego sanding and polish the finish instead with a stiff brush and abrasive such as rottenstone.

When the carving is complete, remove it from the backboard and clean up the edges with a fine file to eliminate any fuzz. Hollow the back very slightly with a block plane so that the edges only make contact first. Glue with hide glue and clean up the excess with warm water before the glue hardens.
Achieving a Final Finish without Rubbing the Surface is a Good Place to Start. Rubbing and polishing a finished surface certainly has its place, but it is labor intensive, requires special techniques, tools and materials as well as practice.

I believe the goal of the furniture maker is to accentuate an object’s design and the attractiveness of wood grain he or she has chosen. The goal of finishing is to produce a smooth and protective finish that enhances the wood’s grain. Imperfections in a finish detract from that objective.

The way we approach the application of a finish has a lot to do with our success in achieving a good final surface. When I started doing finish work, all my finishes were hand applied. I had the most success with a product called Minwax Antique Oil finish, which is still available today. It is not an oil finish like plain linseed or tung oil but an enhanced oil and varnish mixture that dries to the touch in a few minutes depending on the temperature and humidity.

The procedure couldn’t be simpler – brush or rag on the mixture and wipe it off before it gets sticky. This wiping off process creates a smooth, speck free, satin surface. The finish film protects the wood and enhances the appearance of the grain all in one step. There are many finishes in this category. The gel varnish is now the most popular, easiest to apply and the most durable in this group.

- Don’t coat too large an area at one time since the finish may get sticky before you can wipe off the excess.
- If it does get sticky, simply apply more finish.
- Some products turn dull when it’s time to remove the excess.
- Buff lightly but briskly with the direction of the grain turning your rag often.
- Remove any smudges by changing to a new, dry rag.
- Put on as many coats as you like. The surface will reflect more light as you apply more coats but it usually never gets glossy.
- Allow sufficient drying time between coats.
- You can sand these surfaces with fine sand paper, 400 grit and up, to remove small specks of dust or other imperfections.
- Lay all rags out flat to dry, or better yet, put the rags outside to avoid the risk of spontaneous combustion.
- Be sure to read and follow the directions on the container.
- Wear gloves as the solvents can be absorbed into your skin.

These finishes are generally applied with a brush and remain wet or “open” longer than fast drying finishes like lacquer or shellac. During this open stage, any dust or dirt that lands in the film will become part of it as it dries. There are a number of steps that you can take to reduce the possibility of this form of contamination.

- Reduce the dust in the finishing environment by isolating the area where you are going to do your finishing. This can be done with plastic sheeting stapled to the ceiling and hung around the finishing area to enclose it.
- Vacuum the work area and the piece you’re going to finish. Don’t forget to vacuum yourself down as well – clothing, hair etc. Be careful around your ears! Let the air settle for about an hour before proceeding. I would do my finish applications at the end of the day.
- Use a tack rag to do a final wipe down of the surfaces to be varnished.

I’ve used a garden sprayer with water to wet down the floor in my finishing room when applying varnishes.

- A dirty brush can cause a lot of problems. Although foam brushes are not as good as an excellent quality and well cared for varnish brush, I always use them because they are more likely to be free of dust, loose hairs and dirt.
- I sometimes cover small projects with a clean cardboard box to keep the dust off.
- Sand between coats.
- Stir the material often to keep the sheen-creating component evenly dispersed in the varnish.
- Always transfer the varnish to a clean container and don’t return the unused portion back to the original container.

I hope the above suggestions will give you a good start finishing with a minimum amount of defects in your final coat. Finishing is not a perfect science. There will always be some defects. The trick is to minimize them to the point where they are not noticeable.
Economical Ways to Expand Your Chisel Collection

Just looking at the vast array of turning chisels that appear on the pages of modern tool catalogs can be overwhelming.

Even general woodworking tool companies, such as Woodworker’s Supply have over 100 different turning chisels. Suppliers which specialize in turning tools, such as Packard Woodworks, or Craft Supplies each have over 300 different chisels! Why are there so many types of chisels? Which ones do you really need?

Last time, I wrote about tools for getting started in spindle turning. I mentioned that there are five chisels that you need. Remember that in spindle turning, the grain of the wood is always parallel to the axis, and its orientation does not change as the work turns. The attack is always downhill, and the cutting action is always across the grain. This dictates that we use shallow gouges to scoop out material across the grain, and skew chisels to slice the end grain off cleanly.

On the other hand, bowl turnings are mounted on a faceplate or chuck. They are usually oriented so that the grain of the wood is perpendicular to the turning axis. To avoid end grain, the attack is from the face whenever possible (axial). The grain direction is variable and continuously changing as the work turns. Therefore some tear-out is inevitable. To minimize this and deal with tough end grain, we use narrower gouges which possess a smaller nose radius, and finish with a freshly sharpened scraper.

Types of Chisels

You will need at least one bowl gouge for bowl turning. The difference between a bowl gouge and a spindle gouge is the shape and depth of the flute. The flute of a spindle gouge is circular and shallow, while the flute of a bowl gouge is parabolic and deeper. A ½” bowl gouge is a good place to start, but if you are turning green (wet) wood you might want a larger one. This is because wet wood is softer and you can take wider chips. If you are doing smaller work in dry wood, you might also want a ⅜” bowl gouge.

Please note there are two different ways of measuring the size of a gouge. Some dealers specify the size to be the diameter of the round stock from which the gouge is made – all modern bowl gouges are machined from round bars of tool steel. But some dealers measure the width of the flute, which is somewhat smaller.

You will also need some scrapers for bowl turning – remember that scrapers are almost never used for spindle turning.

There are two main categories of scrapers – round nose and spear point. Both of these have many variations. It is useful to have several round nose scrapers with different radii of curvature, because the round nose scraper is the most versatile type of scraper. Spear point scrapers can have a variety of point angles, but about 75° is best for going into square corners. Another useful type of scraper is the square nose, which is simply straight across.
Joinery Symposium

Hand Cut Dovetails
Alan Breed - South Berwick, ME

Alan presented his insight into the carving of dovetails from a practitioner’s point of view. His presentation covered both thru and half blind dovetails with examples of each.

