

OREGON WOOD WORKS



Tool of the Month

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SHIFTING GEARS, THE GOOD LIFE

LEE JOHNSON, PRESIDENT

This is going to be a short piece, because I am writing to let all of you know that I am stepping aside as President. It's time to retire. Bob accepted the Vice President nomination a short time back knowing that I wanted to do this. As defined by the by-laws, through the vacancy of this office, he will now become the Guild President of the Guild.

There is always a temptation to reminisce about time spent in such duties. Generally, that's to make it seem as though we who are leaving accomplished more than we did. I'm going to pass that temptation just by saying we did some stuff in the last three years that was fun.

And I don't expect to disappear. The Guild, by and large, has been very good to me both personally and professionally. On the latter point, I'm surprised when I hear professional wood-workers say there is little in the Guild for them because it has become an organization which is predominantly hobbyists.

For my \$45 per year, (instead of \$50+ per month). I get a website to which I can refer people to see my work, I get a listing on our website stating the kinds of work I do. And I have, oddly enough, gotten my rent money for the last couple of months with some little jobs off the Guild website -- it was slow to start, but I'll be darned if it isn't producing some work.

The mentorship program in its various forms has also been extremely good to me. Whenever anyone comes to me for some help, I have to do a

OUR NEXT MEETING—JULY 16, 2008 7:00PM

The July meeting will be at Franklin High School, 5405 SE Woodward St., Portland

Genesis McKiernan-Allen has will give a presentation about The Rebuilding Center, a non-profit group in North Portland that strives to keep perfectly good material from being destroyed. They sometimes dismantle old buildings and the like. They have a division that uses these materials to create new artful pieces for sale. While wood is a large media that they use, other items, such as doors, windows, and sinks, are available for re-use as well at very reasonable prices.

Directions: Take SE Powell to 52nd, turn North to SE Woodward, then right on Woodward; the shop is on the corner on the left.

Social time starts at 6:30.

Board meeting at 5:30

WIDEN A GROOVE

BOB OSWALD

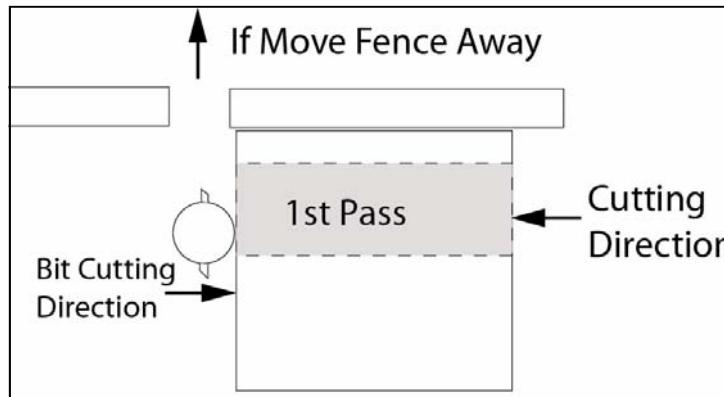
The router is a fantastic tool for making grooves. Flat bottoms, blind cuts, many things a table saw can not do make it the right tool. And it lends itself to any width groove; just start with the widest bit that's narrower than your cut and make two passes. You set the fence so the bit is aligned with one edge of your cut (your pencil line if you will) and make a pass. If you have several pieces, you make the first pass on all of them. Then move to fence to widen the cut on the second pass. But there-in lies the rub !!

Most people, perhaps that should be 'many' people, or perhaps even just 'a few' people will calmly move the fence and start the second cut. You now have a 50% chance of an accident, and a significantly higher percentage if you know Murphy very well.

In one case, when the fence moves, you will be pushing against the cutting edge of the bit, a good thing. In the other case, you will be pushing in the same direction as the active cutting edge. In this case, in the blink of an eye, the piece will disappear from your grasp and stop at the far wall of your shop, or against any other object in its path.

Observe the diagram. If you move the fence away from the bit, you will be pushing against the active edge. This will be a normal cut and all will go well, assuming you hold the piece firmly, pushing it against the fence, as you would normally be doing anyway.

