

# OREGON WOOD WORKS

## THE END OF ANOTHER YEAR

GIG LEWIS, PRESIDENT

I hope that all of you enjoy this New Year, 2014. We really do have some wonderful opportunities here in our part of the Northwest.



thoughts on what you would like to see happen.

My email is [giglewis42@gmail.com](mailto:giglewis42@gmail.com)

And remember that a donation, prior to the end of the month, to the Guild is a tax deductible event saving you money on your taxes.



That said, what do we want to do with the opportunity that has been presented to our Guild. Where do we want to be in 3 years, 5 years, and even 10 years from now? Our membership will be over 500 woodworkers very soon. How are we going to handle this many members?

Yes, we need to do some planning and get some ideas working towards some unknown future goals. Our Board of Directors needs your help in this guidance. Please email me with your ideas on HOW and WHERE you want our Guild to be in the years ahead.

We will be putting together a 3-year, a 5-year and a 10-year business plan over the next few months and would really appreciate your

*Let there be peace on Earth*



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NEXT PROGRAM — THURSDAY, JANUARY 9, 2014 7:00PM

## ENHANCE WOOD WITH METAL

The Guild Shop, 7634 SW 34th Avenue Portland, OR

Chuck Wissler will be demonstrating how he cast a new light on his woodworking projects using metal accents. Chuck will go over his process for accomplishing the metal inlay into his woodworking including; design considerations, materials he uses for fabrication, the construction of the casting going from wax to metal and the finishing of the metal. This will be followed by the final step of attaching the inlay to the woodworking project.

Marcus Flanders will show you the process he uses to do wood inlays, how he chooses the wood and how he makes sure he has the right grain. He will demonstrate the tools he uses to create the pocket for the inlay and finally how he meticulously fits the inlay into his work.

Social time and new member orientation begins at 6:30

NOTE: There is no parking at the Guild shop parking lot. Park on the streets nearby or at the

From the west, Allen becomes Garden home and then becomes Multnomah Blvd.

From the East, off I5/Barbur Blvd, head west on Multnomah Blvd. Then:

To locate the shop, turn uphill, North, on 35th avenue. At the stop sight turn right, go one block, turn left. Go over the crest of the hill and as you start down, the shop is in the little center on the right. Return to the Multnomah Art Center to park and walk back. Park in both front and back of the Art Center depending on construction.

# FLATTEN A TOUGH PIECE

BOB OSWALD

Jointing, planning, sawing, all steps in the process of getting a board or a combination of boards square, flat and true. We often run across situations where these tools can't handle the job. One is a project too big to fit under the planer for example. Another more difficult situation is when the surface has wild grain variations where the cutting tool will tear chunks out of the project.

Burl type stock is one application where the grain varies wildly in direction and defies being tamed by a uni-directional cutter. Another is end grain, such as in a cutting block.

Two solutions exist. The easiest to apply is a wide belt sander. If you have a drum sander big enough to handle the job, that's an answer. Or pay a fee, usually well worth it in my opinion, to have a commercial company flatten it for you. But there's another answer, assuming you have a router and a large diameter straight bit.



Build the jig shown in the photo. This simple jig is just a table with a slot in the top. The router rides on the table, back and forth in the slot. A guide bushing keeps the router bit from touching the sides of the jig. The slot can be quite a bit wider than the bushing to allow some freedom of movement.

The table slides left to right moving your cutting action along the project in the other dimension. The clamps visible on the right and left sides hold two guide rails that contain



the table, keeping it moving smoothly from left to right. It takes a little time but I watched this project done over about thirty minutes and the results were impressive. Ready for finish sand-

# GUILD AT THE PITTOCK MANSION

BOB OSWALD

A tour of the Pittock Mansion last week was an absolute delight. It's been years since Nancy and I have been there and it was worth the trip. Decorated throughout for Christmas, each room had a theme. The opulence of some life in the early 1900's in Portland made me dream of what it might be like. Sure, keep buying lottery tickets.



The Guild was represented this year in their Christmas decorations, a first appearance in another Portland place. Mike Denham and I loaned a number of wooden toys to decorate the child's bedroom.



Gaston High School loaned a mantle clock. The theme was a hand crafted Christmas. The room was overflowing with all sorts of toys. The photo does not do justice to the beautiful job they did. If you have never been to the Pittock mansion, the

display runs until the end of the year, a few more days. For a modest admission charge you can enjoy a glimpse of life in the very early days of Portland.