He has his own style developed after many years of furniture making. First of all, he determines the spacing of pins, which he does first, by the width of a chisel. This eliminates the problems of measuring and dividing to get exact spacing. Second he uses his eye to set the angle of the pins, based on the application, and the wood he is using. The tails just follow.

Metallurgy

Until about twenty years ago, woodturning chisels were invariably made from carbon tool steel. This type of steel has remained almost unchanged for hundreds of years. Suddenly, chisels made from High Speed Steel (HSS) appeared. These have gradually become the standard. Why this transition occurred in the 1980s is somewhat of a mystery, since HSS was invented around 1920. In recent years, chisels made from high alloy and powder metallurgy have come on the market, and the choices can be dizzying. My advice is to beware of advertisements which exaggerate the benefits of these expensive tools, and while they definitely do hold an edge longer than HSS, they are not five to ten times better as advertisers so often claim. If you are looking for a chisel that will stay sharp forever, there is no such thing. You would be better off spending your money on a good sharpening system. If the time and effort you need to invest in sharpening is thus reduced, then the length of time the tool stays sharp becomes less of an issue. The subject of sharpening woodturning chisels will be discussed in detail on these pages in upcoming issues of *The Old Saw*.

The tools described above are the ones you will need for general work. If you want to specialize, you may need chisels designed for a single purpose. For example there are mini chisels for very small detailed work. Or, if you want to make hollow vessels, you will find an amazing variety of tools designed for reaching into the small opening of a vessel for hollowing the inside. Some of these hollowing devices are equipped with a laser beam to gage the thickness of the wall of the vessel while you are turning.

What You Need

Five chisels you need for spindle turning – ¾˝ roughing gouge, ½˝ spindle gouge, ¾˝ spindle gouge, ½˝ skew chisel, and a parting tool (diamond pattern).

Four additional chisels you need for bowl turning – ½˝ bowl gouge, ½˝ round nose scraper, ¾˝ round nose scraper, and ¼˝ spear point scraper.

Spear point and square nose scrapers
Buying Used Tools

Warmer weather brings yard sales, barn sales, flea markets, auctions, and vacation travel, which gets me thinking “tools.”

Even though I have long ago collected all of the hand tools I could ever need, I still love hunting around and seeing what tools can be had. I jokingly call it my continuing education.

The first rule of tool hunting is to “look everywhere and anywhere.” Rummage through the boxes of rusty iron and tools, and in amongst the miscellany, for you never know what might turn up. General dealers often buy tools in a box lot at auction or find them cleaning out a barn or attic. Sometimes they know what they have, sometimes not. Think of it as panning for gold, with occasional gems to be found.

With eBay and internet tool dealers, the auction and used tool scene has changed considerably. It’s far easier for any seller to find out the value of a tool, which results in more uniform prices. The flip side is that most any tool can be found through the internet. I don’t believe there are many deals to be had, but it’s an efficient way to find something when you need it. Just remember the second rule of tool hunting – “There are hundreds, thousands, in some cases millions of the very tools you are searching for, so be patient.” A cleaner, less worn, or more complete tool might be just around the proverbial corner, in an original box no less.

The tools you are likely to find are the common tools that every carpenter, furniture maker, handy man, mechanic or machinist owned – planes, chisels, saws, marking and measuring tools (machinists owned plenty of these), and striking tools. For rare or specialty tools you will have to look harder, seek out dealers or go to auctions such as The Live Free or Die auctions put on by Martin Donnelly a few times a year in Nashua. The best action is in the parking lot with dozens of dealers and anyone with some tools to sell. Brown’s Auction Services has an international auction twice a year in Pennsylvania with over 700 lots of top tier tools. And in England either Tony Murland or David Stanley have regular auctions with an astounding variety of quality tools.

The planes I would hunt for include – a #4 bench plane for everyday tasks such as flattening and trueing parts, a longer #5 for short edge joints and preparing parts, a long jointer #7 or #8, a shoulder rabbet #92 or #93 for adjusting shoulders fitting tenons, a #78 or #289 rabbet plane for trueing or cutting large rabbets, a spokeshave or two of the adjusting type such as Stanley #52 or #53, and a smoothing plane. I favor the British infill smoothers such as Spiers, Mathieson or Norris, but these are highly sought after these days and often way over valued. An alternative is to recondition an old wooden body coffin shaped smoother, preferably of a hard tropical wood. Flatten the sole and cut in a throat plate to tighten the throat and for little money you’ve got a first rate plane.

When buying any tool, start with how it feels and looks. Do the handles feel comfortable, are there obvious repairs or chips in the vulnerable cast iron body, are parts rusted or just covered with old grime and spattered paint? Take it apart to see the condition of the less obvious parts. Tap the body of a cast iron tool to check for hairline cracks that might not be visible. It should ring high, not dull, which indicates a crack or maybe just a loosely secured frog – a stripped frog screw?. Do the adjusters work smoothly? If I see a lot of rust I am always wary, although a blade badly pitted with rust is minor, as new superior replacement irons for bench planes are so easily found. Check that all the screws loosen and the flatness of the sole is with a straightedge. Most soles will need some careful lapping, but the flatter it is to start, the easier this task will be.
Mismatched parts are common and harder to detect without lots of experience unless they are quite obvious. Stanley even used up batches of older parts on newer versions of tools. Look for tapped holes with missing screws. Stanley quite cleverly used unusual threads, so a missing screw for say the depth stop on your #78 is not going to be the simple fix you might imagine. The little nicker for this plane can also be missing, possibly scavenged to complete a better #78. Any tool that has multiple parts, not all of which are needed at any one time, can easily be incomplete. The best guide for buying any Stanley tools is one of the older catalogs (reprinted), that explains every tool, all the parts, and briefly what it was designed to do.

Broken or damaged tools are rarely a bargain. Cast iron repairs are tricky and expensive, making only the salvaging of a less common tool you want to put to use worth doing. Even when repaired well, such a tool will be of little value except to another user. Repairs to wooden parts such as knobs, handles, and plane bodies are certainly worth doing, but again a collector (who you are competing with and in many ways is driving prices) would shun anything but a tool with original parts, even in worn condition. Luckily between the pristine tools – always going to bring the highest money now and if resold – and the beat user tools, are lots and lots of choices. Remember, too, that there are lots of top tier tools other than very collectable Stanleys, such as Sargent VBM (Very Best Made), Union, and many unmarked.