But if you move the fence towards the bit, as the bit comes around, the active cutting edge will grab the board and take it away from you (assuming you just push it right to



left as is standard). If you plan your cut, you'll make the first pass such that you move the fence away from the bit for the second pass. This doesn't always happen. In this case you can and should feed the piece from the opposite end, that is from left to right instead of the usual right to left.

Note: This is no more dangerous than making any router cut. You must hold the piece as you normally would, firmly and against the fence. The risk is that it can be a little disorienting since you're approaching the cut from the opposite side, not from your normal perspective.

Many people have experienced the situation mentioned here, and typically it just increases their anxiety and fear of the router. It's not necessary to be afraid of it, just respectful as with any power tool. It IS necessary to understand how it works. Hopefully this article will enlighten someone.

You might want to do a little inspection of the process to assure yourself that you understand it. The way to visualize this cut is to set up for the cut as planned. Then manually rotate the bit as you push the wood against the bit. It should be obvious that either the bit will push the wood back against you, the right thing or it will take it away from you.

In many router cuts, there is only one side cutting, so this situation is fairly common. Test to see which way the bit is approaching the wood. Plan to push against it.

The general rule of thumb on a router table is to push right to left, like a table saw. But many times this is not the correct approach.

STOP THE LEAK

BOB OSWALD

It's hard enough to capture all the debris that flies out of, through and off the table saw. And to make matters worse, in a closed cabinet saw, there's that huge air leak where the tilt mechanism operates.

Here's a very simple, very cheap trick to temporarily, permanently solve the problem, a piece of magnetic sign material. You can get this at many sign shops, check the yellow pages.

Put a piece wide and long enough over the slot. When you tilt the saw you can cut it in half, cover only half, or ig-

nore the leak for the short time you typically cut a bevel.

Easy to apply, easy to move.



LET THE CHIPS FALL

BOB OSWALD

This project appeared last month in one of the many woodworking magazines I read. I've wrestled with chip collection at the drill press for a long time. I've tried a number of solutions, typically with a hose near the bit held in place with clamps. Admittedly I never took the time to build a sort-of-permanent jig to hold a hose, primarily because a top-side hose was always in the way and it didn't pick up the heavy stuff, like Forstner fall-off.

This idea looked like the answer and I'm happy to report that I like it. I didn't take the time to make it especially fancy; this one has no ends on the tray and it's clamped under the drill press table rather than permanently attached.

It appeared through experimenting, that permanent attachment would likely obstruct movement of the table in some of the things I do. The end caps turned out not to be necessary. Or more appropriately, I didn't want to bother with them since they added little value and the fixture was already clamped in place.



The fixture is just a scrap of 3/4" plywood with a 2 1/2" hole in the center, a scrap of 3/4 square glued/screwed across the front, and a 2 1/2" dust fitting screwed to the bottom.

At first I was disappointed that it didn't sweep the whole table clear by itself. But if it had that much suction, I'd probably lose a wrist watch. In reality, it's become a pretty natural motion to just sweet the chips to the tray in front and keep on working. Give it a try. Keep it simple.

One improvement however would be to make the bottom out of two pieces of plywood, sloped down to the center, so the chips would have more tendency to disappear more readily. That's a future option on a slow day in the shop.

Life is a gift.

We're not here forever.

Make your time count.