We did receive recognition on one of the many posters around the home as well as on the big reader board at the front door. It was a privilege to help out in such a fun place.

Mike Denham - Guild of Oregon Woodworkers

Gaston High School 9th grade

Bob Oswald - Guild of Oregon Woodworkers

## FROM THE EDITOR

BOB OSWALD

Christmas Eve, sitting here while good smells emanate from the kitchen, writing a note that I didn't want to forget.

I was reflecting on newsletter articles past, how many I've written, and how each month nine empty pages appear, begging to be filled with interesting woodworking things.

This year end marks over nine years as the newsletter editor. I remember when I took the job, Dean Mattson said, "You don't have to write articles. Just coordinate them and publish them." Was that ever a political sales job!

Not wanting to publish a blank newsletter, I headed for the library and crammed, putting together a few basic articles, which, as I look back, were pretty primitive. But so was my general knowledge of woodworking at the time.

Over time, the articles started to reflect actual experiences, things I'd learned and wanted to share. I love to teach, or rather I love to see people learn, and when you can be a vehicle for that, it's a great reward.

A wild guess makes me believe I've produced around four hundred articles over this time. Writing is a woodworking learning experience in itself. To be credible, you have to be accurate and sure of your information. Often today I'll head to the workshop to test a concept. Of course, internet research (about nails for example) is a tremendous help in today's world.

You learn from writing, from trying to explain to someone else.

There have been a few member articles published over the years also. For that I'm grateful, for two reasons. It helps fill space, and I learn something from another member, always. I love seeing someone else's perspective. It usually triggers thoughts, and sometimes motivates a little bit extra.

And THAT said, it would be a bonus year for the Guild to see more articles from our members. I know you all say "I can't write." I hear it every time I ask someone to share a project or a thought. In my narrow minded opinion, that's just an excuse for not wanting to take the time.

It is definitely true that some folks do write more poetically than others. But the editor's job, part of it, is to edit. That means that, with the author's permission, I'll work out some of the literary bugs. Correct grammar and spelling, restructure a paragraph. In other words, you provide the basics and I'll tune it up.

It benefits both me and the Guild to hear from more of our members. I'm always blown away by the volume and content of our show and tell sessions. A few paragraphs about that project you just finished would be so welcome..

There's no limit to the size of the article. A good article is one newsletter column long, Reader's Digest style. A full page is absolutely great. Much longer and you have to be a good writer to draw the reader all the way to the end.

Help me make 2014 a Guild Member Experiences year.

## A SPECIAL INTEREST

We are pleased to announce that the Guild of Oregon Woodworkers is starting a Special Interest Group (SIG) just for Beginners in Woodworking.

The group is open to any Guild member who is just starting in woodworking and wants to learn more about it. The group will be directed and run by themselves. They will pick what topics, and activities they want to cover. Find out about how to set up shop or how to buy used tools. Ask questions. Share ideas, projects, issues, insights. The Education Committee will provide support for the group but it is self run.

The first meeting will be Wednesday January 15th at the Guild Shop, 7634 SW 34th Ave, starting at 7:00pm. At this meeting we will begin organizing and picking topics for future meetings. There will be demonstrations on finishing

## 2014 BOARD OF DIRECTORS

### Officers

President: Gig Lewis  
 Vice President: Austin Heitzman \*  
 Secretary: Steve Poland \*  
 Treasurer: Roger Crooks

### Committee Chairs

Membership: Larry Wade  
 Meetings: Jim Madaras  
 Shows: Ariel Enriquez  
 Communications: Bob Oswald  
 Community Projects: Don Cline  
 Education: Chip Webster  
 General Member at Large: Norm Baird  
 Professional Member at Large: Bill Bolstad

Election of officers for 2014 occurred at the November meeting.

\* As specified in the bylaws, advance notice is required prior to an election. Austin Heitzman and Steve Poland were not officially elected at that meeting. No-

## BOARD MEETING MINUTES

The board of directors of the Guild of Oregon Woodworkers meets monthly before the general meeting. Minutes of this meeting are available on the Guild website at

[www.GuildOfOregonWoodworkers.org](http://www.GuildOfOregonWoodworkers.org)

Click the "Board Minutes" entry under Members Only.