Part of the price of a used tool is the time to do a thorough cleaning. Work cautiously with rare or valuable tools so as to preserve the original patina such as the black japanning. Over cleaned and polished, they might look nice but be considerably devalued. I view my flea market purchases as tools I will own and use a long time, so I take them apart and clean everything with very fine steel wool and turpentine or paint thinner to cut the grime. Stuck on paint might require some light scraping or fine sandpaper. The best final finish is a good paste wax on all of the parts, polished by lots of use.

Besides the fun of finding good old tools to use, there is nothing like the patina and soul of hand smoothed handles and shapely castings with the inevitable dings of a long and useful life.

-- Ken Kuster

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Queen Anne
Dining Table

The last few projects we had worked on seemed especially intense with lots of veneer and inlay, what might best be called “extreme woodworking”. So when the order came in for a large Queen Anne dining table, made in solid mahogany, I could hardly wait to get started. Working in the solid, shaping the sculptural curves of this eighteenth century style, has a hearty, honest feel and is personally sentimental because it takes me back to my apprenticeship roots with “Pug” Moore in North Carolina. But dining tables are also stimulating to make because they are, by nature, the focal point of the room most used for gathering socially.

The standard size Queen Anne table Pug would make measured 48˝ across, to allow for more spacious dining, and consisted of two pedestal ends, each 37˝ long to make a 74˝ long table. In general the length of the table, in feet, is the number of people that the table can seat comfortably. So, for example, this standard size table at six feet in length will comfortably seat six people, two along each side, and one at each end. Usually this table would be made with one or two additional 22˝ wide leaves which when added would seat two more people for each additional leaf.

The Project – But this was no standard dining table order we had on our hands. This table was to be used for entertaining guests and groups of varying sizes in the reception room of Southwestern Baptist Seminary in Fort Worth, Texas.

It needed to be large, versatile and functional. It was decided that the length of the room would allow for a table fourteen feet long – 42˝ to 48˝ space allowed to the wall at each end. To give the table more versatility, it would be made in four pedestal sections, each 42˝ long by 48˝ across.

Unusually, the two center sections could be added or withdrawn, like large leaves, and used as stand alone tables for four in an adjacent room, or tilted up and decoratively stored off to the side when not needed. For added stability, these center sections would be four legged pedestals, instead of the usual three, as well as the end sections to provide a more uniform symmetry overall.

Top – Materials are always carefully selected, but even more so for a table like this one. For the dining top, my hope is to use the widest, longest, best matched and highest grade boards I can find. This is getting more difficult with the recent reductions in mahogany imports, not to mention the added expense. But after some calling around to suppliers, I happened on some beauties. I found several 26˝ wide x 12˝-2˝ long, matched mahogany boards with no end checking. They yielded three cuts each with very little waste. These allowed for each table section to be made up of only two board widths, much like the period tables would have been made. They also created a near seamless appearance to the top with a dramatic continuity of color and figure.

The edges were trued with a #7 jointer handplane and the boards were glued up with biscuits every 8˝-9˝. Rather than using dowels for alignment pins between top sections, Pug showed me how to use short splines instead. These splines measure ¼˝ thick x 1¼˝ long, are glued in on the male side, sawn off to protrude 5⁄16˝ and then tapered by hand filing. The tapering helps the spline more easily find the matching mortise as the table sections are pushed together. The splines are superior to dowels because they provide more surface area, offering a longer lasting, more positive connection as well being more inconspicuous.
Base – The base sections consist of a central column, four legs, a top block and a pair of cleats joining the base to the top. I usually begin with the column, which in this case measured 5¼” diameter at the largest round and 21” long overall. Two large through tenons connect the column top into the 1⅞” blocks. These tenons are wedged for added strength and, when revealed after the center section top is tilted up, they offer evidence to the table’s integrity. The tenon shoulders are best sawn prior to turning the column. I used the table saw but they can be band sawn just as well.

I then turned the column to the full round dimension and used a homemade box-type jig to machine the sliding dovetail slots into the bottom of the column. A router rides on top of this box, and a straight cutter is plunged to create a flat as wide as the leg. Then a 1” wide dovetail bit is set ¾” deep and, with guide ways attached to the base, routs the four indexed sliding dovetail slots into the column. The completed column is an interesting study in stout joinery.

The leg stock is dressed to 2¾” thickness – a heavier 2¾” thickness when only a three legged base. The leg pattern tracings are nested on wide stock, and band sawn to shape. At this point, while the leg sides are still flat, I like to cut the sliding dovetail tenons on the legs. I rough saw the waste away, heavy to the line, and then final trim and size to fit using the same dovetail bit in the router.

Shaping the legs has always been enjoyable to me. In this case, I had my assistant, Dave Mentzer, do most of the final shaping. After sixteen legs, he had really gone to school and was ready to move on to something new. Being careful to leave the guide lines, I rouged out the rounded sections by using a draw knife to quickly hog off the waste thus creating a faceted surface. Dave handled the final shaping by using a series of spokeshaving, rasping, scraping, and sanding. The pad foot is achieved by sawing in ⅛” heavy, and undercutting the rounded foot down to the saw cut.

Finish – After assembly, final detailing, and sanding, I was ready to apply the finish. I used a sequence of staining – first potassium dichromate followed by a brown walnut, water based, aniline dye stain.

I love to use shellac on anything that won’t be subject to moisture. So the base got three thin coats of orange shellac, rubbed out with 0000# steel wool and waxed with dark Briwax.

The top requires considerably more attention. The goal here is always durability without sacrificing beauty. Once the top is stained, a washcoat of shellac is applied followed by a burnt umber colored grain filler, then another shellac seal coat. The finished is built up with three to four coats of a pre-catalyzed gloss lacquer until the grain is filled.

The final coat is rubbed out with 600 grit wet/dry paper using mineral spirits as the lubricant. Once an even flat sheen is achieved, I brought the sheen up a bit brighter with 1000 grit, followed by 2000 grit Abralun sanding pads used dry.

Finally, the surface is lightly buffed with 0000# steel wool and then paper towels, each wrapped around a felt block. The full lustrous beauty is brought out with a polish, which in this case was Guardsman furniture polish.