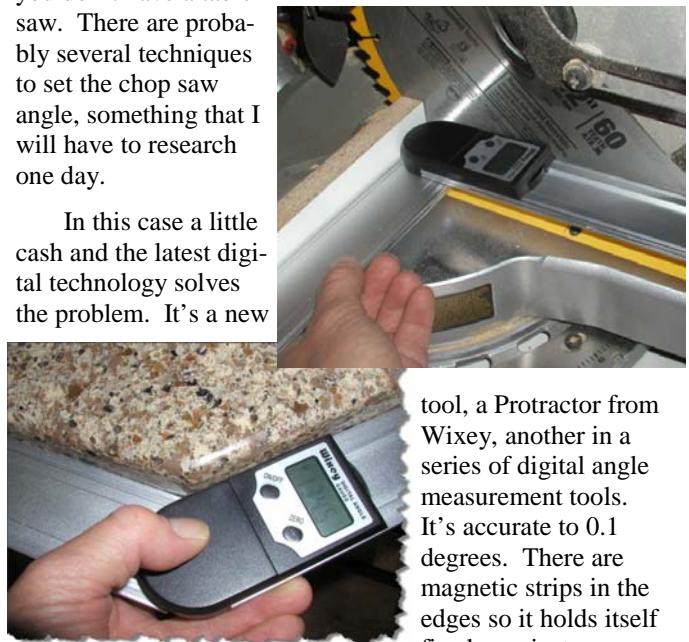
--- Norm Acker, a recently departed friend and woodworker

TECHNOLOGY: WIXEY AGAIN

BOB OSWALD

Someone asked the other day how to get the chop saw set at a true 45 degrees. It happened to be dealing with that old picture frame world again, how to get a decent, tight corner. We discussed making a miter sled for the table saw. All well and good, and a great solution, unless you don't have a table saw. There are probably several techniques to set the chop saw angle, something that I will have to research one day.

In this case a little cash and the latest digital technology solves the problem. It's a new



tool, a Protractor from Wixey, another in a series of digital angle measurement tools. It's accurate to 0.1 degrees. There are magnetic strips in the edges so it holds itself firmly against a saw blade.

This device works for measuring any angle, in any plane, horizontal or vertical. Notice the photo of my counter top. It was cut with a water jet and laser guide—134.5 degrees. Pretty cool. For this counter top, I measured all the angles and they did add up properly to the front and back edge of the counter being parallel to each other.

THE WALRUS AND THE CARPENTER

LEWIS CARROL

This popped into my head recently. I don't know why but thought some of you might like to look into it. I finally read it at length and perhaps more appreciate it as an adult. Interesting poem. What IS on the other side of the Looking Glass?

"The time has come," the Walrus said,

"To talk of many things:

Of shoes--and ships--and sealing-wax--

Of cabbages--and kings--

And why the sea is boiling hot--

And whether pigs have wings."

And it goes on.

THE GUILD LIBRARY

RICHARD HALL, LIBRARIAN

G'd like to introduce our new members to the library, and re-acquaint some of our older members with the features of this resource.

This is a free resource for ALL Guild members! The library currently consists of over 200 books, about 70 DVD's and VHS Videos, some software and scores of magazines, mostly Fine Woodworking and Fine Homebuilding. A selection of the library is brought to each meeting, where you can browse and borrow. Just fill out the library card for each item and give the card to me.

There is a two item limit, but under extreme circumstances I have been known to look the other way. This is expected to be the exception though.

Items are due back the next meeting. If you can't make it, email me. If I need the item, I'll ask you to either mail it to me or drop it off somewhere where I can pick it up. If there's no one waiting, it will be ok to go one more month. Do remember, there is a penalty that can be invoked. Two months is the limit however, so if you're going to be away, take that into consideration before borrowing.

There are a lot more books than show up at the meetings. To see what is available, check the list on the Guild website. If you find something you want to borrow, email me with a request. If it's available, I'll bring it to the next meeting for you.

Eventually the website listing will improve with better descriptions, recaps, and cover photos. You can always look up a title on Amazon.com; they will usually have a pretty good description, and sometimes ratings.



The library grows. We just had a fabulous donation of a book by Tage Frid. And in rummaging through some old bins I found a stash of magazines that never made it into the list, so you'll see those showing up.

The Library maintains a subscription to Fine Woodworking, but I don't always see the issues right away. If there is something of particular interest to you, email me. If it looks like a fit for the membership, we'll make the effort to acquire it.

I have embarked on a project to archive all of the Library's VHS tapes. First off, the tapes are fragile and will deteriorate with time and use. Second, fewer members have VHS players in their systems. So, slowly I will be transferring each tape to DVD. This will ensure the original tape stays in good condition and it makes more titles available for use with members who don't have a VHS setup any more. Once a DVD is made, the tape will no longer be circulated. If there is a particular tape you'd like to see archived sooner rather than later, email me and I'll move it up the list.