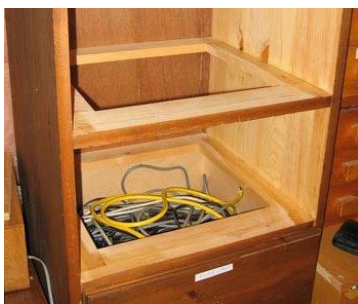
## Drawer Slides, Choices

BOB OSWALD

A drawer is a box, and there are quite a number of ways to make that simple box. Similarly there are quite a number of options for how to get it in and out of the hole it's designed to fit. Drawer slide variations range from expensive commercial to exotic home made. Here are some options

### Wood on wood

The drawer sits on a shelf or a configuration as shown in the photo. This is probably the simplest and cheapest to make. They work well in places where use is only occasional. The biggest inconvenience is that when extended only a little ways, they tip forward until the back of the drawer hits something above it inside the cabinet. This configuration



needs guide rails at the bottom, which could be the sides of the cabinet, to keep the drawer aligned as it slides in and out.

A variation shown in the left photo has simple rails attached to the cabinet walls. The walls keep the drawer aligned.

You can improve life and reduce friction with Tef-

lon tape or pads on the rails. An advantage here is that the rail above the drawer side keeps the drawer below from tipping as it is withdrawn.

### Drawer slot on side rails



This is also inexpensive to make in that it uses no external hardware. It works well for supporting the drawer as it is pulled out of the cabinet. Care in construction is required to keep the tolerances close. If the fit is too loose, the drawer tends to bind when pushed back in. 1/16" clearance on each side is the goal. It takes some

care to get the rails parallel, at the same height, and spaced vertically. A dado slot in the cabinet wall on new construction makes that easier.



### Center Guide Rail

You can make your own rail or purchase a metal one with bearings. This rail requires a cross piece at the front and back of the cabinet to support the rail. The drawer sides ride on the front cross rail and the back is supported by the center rail. The center rail also provides the alignment. Use of a sliding dovetail keeps the drawer from tipping to about 3/4 extension.



### 3/4 extension under mount

These are the cheapest commercial drawer slides, available at nearly every hardware and big box store. They mount to the side of the cabinet and the bottom corner of the drawer. Advantages include roller balls for smooth operation and the drawer is captured for no tipping. These slides are 3/4 extension. The drawer width must be an inch narrower than the opening to allow for the slides.

### 3/4 and full extension side mount

A bit more expensive but offering precision and very smooth operation. These slides are 1/2" thick. Mounting is easy if you draw a line on the cabinet wall and a matching line on the drawer. Determining the height of the drawer line can be a little tricky, so



# NOSTALGIA, MAKE AN APPLE CRATE

BOB OSWALD

A while back, some project now forgotten, triggered thoughts of the old apple boxes, made of wood, that I grew up with. A little research uncovered a fairly consistent set of dimensions. I wanted one. It's 'obviously' pretty simple to build and it became a Saturday morning project. It's hard to believe lumber and labor were sufficiently plentiful to produce millions of these crates in the bygone. All are replaced today

by machine folded and bent cardboard boxes or equivalent.

The typical overall dimensions are 20 x 14 1/2 x 11 1/2 inches as shown in the photo.



Construction is pretty simple but it takes a surprising amount of lumber, three board feet for the ends and two bf for the slats if you split a 3/4" board. If you're conservative, you can get 3 slats per resaw, especially starting at 4/4. Anyway, building one is well worth the price. I used poplar.

Alder would work well, both being cheap and in great supply at our sponsors. Glue and pin nails made assembly take about five minutes

Quick research on apple crate logo's produced dozens of beautiful themes. It was a colorful period in our lives. Labels available for purchase weren't the right size. The one I liked belongs to a fruit grower in Pasco, Washington. I contacted them about the copyright question. Surprisingly and to my great delight they responded within a day, excellent customer service. And the copyright had long ago expired so they said to feel free to use it. An ink jet print attached with contact cement seems to be holding up well.



# Guild Holiday Party

JIM MADARAS

The Guild had its annual Holiday event, put together once again this year by Jenny Jecmen, Thank you, Jenny.

There was plenty of good food to go around including the two Honey Baked Hams contributed by the Guild. Others



ers brought a dish to pass and no one went hungry that night. There was a fun gift exchange where many brought items they made. A good time was had by all. The holiday spirit was definitely present. Gig reviewed what the Guild had accomplished for the year and things that we are looking forward to accomplishing in 2014.