Hardware – All that remains to complete the table is to attach the hardware. The center tilt sections hinge on 1” dowel pins that are an extension of the block and tenon into the cleats. These are screwed with washers to the underside of the top using #10, 2” long round head woodscrews. The outer holes in the cleats are said to be a bit easy to break, so I always replace the screws if I have to.

Photos by Tom McLaughlin
Continued on Page 16
Woodworking, Life and Happiness

Can woodworking become the cornerstone of a life well lived? Can building furniture become a route to enlightenment? Is craftsmanship a valid and promising path towards the pursuit of happiness?

Most articles in The Old Saw are about tools, techniques, and projects. Not this one. I wanted to learn something, not about how to do it, but why and to what end. Can we work in such a way that we produce not just pieces, but also peace of mind?

So I approached the finest furniture maker I know, the current Chairman of the New Hampshire Furniture Masters, teacher, and author Garrett Hack. Garrett has a regular column in The Old Saw. If you read his words, there is a grace, a joy, a self-possession that shines through. This is also true of his writings in Fine Woodworking, for which he is a contributing editor, and of his books, such as his book on hand planes – The Handplane Book, Taunton Press, 1997.

I first met Garrett when he taught a session at Al Mitchell’s Homestead Woodworking School. He had us students make string inlay tools out of pieces of an old bandsaw blade and then inlay strings of white holly into narrow grooves we inscribed in walnut boards. He showed us slides of his shop in Vermont, which sits on his one horse farm. I knew then I had to learn more about this extraordinary man, that he had much to teach, not just about techniques of woodworking, but about joy.

The Shop – Garrett graciously invited me to visit his shop, which is gorgeously set in that part of Vermont where they must take all the calendar photographs. The photo shows the shop as you drive up from the dirt road. He built it himself of brick and set it into a hill which makes it part of the landscape and also highly energy efficient. The door you see opens on the second floor where Garrett stores his lumber. Being set into the hill with the driveway coming right up to the second floor, makes it easy to unload lumber.

You leave your car and walk down on the left side of the building and there is Garrett at his front door, welcoming you. Notice the massive yet graceful construction. This is not just a utilitarian building, it is an expression of self, of value, of design, and it is built to last for a long time.

The graceful appearance of the shop, and the way it fits into the landscape is no accident. It turns out that Garrett majored in architecture and civil engineering and was influenced by a teacher who emphasized both design and aesthetics. After graduating, he designed and built houses before turning to furniture-making full time. So the shop is not just planned, it is architected, right down to the windows that he specially designed.

Often quality is ostentatious. Not so here. In fact the shop is frugal in the old-fashioned, good sense of the word, that is, wise use of valuable resources. The bricks are old, friends helped in building, and careful thought and time were spent where a more impatient person might have spent money. The result – an aesthetic, a philosophy extremely rare in the modern world.

Everyday Woodworking – Inside, Garrett explains that he has just been gluing up a drawer front for a serpentine dresser a client has commissioned, and there it is with the highest density of clamps I have ever seen in use. This is one of
about six pieces Garrett will build this year. That’s his total annual output. He philosophizes that his lifetime legacy of masterworks will be about two hundred.

The New Hampshire Furniture Masters holds an annual auction as a promotional event for which each master builds one piece. This year, Garrett’s piece is a small table with drawers, an example of his hallmark style of contemporary furniture based on traditional forms. Somewhere in the table’s lineage is a Shaker inspiration. But it has evolved far beyond that. [You can see Garrett’s 2004 auction entry in the Readers Gallery section of the May/June 2005 issue of Fine Woodworking magazine – Ed.]

Many of us have been to museums or seen truly fine furniture in people’s homes. Garrett startles me by advising that when you look at a fine piece, you need to study it for at least an hour!

Looking at Garrett’s beautiful table and studying the photographs afterwards, I begin to see what he means. In fact, I have found myself dreaming about this small table. Consider some of the details. In the photo, Garrett is holding a prototype of the leg he finally settled on. You can see that he moved the scribed circles on the leg about ½” from the prototype – see arrows.

This design aspect is not something one can calculate or read about in a book of rules. As you can see from the photo, it just looks right.

The case and top of the table are made of perhaps the most devilish wood of all to plane — wavy birch. No amount of special tuning nor custom profiling of his planer blades allowed Garrett to plane these boards by machine. They all had to be thickness planed by hand. The drawer fronts are bleached mahogany. Who would think to combine these two woods? Yet how elegant the finished project looks.

The table has touches of whimsey. Look for example at the little drawer on the right side of the table. “What would one put in that?” I ask. Garrett grins and says, “Secrets”.

Garrett has inset blue glass buttons into the ends of the spectacular African Blackwood knobs. He almost always makes his own knobs and drawer pulls. A rare exception will be brass drawer pulls on the serpentine chest, and that only because the client has insisted.

Speaking of clients, Garrett explains that it is very important for a professional to genuinely like people, have good interpersonal skills, and be able to capture the clients imagination. Two ways he does this are first to cultivate good sketching skills and second, to have extensive files of furniture clippings of all sorts of styles. The clippings can help clients to point out the sort of things they want. It occurs to me that these would also be excellent ways to motivate and inspire oneself.

The photo cannot do justice to the shimmering, tactilly delightful finish on the small table. The final step is not rubbing the shellac with pumice. It is a technique Garrett has just learned from a colleague called ghosting. You put a cloth in a jar with a very small amount of alcohol and leave it over night. The cloth is to have so little alcohol on it that you can barely feel it to be wet. Then you rub the finish ever so lightly with this scarcely damp cloth.

Life and Happiness

– Many of us have practical matters and affairs of business and life that take us away from our woodworking that determine our schedule. Garrett, for example has to plan his activities around the feeding of his animals on his one horse farm. It occurs to me that as distractions go, this one is pretty desirable and certainly beats commuting to a job in the industrial park that one is less than enthusiastic about. His professional distractions, teaching and writing, are not really distractions at all since they are integrated into his woodworking life.