I am looking forward to a Guild building project this summer, to build some dedicated library cases that can house the whole collection. Tentatively, they would be kept at Franklin where most meetings are held. The downside is I won't be hauling a browsing box to meetings held at other locations, but I would still retrieve special requests. The upside is that all library items would be available directly to members, at most meetings, rather than just a select few.

Take advantage of this great resource

LOCK MITER FORGIVENESS

DYLON LYONS

I remember reading your article about lock miter bits in the newsletter. I recently purchased one for 1/2 inch material but did not purchase the set up block. After struggling for about an hour, I looked for some instruction. I tried the attached set up and it worked the first try without any additional adjustments. It states that it is specifically for these bits but I think that it will probably work for others since it is all the same principle.

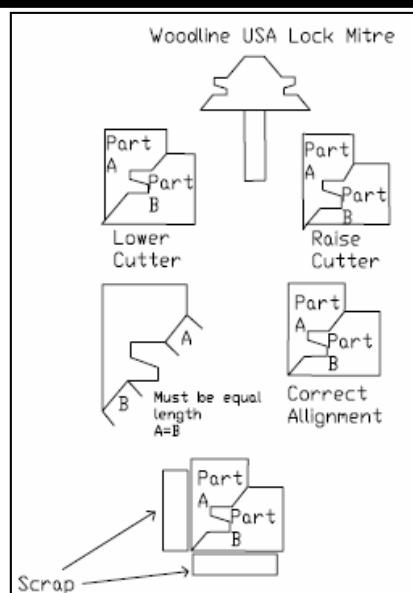
— condensed from Whiteside —

Adjust the router height until the centerline of the cutter aligns with the centerline of the stock. An easy way to find center is to miter a sample, cut into two pieces, rotate one piece and fit them together. Adjust the height for 1/2 of the error.

Set the fence back from the leading edge of the bit a distance equal to the stock thickness.

Do a test cut and make adjustments according to the figure.

Material is cut horizontally for the A side, vertically for the B side.



OUR LAST MEETING: ROCKLER WOODWORKING

BOB OSWALD

Rockler Woodworking was our host for this month's meeting. A more gracious and generous host would be hard to find. Joe Cornett, manager, Carl Etherton, assistant manager and Don provided a program of three different demos .

Plenty of cookies and drinks, much enjoyed and greatly appreciated

Joe review finishing techniques, from prep and stains to top coats and differences in application. A great handout summarized the principles of finishing extremely well.

Don demonstrated the Beadlock® system. A loose tenon jig that only requires a hand drill. Fast and easy.

Carl explained features of the Kreg® pocket hole system.



Joe raffles prizes



Don - beadlock mortise



Carl explains the K3

A VERY GOOD CLASS

REGIS DE ANDRADE

I just completed a hand tools class at the Northwest Woodworking Studio. We built a blanket chest. At first glance the class looked like a beginner's class. In my opinion, it is an intermediate class. You also can make it as advanced as you want since there is some freedom of design. You could add carvings, inlay, whatever you want, as long as it possible to finish the project in 10 weeks.

For this class we were given alder for the frame and plywood for the panels. I used the alder, but decided to make panels with solid wood. Jatoba looks a lot better than plywood .

I also used only hand tools for this project. In the beginning, it would take about 30 minutes to cut a tenon and make it fit, but after my 10th tenon, it was taking only a couple of minutes. I can now hand-cut a tenon with only a couple of passes with a shoulder plane to make it fit. Some would say that it is a lot faster and more precise to use power tools to cut mortise and tenons, but with practice, hand tools can do the job just a precise and sometimes even faster. I'm sure I can do it faster than with my power tools.

For my first tenons, I would start the cut on the waste side and then adjust it to fit the mortise. But it would take a



long time to bring the tenon to the right thickness. So, as I cut each tenon, I would cut it closer to the line, until I was cutting right on the line. And they were perfect. Some minor adjustments and they were done. I guess practice is what it takes. And don't be afraid of making mistakes.