Have a great holiday time and a Happy New Year. See you at the next Guild meeting at the shop on, Thursday, January 9th, 2014

when two of our members will be going over the process they use to incorporate inlays into their projects. By the way, we plan on having chairs for all of



## GETTING THE MOST FROM GUILD WOODWORKING

The Guild has added many new members over the past months, due in large part to the opening of our new shop in Multnomah Village. For the Education Committee, having dependable access to a wood shop has greatly simplified the task of scheduling classes. The line-up of classes continues to expand, offering topics of interest to a broad section of our members, some of whom have never attended a Guild class. Here are some tips to get the most from that experience.

### Selecting a Class

Class listings are posted on the Guild's web site under the "Classes" tab. Each listing offers a brief description of the class, the instructor's name, costs, and other pertinent information. Read these descriptions carefully; they are written to provide the most information possible without being too wordy. Class descriptions aren't meant to be a syllabus – there simply isn't room on the web site for all that text – and most people wouldn't want to read it all, in any case. If you have questions about the class that aren't answered by the written description, contact the instructor. Once you are logged in to the Guild's web site, you'll find email addresses and telephone numbers in the "Members Only" section. Instructors will respond to your requests for information as quickly as individual schedules permit.

### Preparing for Class

An important part of an enjoyable and successful class experience is preparation. Some classes require students to bring their own tools, others do not. Tool lists are generally found in the class listing or are sent to the list of enrolled students in sufficient time for tools to be gathered or purchased. For tools to give you good service, they must be in proper working order. If cutting tools (chisels, hand planes, etc.) are specified, they should be sharpened before class. For many classes, the Guild supplies materials as part of the registration. Other classes (the second half of the Next Level series in particular) require that students prepare materials in advance of the class; it is important that this task be completed. Students who want to bring their own materials to a class in lieu of Guild-supplied stock should check with the instructor. And, once again, any concerns about the tool list and required materials should be raised with the instructor before the class begins.

### Accessing the Shop

The Guild shop is located at 7634 SW 34th. Street parking near the shop is limited; additional parking for Guild members will be found at the Multnomah Art Center, 7688 SW Capitol Hwy. Class attendees are welcome to pull into the shop parking lot to unload tools and materials before class, and to load up afterward. Be aware that other tenants of the shop complex have events running at the same time as classes, and some of these involve children who do NOT watch out for traffic; use caution in and around the lot., in Multnomah Village.

### During Class

A few general guidelines will help you get the most out of the class experience. You are encouraged to bring hearing and eye protection to every class, even if power tool use is not anticipated. Eye protection is **REQUIRED** in the machine room and strongly recommended elsewhere, even in hand-tool classes. Occasionally some stock preparation might be required, and the bench room is not sound-isolated from the machine room.

Enrollment in many classes requires that bench space be shared between two students. Reserve the bench tops for essential tools and materials, and store tool boxes and bags on the shelves below the bench, or elsewhere in the shop. If the class involves the production of a lot of shavings, chips or other debris, you might find it helpful to do some modest clean-up during class. Keeping your work area clear of debris is an important safety factor, especially in a full class where maneuvering room is at a premium.

An important part of shop etiquette involves respect for the instructor and fellow classmates. Woodworkers love tools – but it's really bad form to pick up tools from someone else's bench without asking permission first. If a classmate turns down a request, don't take offense; a tool might be a valuable antique, or might be hard to sharpen; there are lots of reasons why classmates would prefer not to share their tools. The key here is respect and consideration; ask first. That said, instructors will assume that each student comes to class properly equipped with the items specified on the tool list, unless other arrangements have been

Class discussion is a valuable part of learning this craft. Many students are hesitant to ask questions. Here are a few hints that might help. If a question pops into your head, it's probably in three or four others too. Be the hero – **ASK!** Second, try as we do, instructors don't always select the right combination of words to explain a concept or technique. Occasionally we might assume that you know more than you do (which is our problem). Sometimes just re-phrasing or restating information is what is needed, and your question is the prompt to make that happen. Finally, instructors generally don't like to talk for the duration of a class. Interplay is much more interesting for the class and the instructor

### Wrapping Up

At the end of the day, the shop needs to be cleaned. Instructors will leave enough time for this task, and everyone is expected to join in. If the instructor has created shavings or debris during demonstrations, students should take care of this area as well, since the instructor's other responsibilities continue during the clean-up period. No one should expect others to clean up their work area unless this has been discussed and agreed to in advance; students who need to depart early are still responsible for tidying up their bench and surrounding floor space. If the machine room was used during

# 2014 CHILDREN'S TOYS PROJECT

JULIE GREDVIG

Santa's been at work early enough to create a number of great new toys for needy children. These toys have been delivered to KOIN. They were astounded by the quality. Our thanks to Marcus for driving the work (and his toys) and the team.