Near the end of my visit, Garrett takes a phone call. He sits in his special seat that is built into his brick wood stove so that the surface warms his back. I discretely listen in. He is evidently talking to a fellow furniture maker who is having some doubts about his abilities to complete a project. Garrett is supportive and encouraging. So it turns out that this particular furniture master

Continued on Page 16
**Machine Mortise & Tenon**
Matt Wajda - Portsmouth, NH

Matt Wajda is a graduate of North Bennet Street School as well as an instructor. His style includes a wry sense of humor. Matt has a five step process…

- Start with a plan and drawing
- Stock selection
- Joinery execution
- Surface preparation – both scraping and sanding
- Finishing

Matt’s first illustration used ¾” rails that would be M&T’d to a post that ranges from 1½” - 1¾” wide. A quality mortise has a parallel side and consistent depth. Dry fitting before gluing was stressed and a few audience heads nodded to acknowledge their past mistakes. Matt does not want to clamp his joints too tightly.

All joints should start with good butt joints before machining. Inside corners need to be square and a reference surface needs to be established. Mortises should be cut first since mortising bit size will vary – both from the manufacturer as well as after sharpening. Before cutting, the full size plan should be laid on the stock.

Corner joints use haunches for aesthetics to avoid end grain showing at the corners. To accommodate the haunch, two mortise depths are required having a difference of ¾”. The haunch mortise depth should be cut to ¼” first and then shimmed up on the mortising machine.

Caution is needed to avoid heat buildup when using the mortising machine. This is since the round auger contacts the square shell. Before mortising, the tapered mortising chisels should be checked for square ends. The machined mortises should be a two pass operation where small bridges are left between each hole. The second pass will remove the bridges for a cleaner cut.

After the mortises are cut, the table saw is set up with dado blades to cut the tenons. The saw should always be adjusted on the “Upward Crank” due to the adjust mechanism play. Two passes should be used to remove stock – outside first to avoid trapping waste stock. After both mortise and tenon are completed, the fit should be tight enough to stick before gluing. — Ken Kuster

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**Complex Joinery**
Phil Lowe - Beverly, MA

Phil Lowe demonstrated how to make two types of complex mortise and tenon joints. Both involved angled or curved intersections and a miter or notched appearance on the front side of the joint.

Phil’s procedures involved four interesting processes.

- He used a small piece of plywood (about 6” square) to lay out the angles and sizes in full scale. This allowed the accurate setting of bevel squares to the lines.
- He marked on the workpiece with a knife, never a pencil, and he had two knives – one with a left bevel and one with a right bevel (always facing the bevel to the waste side.)
- Tenons or miters were roughed out first with a saw (either a hand saw, band saw, or table saw), and the final cuts were made by hand with a chisel. Accuracy was achieved by placing the chisel directly in the scribe lines made by the knife.
- To facilitate clamping of curved
or angled components, Phil incorporated projections which were square to the joint. These projections were cut off after clamp removal. — Jon Siegel

Traditional Drawer Construction
Terry Moore - Newport, NH

With his wonderful humor and humility, Terry Moore demonstrated how to craft a perfect drawer of traditional materials and joinery.

Terry started by creating the perfect opening in the carcase, and including woods of choice, methods for cutting dovetails, honing the teeth of a backsaw, use of a shooting board, considering wood movement and innumerable tips and techniques. Terry showed why he is indeed a master.

He inspired the audience by convincing us that it was all quite easy, and that the results could indeed be perfect. I encourage you to view the video if you are contemplating a project including a drawer. — Peter Breu

Japanese Joinery
Jim Blauvelt - Taftville, CT

Jim Blauvelt has studied Japanese joinery for many years, including a four year apprenticeship building ceremonial tea houses. Exotic and intriguing best describe this approach to woodworking. This is a must-see video for anyone interested in stretching their imagination about what is possible in woodworking.

Consider these highlights - Jim showed a six foot long, six inch wide, 0.003” thick shaving produced with a wooden Japanese plane! The joints he showed, including the one he demonstrated, look like wooden puzzles. For the most part, these are glueless joints that rely on complex design and tight fits to stay together.

Also, Japanese furniture is for the most part unfinished, in striking contrast to Western practice. This is according to the philosophy of wabi-sabi which refers to appreciating all stages of the natural aging process. New things look new, old things are supposed to look old, and when a piece is worn out, a new one gets made.

Japanese woodworking evolved without the discovery of sandpaper and relies on one-shot joint cutting (no trimming allowed) and superb planing for fit and finish. And a trip to Japan might be in order where ultra-high end power tools, unavailable in this country, are the norm – five minutes to change planer blades! — John Whiteside

Fixtures for Multiples
Bob LaCivita - Nottingham, NH

Bob LaCivita brought his woodworking knowledge in fine furniture, architectural and period millwork, and his teaching experience from Homestead and Leeds Design Workshops. Bob discussed four joints that he routinely uses and demonstrated how he produces these joints efficiently and with repetitive high quality.

- Mortise and tenon – Bob cut mortises using a router with the help of a fixture that he put together from scrap wood. Although his fixtures are quite effective, Bob does not believe in wasting much time on making his fixtures pretty. The mortises are used with loose tenons which Bob makes using a bead bit.

- Cope and stick – In addition to describing joint construction, Bob also discussed cutter selection and sharpening. Then came the tip of the day – combine the cope and stick with the mortise and tenon to make a very sturdy joint for heavy doors and panels.

- Sliding dovetail – Bob made this joint using a router with a simple fixture. His advice is to use a straight bit first to save wear and prevent breakage of the more fragile and expensive dovetail bit.

- Dovetail – Last was the dovetail joint with the Leigh jig.

Throughout this very practical session, Bob presented his methods for saving time while doing quality work. He gave subtle reminders on the importance of working safely. — Bob Jarratt

Chair Joinery
Tom McLaughlin - Canterbury, NH

One of my favorite movie scenes is from The Patriot. Benjamin Martin (played by Mel Gibson) is finishing a beautiful Windsor rocking chair, but the test of any good chair is how it sits. As Benjamin rests himself in the chair the joinery gives way, and down he goes. In anger Benjamin throws this wreck of a chair to the wayside where it rests atop several other earlier attempts.

Chairs are complicated pieces for any woodworker, and many woodworkers have failed in passing the final test of their work. Tom McLaughlin discussed the many intricacies of chair design and creation from his years of experience in making them. Tom took us first through some of the basic questions of design. After discussing the requirements of size, shape and materials, Tom used some examples of his work. Chairs require a lot of pre planning, and for Tom, this means full sized drawings and templates. These full sized drawings reveal the where and what of the joinery.