Another lesson learned was about hard-wood. Have you ever tried to plane a 30"x20" Jatoba board ? After a couple of frustrating starts, I could finally plane it without tear out. I learned how to tune and sharpen my plane to work exactly how I want it to work.

Also, try sawing this wood by hand. It is hard work. I have two Diston D-80s, one for rip and one cross-cut, 6 or 7 TPI. Still, it was hard work, but the wood cuts clean and doesn't let the saw wander much. Now I can saw a pretty straight line without much waste. A couple of passes with a jointer plane and the edges were perfect.

A really good thing about taking these classes is that Gary is always around, so you can ask him questions about the techniques you want to apply, or even questions about other projects .

All in all, I am very satisfied with this class. It was one of the best classes I have taken at the Studio and well worth the investment.

MAKING A SPINDLE

BOB OSWALD

Inherited this old rocking chair, or perhaps more accurately, pieces of one, from a nice lady in Tigard a while back. My promise was to restore it, not let it turn into firewood.

Having never done a real ‘restoration’, I took it on as a challenge. It sat in my shop more of a year, waiting for the right time to tackle it. Both rockers split, seven of ten arm spindles missing, bottom seat missing and the bottom frame broken. At least once I wanted to say “why bother”, but it’s a beautiful thing, hand carved back and arms. Very elegant.

The most daunting first step was to make new spindles, easy for the turners, a whole new adventure for me. My turning skills were extremely limited at best. My best friend was the parting tool and I have done a surprising number of small projects using it and a dull bowl gouge.

So tackling the first spindle with the parting tool, it came out kind of ok, but it took forever and it had chip-outs at a few cross grain places

I talked with Chris at Rockler a bit and he introduced me to the roughing gouge and the fingernail gouge. Of course, with no instruction in their use I made hamburger out of another spindle. With quite a bit of experimenting with grip, it started to make a bit more sense and do a better job. A few more words of advice from Chris to more finely tune the technique and chips really started to fly. I can’t believe how fast a roughing gouge can move wood.

Now, this is NOT an article on how to use lathe tools. I’m still a rank amateur and there are many places to learn the right techniques. Rather this is a sharing of the process that evolved in making a spindle. It’s meant to motivate you to go try it. Something with a lot of curves like this looks daunting, but it’s not all that bad. But it was not obvious what sequence to follow. The one described here evolved between spindles 4 and 6 I think, and it worked well for me. There are other approaches I’m sure.

First step, make a story board. Duplicating a significant number of things requires a pattern of some kind. The marks on this one are the key points on this particular spindle. It took a few to get used to what to cut first but eventually a pattern emerged.

The dowels, roughed out of one-inch square white oak, rounded on the router table, gave a good starting point. I chose to pre-round them because it was very easy to do and made the first lathe step smooth, instead of blasting off the corners. With what I know now about the roughing gouge, I would start with square stock.

Start with the roughing gouge, turn the one-inch stock into a smooth 3/4” rod. Stop the lathe from time to time to measure and check your progress. Eventually I was turning

‘barrels’ to 0.750 plus or minus a few, and very uniform along the length.

Mark the key points with the template. Double check position of the marks with an original spindle. Spin up the

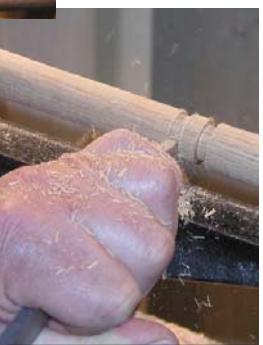
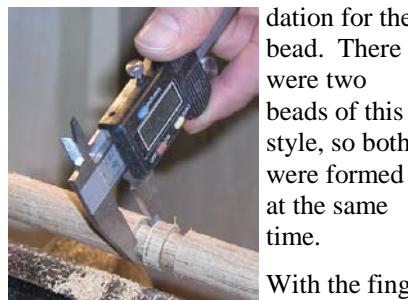


piece and darken the pencil lines.