We had around 17 volunteer's, who made a total of 120+ toys. Robert Vaughn, Leslie Kantor, Dale Price, Dale Marion, Chris Frazier, Chuck Wissler, Jac Arnal, Ray Curtis, Dan Kilduff, Duncan Kretovich, Bryan Kellim, Glenn

individual people of the Guild, but some worked in groups. Gig Lewis had three other volunteers meeting at his house, and over several days, the group of four made 25 doll beds, along with comforters and pillows. On two occasions, several people met at the new Guild Shop, to share ideas, pick up toy designs and plans, and to do some initial layouts of their ideas.

The Guild donated a majority of the wood, but a lot of people bought their own supplies; wooden wheels, axles, sandpaper, dowels, hinges, etc.

It's hard to narrow down the total number of hours spent on this project, but if I had to take a wild guess, it would be around 600 hours, and that may be a conservative figure. Some of these craftsmen spent in upwards of 15+ hours in each one of their toys.

I have to say, I came away extremely humbled from this experience. The quality of these Toys is unmatched by anything you could buy at a store. Every person who helped on this project had nothing but smiles on their faces when each one delivered their treasures to the shop last Monday night. Some may have been relieved to have finally fin-



Seim, Edmund Ferguson, Paul Snowden, Bob Whitney, Paul Hanau, Gig Lewis. (I hope I didn't forget anyone)

Most of the work was done at the shops belonging to the



## NAILS—IN WOODWORKING?

BOB OSWALD

We don't use nails much in the fine furniture aspect of woodworking. I'm not totally sure why. We do sometimes use screws. It's probably because screws have a bit more finesse. You have to drill a pilot hole in a usually precise location. The screw is typically set below the surface and covered with an attractive (or invisible) wood plug.

Nails on the other hand, are pretty crude. Hold it in place and whack it hard with a hammer. On the other hand, half the world, more or less, is held together with nails. I'm thinking of the house I sit in to write this while listening to a couple young men hammering nails into a new roof above my head. It made me wonder a bit about nails.

The lowly nail does have a history and a set of standards. Nails date back at least to Ancient Egypt; some have been dated 3400 BC.

### Why is a nail called a 10d nail?

#### And what does the 'd' mean?

First the designation for a nail is in the units of 'penny'. A 10d nail is actually called a ten penny nail. The "d" goes back to when the Romans occupied what is now England. The "d" is associated with a Roman coin called the denarius, which was the name for an English penny.

There are a few different explanations for this 'penny' unit of measure. The most consistent definition is the cost for a blacksmith to make 100 nails, in pennies.

Today the convention lives, but basically denotes the length of the nail, in a non-obvious way of course. But like anything, when you use a 16d nail a lot to build a shed in the back yard, you get to recognize the length, just like you eventually learn to recognize Cherry or Red Oak.

The chart shows the sizes of the corresponding nail type.

Other theories for the origin of the penny name include:

- ◆ In the colonies, at the time it cost a settler 10 pennies per nail to have a black smith make them in that size.
- ◆ It was based on the number of nails of that size in one pound. In time this came to be mispronounced until it became "penny". A ten-penny nail weighed 10 pounds (pennies) per thousand nails.
- ◆ Nails are called by penny weights. So a ten penny nail would weigh 10 pennyweights.

By the way, gold and other precious metals today are typically measured in pennyweights. A further bit of trivia is that there are 24 grains to a pennyweight and 7000 grains to a pound. And gunpowder measured into a cartridge is meas-

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## WELCOME NEW MEMBERS

BOB OSWALD

Welcome to all of the following new members in chronological order:

Fred Barbee, Neil Gribskov, Tim Moore, Mike Bliziotis, Eric Johnson, Candace Tillman, David Greene, Edward Hutchins, Harry Walles, Andrew Conti, Ian Wollman, Jeff Hill, Fiaindratovo Manavihare, Strother Hill, Diane Jenkins, John Abbott, Lucas Swick, Mike Phillips, Bryan Long, Tal Danan, Ross Bloom

We hope you'll make a regular appearance at the monthly programs where you'll learn a lot more about woodworking as you meet and talk with people. We're happy to have you with us. Say hello to an officer at the next meeting so we

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## BITS OF AMERICA

BOB OSWALD

United States flag law does not specify the proportions of the flag. The proportions of 10:19, so often quoted, are the product of an executive order of the president, and are actually binding only in certain military uses. The United States government buys and uses flags in several other proportions (2:3, 3:5, 5:8) for numerous civilian and military applications. Private citizens are free to use their own judgment.