Strong joints are necessary in any chair, but Tom didn’t discuss how to chop a mortise or cut a tenon. You can learn the techniques for making the joinery from other resources. Tom discussed how the joinery fits and works together with the overall design. Full sized drawings, templates and patterns are vital to the chair’s construction. — Brett Anderson
Goosebay Tour

Carl and Lydia gave a tour of their facility including a small vacuum kiln. Lydia gave an engaging presentation on the business, its history and current activities. Goosebay has been in operation for over 20 years.

The sawmill is currently used “lightly” – one or two days of sawing per week. For the most part, Carl saws materials they can not readily purchase, like extra thick planks of bird’s eye maple and interesting logs they happen to encounter. For example, extra long ash logs brought in by local loggers are cut to make stock for canoe gunwales.

They were recently asked to dry some wide (3-5 feet), thick (8-12 quarter) black walnut by a company not able to dry it with their kiln. It took three weeks for Carl to get them ready! He has another such job to perform, but expects that kiln adjustments to meet black walnut peculiarities will speed the process.

Carl leases part of the site as a log yard where trucks are unloaded and logs sorted for quality, species, and usage. In the process, he sees many logs go by and can purchase interesting ones for his saw mill.

Finally, Goosebay of course offers an array of domestic and exotic hard and softwoods in a range of sizes, thicknesses and state of preparation. Figured wood is a specialty. If you’re looking for something really special, Goosebay is a good place to start!

We all enjoyed our time with Lydia and Carl, some fine D&D donuts and coffee, and a great story about how to react when your new sawmill is burning ferociously!

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Full Size Shop Drawings

On a bright and sunny Saturday in March (perhaps the only day of it’s kind in what was a stinker of a month for weather) eleven members gathered at Homestead Woodworking School to hear Dan Faia’s Small Meeting presentation on the creation of scale drawings. Hosted by Homestead’s Alan Mitchell, the meeting covered the drafting technique used to transfer information from almost any picture to an accurate scale drawing.

Using a portable drafting table that employed a system of parallel wires to guide one vertical rule, from which all right angles and vertical lines could be drawn on a large sheet of manual drafting vellum (aka white paper), Dan demonstrated how measurements could be transferred from almost any photo of a piece of furniture to create an accurate full scale drawing.

The key technique involved using a known dimension, such as the height of a table leg, from the photo to create a one time use ruler that can then be used to measure all other dimensions of the entire piece of furniture. These relative dimensions are then transferred to the drafting paper in accurate full sized proportions.

Dan cautioned that certain photos are more useful than others, because any picture that is photographed at an angle will contain slightly distorted measures due to perspective. Any image that is taken full on from the front, side, or overhead will provide the most precise gauge to create the actual drawing. A common sense application of furniture construction methods will also help mitigate any obvious errors.

Dan demonstrated the entire process by creating a full size measured drawing of a cabriole leg, sketching the curves freehand after laying out the appropriate key points in proportion on the full size drawing.

All the necessary equipment needed from the drafting paper to table and guides for the vertical rule are available through Charrettes, online or in Portsmouth.

If all this sounds too daunting, there is always the website tablelegs.com which contains a huge selection of manufactured furniture legs ready to use. Make sure you include the word table because simply typing in legs.com will bring you to a site of a profoundly different nature!
Rustic Joinery Symposium

Rustic Joinery
Paul Ruhlmann – Concord, MA

Rustic Joinery is an exercise in the art and feel of “eyeballing.” Paul, who studied with Jon Brooks, started with an inspiring slide show of his and his students’ works consisting of chairs, tables, coat racks and even whimsical interpretations of animal figures – all made from found wood. This is the epitome of wood conservation, for unlike dealing in rare or plantation timbers, Paul works with the Audubon Society to harvest stock from New England forests.

Favorite woods for his rustic creations include European Buckthorn and Red Maple, preferably harvested between late May and July when the bark peels off with ease. After air drying, the stock is ready for use. Phil has no problem with checking or cracking for pieces up to 2” diameter. He paints end grain of larger diameter branches.

For pinned joints, he uses a variety of materials, including thorns from the Frosted Hawthorn. These thorns are so sharp and hard that they can be hammered into most wood. He also uses delrin rods and makes dowels from contrasting species.

Paul can frame a chair in an afternoon. He also makes tables and benches. Tops might be purchased wood, glass, and even bluestone.

His tool set consists of not much more than a saw, straight edge, and tenoning and dowel jigs he designed. The dowel jigs are now available through Veritas.

Rustic Furniture is an art that seems to involve 90% inspiration and 10% perspiration. — Tony Immorlica

Pam and Pete Boorum hosted a small meeting dealing with small furniture and small tools. They make a line of doll house furniture collectibles and jigs for use with a small table saw.

They usually resaw quarter sawn cherry into 3/8”, 3/16” and 5/32” “lumber” for their 1/2" scale furniture. Peter has made a custom fence for his table saw. Essentially it is a box which bolts onto the preexisting fence. The box has small holes on the outfeed end of the saw blade side and a vacuum hookup on the top. When suction is applied, Peter finds that he can resaw his lumber supply with a clean finish using two passes. The fence sucks the thin boards in preventing vibration and kickback.

Peter is in charge of machine maintenance in their three shops – one with regular size machinery and two with small machines. Peter also has a miniature metal mill and lathe. A separate small room contains a spray hood for finishing.

Pam does most of the furniture construction while Peter manufactures the various jigs for the table saw as well as small lathe knives. They share the finishing responsibilities and also teach work shops together at various shows. It is clearly a team effort.

They produce the furniture in batches using several miniature saws, small lathes with duplicators, a miniature drill press, a miniature shaper/router table and a dremel tool mounted as an overhead shaper. They also have all the standard tools one could wish for in a well equipped shop.

The furniture is really an adult product – not for little hands. Their web site is http://users.rcn.com/smallife/ – check out the miniature hand tools.

Vacuum fence prevents vibration & kickback

Photos by Jim Seroskie
Meetings and Events

Electronic Motor Controls

Granite State Woodturners

by Ken Kuster

The March Granite State Woodturners meeting was held at Les Huckin’s shop in Strafford. This meeting contrasted with others since not a single gouge or other turning tool was discussed. President Jon Siegel arranged for Tom Bates of New Hampshire Electric Motors to present a talk on Variable Frequency Drives (VFDs). Jon’s opening comments introduced a $165 VFD for a 1 HP motor.