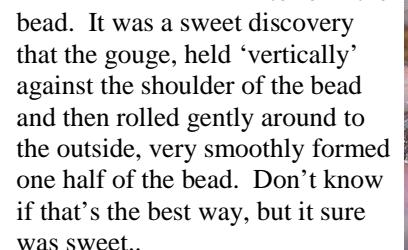
Mark and verify key points

With the parting tool, turn shoulders to the correct dimension, 0.45 in this case, to form the foundation for the bead. There were two beads of this style, so both were formed at the same time.



Preparing the bead

With the fingernail gouge, turn the bead OD to 0.67. Then roll the shoulders to form the bead. It was a sweet discovery that the gouge, held ‘vertically’ against the shoulder of the bead and then rolled gently around to the outside, very smoothly formed one half of the bead. Don’t know if that’s the best way, but it sure was sweet..



Rolling the bead



Another progress check

(Continued on page 7)

MAKING A SPINDLE (CON'T)

BOB OSWALD

Now turn the reference diameters for the compound bead. I don't know what this formation is really called and couldn't find it in the great encyclopedia. So I'll call it the C-bead here.

This bead has one concave side and one convex side. It looked daunting at first but it's a matter of approaching each edge from the proper direction. It makes a nice looking formation when you're done. Resist, as I finally learned to do, cutting too quickly. The cross grain sharp edge fractures easily, even with a good tool. This is a very gentle cutting time and slowing down began to produce nice results.

So the C-bead is formed by rolling the fingernail gouge from left to right on the convex side. It is easy to cut the concave side because it's a basically a straight cut. You don't have to roll down the edge.. Just slide down the slope, approaching the center bead, tangent to the reference diameter cut as part of that bead..

Finally the remaining stock is quickly removed with the roughing gouge, forming the bulbs that taper out to the end.



Forming the C-bead



Rouge the remaining stock.

I have a tendency to leave things a little proud, a fear of under-cutting that I'm still trying to overcome. The end of the spindles is supposed to be 3/8". I can only assure you that if you turn them to 0.377, they will not fit in the 3/8" hole waiting for them, and they will have to be hand sanded.



One end; the finished formation

Finish it up properly on the lathe. Believe in the dimensions. It's a lot faster.

On #10 spindle, elapsed time from start of roughing to ready to sand, 20 minutes, including time to snap the photos for this article. Incredible for me.



Looks pretty much like the original !!

SHARPENING GOUGES

BOB OSWALD

The wet grinder hasn't been getting enough use lately, which means tools are getting dull. The big lathe project this month required some serious attention to sharpness. The gouges needed dressing as soon as they came from the store, and a few times during the project.

The roughing gouge is pretty easy to sharpen. The fingernail gouge needs a jig to roll it through the proper arc. A number of website articles described how to make a jig and how to use it. Time and effort made the decisions to convert a bit of cash into a jig for my sharpener was much faster and easier.

Not knowing was I was doing earlier, I had started to put a roughing gouge edge on the fingernail gouge. Good grief you're saying, what an idiot!! Big mistake. It doesn't cut for beans. But properly sharpened, it's incredible.

Both gouges perform incredibly well, especially when sharp. The roughing gouge moves a very large amount of material quickly, yet applied properly will turn a near mirror finish when you're ready.



The fingernail gouge does a marvelous job turning beads and any fine detail. You can use it

Sharpening a Roughing Gouge

(Continued on page 8)

TABLE SAWS—THE DIFFERENCES

BOB OSWALD

In 1777, Samuel Miller invented the circular saw in England, the round metal disk type of saw that cuts by spinning and is used hand-held or table-mounted. In 1813, Shaker-Sister, Tabitha Babbitt invented the first circular saw used in a saw mill. Babbitt was working in the spinning house at the Harvard Shaker community in Massachusetts, when she decided to invent an improvement to the two-man pit saws that were being used for lumber production. In 1807, William Newberry invented a band saw.

Benchtop table saws

Benchtop table saws are small and lightweight, designed to operate while sitting on a workbench. They are usually direct drive (no belts). Designed to be compact and light, they can be carried by one person to the job location.