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*The U.S. Constitution doesn't guarantee happiness, only the pursuit of it. Your have to catch*

### Nails for Light Construction

Size	Length (in inches)
4d	1-1/2
6d	2
8d	2-1/2
10d	3
12d	3-1/4
16d	3-1/2
20d	4



# THE JAPANESE SAWHORSE WORKSHOP

CHIP WEBSTER

## Build Your Hand Tool Use Competency

Beginning this year our Education Team has undertaken to design workshops and classes that take direction from the results of the survey we conducted earlier this year. We found our members, among other things, favored:

- week nights over long weekends with time to catch up and practice between sessions,
- hands-on experience in the workshop with guidance from the instructor,
- a focus on building hand tool competency, and
- a useful object at the end of the learning experience.

Starting on January 8th and running for five sessions, Alexander Anderson will lead a workshop focusing on hand tools in combination with power tools, and using Japanese Sawhorses and Beams as the teaching vehicle. Students will end up with not only new



skills but a very useful end result for their shop, a good set of sawhorses and beams.

The horses will range in height from 27" to 32" and the beams in length from 6 feet to 10 feet, depending on preference and intended use. The horse and beam combination can be used in a multitude of ways, for finishing, mock-ups, dry-fit, and glue up and assembly and they can be knocked down for storage. If you have taken the Basics of Woodworking series of classes, you have seen them used in Alexander's "Stress Free Glue-up and Assembly" class.

The fee for this intermediate level workshop series is \$300, including the materials (\$100), which will be cedar. However, if you have 8/4 lumber for the legs and approximately 4" square material in sufficient length for



the beams, the \$100 material fee will be waived. Please discuss this option with Alexander at 503.593.4423 for suitability of your lumber material.

This workshop has a particular focus on mortise and tenon joinery, including a haunched mortise and tenon and the sloping mortise and tenon known as the Shitage-Kama joint shown in this short video <http://www.youtube.com/watch?v=pljjJzXzzww>. With a combination of hand tools and power tools, this class will help build your woodworking skill set, as well as building a more useful shop for yourself. The sawhorse and beam method of gluing up will also make your next woodworking project easier to work on, and simpler to put together.

Over the course of two and a half weeks, there are three evening classes and a full day class on the final Saturday as follows:

Wednesday evening, January 8, 5 pm - 9 pm

Thursday evening, January 16, 5 pm - 9 pm

## FEEDBACK ON A CLASS

BOB OSWALD

*A note from a student in a recent class.*

Hi Gig, Austin, Larry,

I just wanted to say thanks for a great class. As someone just starting out, I found this course particularly enjoyable and educational. I thought the classes were well developed and introduced us to a nice mix of woodworking processes and techniques, design, tools/machines, vocabulary, safety and so forth - without feeling overwhelmed or rushed. The instructors were knowledgeable, friendly, and more than willing to offer their insight and experience throughout. I especially appreciated the instructor's attention to detail, en-

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

- Monthly educational programs
- Monthly newsletter
- An education program to help members develop woodworking skills
- Sponsor discounts
- Woodworking shows
- Network of business partners (the key to our development as members and as a Guild, providing additional learning opportunities)
- A woodworking shop with space to rent
- A network of friends

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

## GUILD OF OREGON WOODWORKERS

10190 SW Washington St., Portland, OR 97225

### CLASSES, SEMINARS, DEMOS, AND SUCH

Northwest Woodworking Studio 503-284-1644, [www.northwestwoodworking.com](http://www.northwestwoodworking.com)

Rockler Woodworking 503-672-7266, [www.rockler.com](http://www.rockler.com)

Oregon College of Art and Craft 503-297-5544, [www.ocac.edu](http://www.ocac.edu)

Woodcraft 503-684-1428, [www.woodcraft.com](http://www.woodcraft.com)

Woodcrafters 503-231-0226, 212 NE 6th Avenue, Portland, [www.woodcrafters.us](http://www.woodcrafters.us)

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### Affiliates:

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Oregon College of Art and Craft

- ◆ Some sponsors offer discounts to current Guild members.
- ◆ \*\* denotes Scholarship Sponsor



### Guild of Oregon Woodworkers

c/o Bob Oswald  
40639 SW Vandehey Road  
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We're on the Web!

[www.GuildOfOregonWoodworkers.org](http://www.GuildOfOregonWoodworkers.org)