Tom Bates’ primary industrial customers are the many sawmills and ski areas that require large horsepower motors with speed control. Although these large motors are controlled by VFDs, the electronics are available and economically viable for motor sizes that are appropriate for woodturners.

What is a VFD? – VFDs are electronic devices that can convert single phase 60 hertz (cycle) utility power to variable speed three phase power. Single horsepower VFDs have a price entry level under $200 but can range from $400 to $600 for a 5 HP model. New VFDs are now housed in enclosures that are the size of four paperback books sandwiched together, but will require a protective housing for a dusty woodshop environment.

A VFD converts incoming 60 cycle 220 volt utility power to a pulsating DC (Direct Current) voltage that is fed to filtering capacitors. The input can be single phase, but larger units (5 HP and more) normally require three phase. The input is usually 220 volts, but small units (½ HP or less) are often 110 volts. The DC power is then fed to inverters that convert the DC power to variable frequency three phase power. All of the voltage and frequency control is provided by a controller module.

Setup – Wiring a VFD is straightforward and consists of a standard 220 V input cable and a standard three phase output cable. Both input and output cables should be sized for the appropriate current draws.

Most woodworkers have noticed magazine ads that convert single phase power to three phase power that are built using either static or dynamic converters. Both the static and dynamic converters can provide reliable three phase power, but the significant difference with VFD technology is the ability to convert from single to three phase power with speed control.

The VFD provides the additional distinction of smaller size as well as many programmable features. Although the VFD programmability features might scare some woodworkers off, Tom demonstrated how easily the VFD can be configured. The programmable features range from control of the acceleration and deceleration (perhaps useful for a 24” diameter log), input from a forward/reverse switch or perhaps control of an external relay.

Reliability – Tom stressed some of the issues with motor and VFD reliability. The common motor failure cause is insulation failure caused by overheating. The rule-of-thumb is a 10 degree Centigrade rise in motor operating temperature halves the motor life. Driving a motor with a VFD will generate additional motor heat compared to “straight” utility power.

TEFC (Totally Enclosed Fan Cooled) motors are well suited to dusty woodworking environments. Unfortunately, halving a TEFC motor’s speed will greatly reduce the cooling, so Tom suggests keeping mechanical speed changers on woodworking equipment and then using the VFD for small speed changes. For some applications, a variable speed motor may require an external cooling fan that provides constant cooling.

VFDs should be installed in a suitable enclosure to prevent contamination, but also provide adequate air circulation for cooling. Each VFD has a required mounting direction for airflow. Shop contaminants such as dust and wood sap will impede airflow, resulting in overheating and premature failure.

Thanks to Tom for his presentation of this very useful and now affordable technology!

Q My lathe has a magnetic switch. How do I incorporate the VFD? – Remove the magnetic switch and connect the VFD directly to your three phase motor.

Q Do I need to reconfigure my VFD after a power failure? – No, the settings are stored in the VFD memory.

Q How would I use one VFD to feed four different machines? – You would need to program the current setting for each motor and select the appropriate input for each machine when the VFD is connected to a different machine.

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reeding a sheraton post and more

Period Furniture

by John Whiteside

Nineteen period furniture enthusiasts enjoyed an exceptional meeting at professional high-end furniture maker Marty Milkovits’ shop in Mason.

The main topic was reeding a Sheraton post. Marty’s lathe is of such a design that the bed consists of wooden beams which can be made as long as you please. Hence he can turn bed posts as a single piece. For this demonstration, though, Marty roughed out an approximately three foot long post into the shape of a tear drop.

Cutting the reeds (channels) into this post is an exercise in advanced geometry – fascinating to watch. Marty’s approach involves several specially built jigs that attach to the lathe bed. First it is necessary to draw lines on the long dimension of the post, showing where the reeds will be cut. A sliding jig, built to hold a pencil at the exact center point of the lathe permits this.

Now the problem gets interesting. Marty had first tried cutting the reeds with a router guided by a bearing that rides on the surface of the tear drop post, and he passed around the result. The big problem is that since the diameter of the post changes along its length, the bit cuts deeper as the post gets smaller, just the opposite of what is wanted.

The method that Marty demonstrated relies on a pattern, cut as a projection of the tear drop shape onto a flat surface, to guide the router so that the bit can move in and out (toward or away from the central axis of the post) at the same time that it travels along the length of the post.

Wayne Baker also showed off a beautiful Shaker night table of cherry. He makes a finish that is a joy to touch by wet sanding with Danish Oil. This procedure rubs oily wet sanding dust into the pores.

Greg Benulis showed off his second Windsor chair and asked for advice on how to get all four legs to touch the floor at the same time. This started a spirited discussion in which various competing schools of thought were revealed. My personal favorite was to place three legs on a flat table, letting the fourth hang off the edge. Cut where the plane of the table top intersects the fourth leg. However, others pointed out that while this gets all the legs to hit the floor, it doesn't necessarily make the chair level (nothing on a Windsor chair is level anyway, but that’s another discussion). Guy Senneville showed off a tilting-top candle stand table with inlay of which he is justly proud.

Beginner & Intermediate Group

by Greg Benulis

We met on the first Saturday in May at Bob LaCivita’s shop. The topic was drawer construction. We began with design for use, capacity, strength and appearance. We covered wood selection and hardware options.

Bob then proceeded to construct a toolbox drawer with half blind and through dovetails. While building the drawer, Bob explained each step with the how and why, tool selection and usage.

There was a discussion of the topic – pins vs tails. We learned Bob’s method of marking the drawer pieces to keep everything straight during construction.

We wouldn’t want to wait until assembly to find out we have two left sides would we? I’ll bet most of you have been taught dovetailing, seen demonstrations, seen videos or read magazine articles on the subject as I have. I had never seen Bob’s method of cleaning out the waste on half blind dovetails. Ask him about it at the next BIG meeting if you missed it.

We also got some interesting bits of Bob’s background in woodworking from his apprenticeship with David Powell to his study at the Rhode Island School of Design with Tage Frid.

At the end of the session, we had the front, back and sides of the drawer dry assembled with the bottom to be done at a future time.