They are the least expensive and least capable of the three major types; however, they can offer adequate capacity and precision for many tasks. The top is smaller, so there is less stable crosscut and rip capacity.

Contractor table saws

Contractor table saws are heavier, larger and have an attached stand or base, often with wheels. The motor hinges off the rear of the saw and drives the blade via a belt using a 1-2 hp motor. This type is often used by hobbyists because of its lower cost and standard electrical power. Because the motor hangs off the rear of the saw, dust collection can be difficult.

Cabinet table saws

Cabinet table saws are heavy, using large amounts of cast iron and steel, to minimize vibration and increase accuracy. A cabinet saw usually has a closed (cabinet) base. They have motors in the 3-5 hp range and typically require 220V. The motor is enclosed within the cabinet and drives the blade with three parallel v-belts.

Being heavier, they offer the following advantages over contractor saws: heavier construction for lower vibration and increased durability; a cabinet-mounted trunnion to control the height and tilt; improved dust collection. In general, cabinet-mounted trunnions are easier to adjust than table-mounted trunnions.

These saws generally follow the model of the Delta Uni-saw, originated in 1939. They are characterized by a cast iron top on a full-length steel base.

The most common type of rip fence mounted to this type of saw is characterized by the standard model made by Biesemeyer. This very sturdy, steel T-type fence mounts to a steel rail at the front of the saw.

They normally include an anti-kickback device that incorporates a riving knife, splitter, toothed anti-kickback pawls and a clear plastic blade cover. Riving knives rise and fall with the blade; splitters are fixed in place without regard for the height that the blade.

They are available with left or right tilt blade capability. While relatively simple in design, these saws are highly evolved and capable of efficient and precision work.

They may have a sliding table to make cross cuts easier and safer.

Hybrid table saws

Hybrid table saws are designed to compete with high-end contractor table saws at a lower price. Hybrid saws offer an enclosed cabinet to help improve dust collection. The cabinet can either fully enclosed from the table top to the floor or a shorter cabinet on legs. Some hybrid saws have cabinet-mounted trunnions and some have table-mounted trunnions. Hybrid saws tend to be heavier than contractor saws and lighter than cabinet saws. Some hybrid saws offer a sliding table

SHARPENING GOUGES (CON'T)

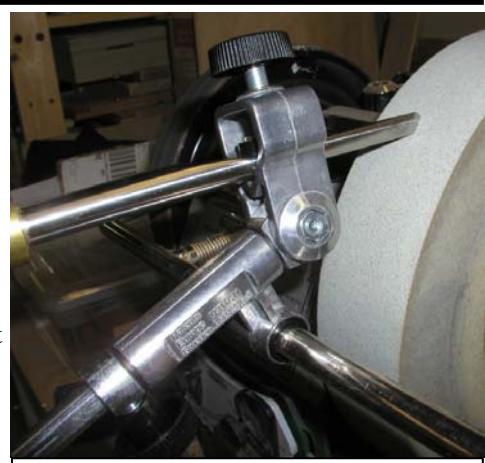
(Continued from page 7)

flat or rolled up on edge to "pierce" the work and cut very fine grooves. I'm impressed, and a bit more educated.

To sharpen the roughing gouge establish the correct angle and then twist/roll the tool to sharpen it all the way around.

To sharpen the fingernail gouge, it must swing in an arc as controlled by the jig in the photo. Setting the jig requires a couple of adjustments but it goes quickly.

You professional turners out there may find plenty to critique here. Write me an article for publication about any aspect you can share with the rest of the Guild.



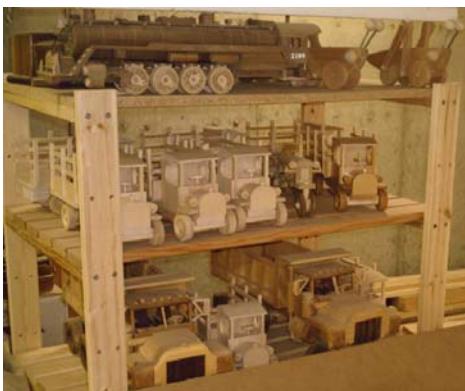
Fingernail Gouge Jig for Wet Grinder

SHOP TOURS: BOB OSWALD

BILL WOOD

I am in Gaston near Forest Grove at Bob's home. Perched near the tree line up a long gravel road sits Bob's contemporary styled home which he designed. The view of the valley from his home is awesome.

