Central New England Woodturners

The CNEW Skew

Volume 20 Issue 4 April 2007

Editorial

Finally, it's Springtime in New England! One morning there's nothing but a single little dwarf iris, the next – daffodils everywhere! Now that I can get down to the basement without dressing for an Arctic expedition, it's time to get back to turning again. And a good thing too, because I acquired rather a lot of wood at the last wood swap and there was quite enough waiting to be turned down there already.

This weekend, however, we're off to the Brookfield Craft Center in Connecticut for a weekend with Binh Pho. You can expect a full report in next month's newsletter and if anyone is taking a class or course – remember the poor newsletter editor and write it up for me!

Of course, as soon as we get back from Connecticut the first item on the agenda is finishing the transformation of the back bedroom into a weaving studio for my wife Hazel. We recently bought a new loom which is big enough to do serious work on but small enough to fit in a small room, unlike "the big loom" which has been gathering dust in the basement for years because there is no other space in the house big enough for it. I wouldn't be bothered by bits of yarn getting all over my works in progress but Hazel objects to getting wood dust and shavings all over hers. Maybe once we get the new loom set up and plugged in – yes, even a loom designed for hand weaving has its own on-board computer these days – we can take the big one apart and free up more space in the basement. Which I'll promptly fill with more works in progress, blanks and assorted lumps of wood...

President's Message

Are we having fun? I would like to thank Norm Mancuso for his wonderful demo on boxes as he made it look so easy to make them. You can also see Norm at the Yankee Symposium on the first weekend in June at Wesleyan College in southern Conn. There are about 17 demonstrators from all over the world to show you how to do some amazing things with wood. I looked at the program and noticed that there were six people from CNEW on the program that were giving demonstrations, just think of the talent that we have amongst us hopefully to call upon for our monthly demos. Last month we had a huge amount of wood for the wood swap, try to remember to call Gene Spadi to coordinate for the wood swap so we do not have a over abundance. I would like to thank all who donated to Project Goodwill with the many items, and also to the people who brought in items for show and tell. This month we will have Rick Angus as our demonstrator, we also will have open turning once again in May. See You There, Keep Turning and Have Fun.

AL

Contents

Club Officers and Contact Info for 2007

President, Al Faul	president@cnew.org
VP, Internal, Reid Gilmore	internal_vp@cnew.org
VP, External, Mary Maguire	external_vp@cnew.org
Secretary, Tim Elliott	secretary@cnew.org
Treasurer, Norma Hogan	treasurer@cnew.org
Newsletter, Graeme Young	newsletter_editor@cnew.org
Video Librarian, Al Faul	video_librarian@cnew.org
Book Librarian, Ray Boutotte	librarian@cnew.org
Webmaster, Dave Eaton	webmaster@cnew.org
Photography, Henry Fairlie	photography@cnew.org

Minutes of April Meeting

Tim Elliott

Visitors: Bill LeClerk, Dick and Jane Gardner.

Charlie Croteau brought in more wood for "Project Goodwill" and reported that our donations have so far amounted to 112 donated wheelchairs. The next auction is in May.

Joe Harbey has arranged for the Open Turning session before our regularly-scheduled meeting to resume. Please check the website before each meeting to confirm if it is on in any given month.

Reid Gilmore has the following demos scheduled

April: Norm Mancuso on endgrain boxes

May: Rick Angus on oval bowls

Reid is still looking for demonstrators for June and July - contact him if you are interested.

Gene Spadi continues to collect pens for the Freedom Pen project, and will send in another batch when he has collected a reasonable number. Gene thanked Dave Eaton for providing a large amount of wood for this month's wood swap.

Frank White gave a quick summary of the upcoming Yankee Woodturning symposium to be held this June. Registration fees escalate with time, so register early for the best price. Volunteers are still needed. Follow the link on the CNEW website for more info.

Norma Hogan gave a treasurer's report.

Starting balance: $1372

Ending balance: $1514

Dave Eaton says our website has been revamped and is now database driven, which should simplify future updates and improvements. He is also selling hook tools at $35 each.