Come and join us at the next meeting of the BIG to learn the elements of cabinet and furniture making.
Summer Trip - Friday, June 17
The summer trip will be on Friday, June 17 to Rockport, Maine. We will meet for lunch at the Taste of Maine restaurant (www.tastefomaine.com) just north of Bath on US 1 at 11:30 am, then go on to the Lie-Nielson Toolworks in Warren and finally the Center for Furniture Craftsmanship in Rockport.
Please contact me to sign up. We also need a volunteer to do a write up for The Old Saw.
Dave Frechette
802-633-2561 or dfrech@together.net

Sunapee Fair – August 5-14
Volunteers are still needed to help out with the Guild's demonstrations and raffle at Sunapee! Contact Dave Emerson (misc. help & set-up), Dave Anderson (raffle & Guild demonstrations), Jon Siegel (turning demonstrations), or Lou Barchey (wood carving demonstrations).
This is an important event and fundraiser for the Guild and a great way to have a good time and enjoy Sunapee!!
Dave Emerson
603-783-4403 or efurnitr@tiac.net
Dave Anderson
603-887-6267 or dsachester@gsinet.net
Jon Siegel – big@proctornet.com
Lou Barchey – barchey@comcast.net

Annual Meeting – September 17
The annual meeting will be at Mike Dunbar’s Windsor Institute in Hampton, NH. Mike will speak on “Old Tools – How to Identify, Buy, Restore and Use Them.” Mark your calendar for this special event.

Period Furniture
The Period Furniture Group meets five time a year, generally on the second Saturday of September, November, January, March, and May. Meetings are small, informal, friendly, and open at no additional cost to any GNHW member with an interest in period furniture regardless of level of expertise.
Sal Morgani is organizing a group summer trip to Deerfield, MA tentatively the second weekend in July. With enough interest, we can get special guides for the day plus a private tour of the warehouse. We are looking into the possibility of renting a van so as to minimize everyone driving. It looks like the cost per person for both transportation and the tour would be around $35 with a group of twelve.
The next meeting is Sept. 10 at Dave Macrae’s shop. Details including directions will be e-mailed to the Period Furniture Group approx. ten days before the meeting. To get on the group e-mail list contact…
John Whiteside
603-679-5443 or johnin fremont@comcast.net

Beginner & Intermediate Group
We will take a break for the summer. Meetings begin again in the fall at my shop in Nottingham, NH. Look for announcements in the Sept. Old Saw.
Bob LaCivita
603-942-1240 or rlacivita@comcast.net

Granite State Woodturners
Meetings are 9:00 am to 1:00 pm on the fourth Saturday of the odd numbered months. The meeting place changes. Contact Jon Siegel to be added to the email notification list.
Jon Siegel – big@proctornet.com

Granite State Woodcarvers
Meetings are held at Rundlett Junior High in Concord every Thursday evening 6:00 pm to 9:00 pm.
Lou Barchey – barchey@comcast.net

Joinery in Non-Traditional Materials
Brian Sargent - Candia, NH
GNHW member and Furniture Master, Brian Sargent shared his style of woodworking with materials other than wood. This ranged from Wacky Wood plywood and MDF to glass and stainless steel rods. Making mechanically strong joinery with these materials required the use of rabbets, dadoes and sliding dovetails connected with anything from glue and screws to biscuits or butterfly inlays. Brian emphasized that no one joinery solution will work on intricate and complex furnishes such as the gallery piece he brought with him.
The crowd asked many questions demonstrating an intense interest in the contemporary materials and concepts that drive Brian’s work. He mixed a smattering of engineering fundamentals with cutting edge design considerations for his trademark curved surface elegance. No question was beyond an immediate in-depth response coming from years of experimentation and pushing the woodworking envelope.
Of course the session ran overtime to everyone’s delight. — Steve A. Olesin

Curved Surface Joinery
David Lamb – Canterbury, NH
David Lamb is an artist who craves a challenge. David wanted to add a new dimension to the design of a demi-lune table and succeeded brilliantly.
He has a great teaching style coupled with an entertaining personality. David took us through the process of designing the table in addition to the details of the joint.
He started from a square blank cutting the tenon on a band saw. He showed how he uses veneer to reinforce the cut blank so he can then turn the leg on the lathe. It is then chopped and pared for a tight fit. David talked about the issues of collaborating with other artists, in this case for the stone inlay used on the table apron.
David not only showed this unique bit of joinery but included insight into the design process used by a master craftsman. If you want to see the completed table, visit the NH Furniture Masters Association at www.furnituremasters.org. — Greg Benulis

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15 South Main St.
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I prefer to remove the waste from dovetails with a coping (scroll) saw, rather than the traditional way of chopping it out. It is faster and more precise if you use the jig described below.

To make the jig, take two identical pieces of hardwood about 3” taller and 4” wider than the piece to be dovetailed, clamp the strips together and drill and counter bore a hole for a ¼” carriage head bolt in the center of both ends. Glue a strip of sandpaper between the bolts on the inside of both pieces. Insert the bolts and then joint both edges to insure that they are even and square. Now the jig is ready for use. After you use both edges of the jig, just rejoint it and use it again.

To use the jig, clamp the piece to be dovetailed in the jig. Be careful to get the top edge exactly on the scribed line at the base of the dovetail pin or tail. Clamp the assembly in the vise with the jig resting on the bench and vise jaw (fig 1).

In this position, the work cannot move with respect to the jig or the bench. Now saw the dovetail down to the surface of the jig and mark the waste areas to be removed with an “X.” This will help prevent you from mistakenly removing the wrong area.

Now you are ready to saw out the waste pieces (fig 2). I use a scroll saw frame with a #5 scroll saw blade – no pins in the end. This is a very fine blade but it can turn from vertical to horizontal at the bottom of the dovetail saw cut making a clean corner and it cuts very quickly. Keep the back of the frame up about 20 degrees above horizontal and you will find that the scroll saw blade will track right along the top of the jig on both sides and little or no further cleanup will be required. If any places do need cleanup, use a sharp chisel with the jig as a guide (fig 3).

This method works best for fine through dovetails, such as those used in small boxes, clocks and drawers. Try it — You’ll like it!

Note — Fine scroll saw blades must be inserted in the frame with the teeth facing the handle so that it cuts on the pull stroke, otherwise the frame will bend and the blade will break.
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