Mr. Oswald's education and job history are impressive. Originally from Michigan, he has a Masters degree in Electrical Engineering. He worked a number of years in the aerospace field and also worked at Tektronix for 18 years before finishing his career in a few high tech startup companies. These days you might see Bob at Rockler where he works a few hours a week, probably just to get a discount on more tools.



His hobbies are many and varied from building wooden model toys & furniture to camping, sailing, hiking, and reading. And, do not forget, the creation, editing and writing of this Guild newsletter.

A current project, just finished, is a hall table made of maple burl and Peruvian Walnut (see picture). When he started the table he had just finished Bill Bolstad's class. First, he made a model of the project to determine final style and proportion, prior to ever cutting a piece of high priced lumber. When satisfied with the final design, he built the finished piece.



Working with his dad in construction as he was growing up, Bob feels he has been a woodworker all of his life. Bob joined the Guild at the 2003 State Fair and has worked ever since in building hardwood furniture, cabinets and special projects. He rates himself as an intermediate level woodworker.

He has about a 1000 sq. ft. shop and it is filled with tools. The first tool, 35 years ago, was a Sears Radial Arm saw, followed by a bandsaw. Today, he has three bandsaws

and three drill presses he uses so he doesn't need to tear down a setting in order to perform a different task. Each tool is allocated to a different part of the project. Jet equipment is the favored brand for his lathe, jointer, 13-inch planner, and more. The "favorite tool" is his router and router table with Inca jig capability. Utilizing casters on tools maximizes the Oswald shop space and the tools are placed according to the workflow of each project.



I think he needs more room; all I see is more and more tools too numerous to note.

Bob's biggest challenge is in fixing mistakes. An example occurred recently when he ran a screw

from the leg supports of a table through the tabletop. How do you fix a screw hole in a tabletop? After removing the screw you place each fractured splinter back into the hole with much patience.

Bob has learned to like sanding and finishing. He says, "It is because you can see the beauty slowly emerge from the project as you work". Talking about beauty, as I was leaving his homestead the view of the valley floor below was fantastic.

Thanks for the hospitality, Bob.



The Guild of Oregon Woodworkers is a group of professional and amateur woodworkers like you, committed to developing our craftsmanship and woodworking business skills. The Guild offers many benefits for members, including:

- monthly educational meetings
- monthly newsletter
- mentoring program to help members develop their skills in specific areas
- discounts
- woodworking shows
- network of business partners (the key to our development as members and as a Guild, providing additional learning opportunities)
- and a network of support.

For information on how you can become a member, see the Guild website listed below.

GUILD OF OREGON WOODWORKERS

P.O. Box 13744, Portland, OR 97213-0744

CLASSES, SEMINARS, DEMOS, AND SUCH....

Northwest Woodworking Studio 503-284-1644, www.northwestwoodworking.com

Rockler Woodworking 503-672-7266, www.rockler.com

Oregon College of Art and Craft 503-297-5544, www.ocac.edu

Woodcraft 503-684-1428, www.woodcraft.com

Woodcrafters 503-231-0226, 212 NE 6th Avenue, Portland, www.woodcrafters.us

THE GUILD IS PROUD TO BE SPONSORED BY:

Emerson Hardwood**



Hardwood Industries **



Lumber Products **



Woodcraft**



Barbo Machinery



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Rockler Woodworking

SUPPORTING:

Woodcrafters, Portland

AFFILIATES:

Northwest Woodworking Studio
Oregon College of Art and Craft

- ◆ Some sponsors offer discounts to current Guild members. See the website for details.
- ◆ ** Scholarship Sponsor



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We're on the Web!
www.GuildOfOregonWoodworkers.com