Upcoming Events

Demo for **CNEW May 3rd** meeting will be Rick Angus showing how to turn an oval bowl.

The **Yankee Woodturning Symposium** to be held June 1-3 at Wesleyan College in Middletown, CT, is coming up fast and plans are being finalized. As previously announced we have lined up ten featured demonstrators with national and international reputations as well as some very good local talent. The featured demonstrators include Jimmy Clewes from England, Graeme Priddle from New Zealand, Jean-Francois Escoulen from France, and from the U.S., Johannes Michelsen, Mark St. Leger, Michael Hosaluk, Mark Sfirri, Angelo Iafrate, Beth Ireland, and Bob Rosand. ***Register early as the fee increases from $135 to $150 on May 1st and will be $165 at the door.*** For details see our website www.yankeewoodturningsymposium.org; email garybashian@hotmail.com or call 401-829-8293. Hope to see many of you there!

Coming of Age: Emerging and Established Wood Artists, at the Woodturning Center in Philadelphia until May 19th. Exhibition marking the Center's 21st year promoting and serving the wood art community. More details at www.woodturningcenter.org or 215-923-8000.

And if you're in Philadephia anyway, drop in at the Wexler Gallery for *"Man Made: In the Natural World"*, an exhibition of paintings and works on paper by Bosnian artist **Tanja Softic** juxtaposed withsculptural and turned wood objects by **Ron Fleming, George Peterson, Thierry Martenon, Louise Hibbert** and **Michael Shuler.** Till May 31st.

Turning an End-grain Box

Norm Mancuso

Start with a piece of relatively straight-grained hardwood about 1½-3″ on a side and 4-6″ long. Using a roughing gouge, reduce the piece to a spindle between centers. With a skew chisel, turn a chuck footing on each end, allowing slightly more wood than is necessary, say about ⅜″ as shown in Figure 1.

Place the blank in a chuck and take a facing cut (at about 1000 rpm) on the free end using either a small skew or ½″ spindle gouge. You may find that the spindle gouge is easier to control. As you cut in "from air", make certain that the bevel of the tool is perpendicular to the long axis of the blank. Reverse the blank and do the same from the other end, so that both ends are square to the blank.

Decide which end you want to be the top of the box and draw a line around the blank at a position about 25 to 40% of the blank's length from the chosen end. Part the blank into two pieces, marking the end of the top which is to mate with the end of the bottom. Mount the top end of the top in the chuck with the squared end in the jaws and face the exposed end as above. With a skew, make a small vee-cut in the center to serve as a center spot for the hollowing operation.

With a ⅜″ center drill, drill a pilot hole to an appropriate depth in the top of the box. As a starter, make the hole less than about ¼ of the length of the top piece. Place the rest across the front of the piece at a height which will permit the center of the selected spindle gouge to be at center height when placed on the rest. You will want to think about the next steps before you actually try them. See Figures 2-4 for some thoughts about the mating diameters of the openings. These instructions are for an over-fitting lid and therefore some considerations up front relative to the mating surfaces are in order.

The hollowing the top (or bottom) can be done in a number of ways. My choice is to back-hollow with a gouge followed by cleanup with a scraper. Another method is to use a Forstner bit of the appropriate size to drill the center hole. Be advised, however, that drilling end-grain in hardwood is neither fast nor fun. (If you choose to use this approach, make sure that the speed of the blank is less than about 500 rpm with a HSS drill and about 250 rpm with a carbon steel bit.) It is also possible to use a spindle gouge without back hollowing, as if you were turning a small bowl. Other possibilities include a hook tool or the Termite-style ring tool. Back-hollowing is a useful technique to learn and once learned is probably the fastest way to hollow a box or any other end-grain piece. Use a round or square scraper to finish inside the top. Properly sharpened and presented to the piece, the scraper will take tissue-thin shavings (not dust) from the end-grain.

While the top is still in the chuck, shape the outside as desired. You will finish this later but do as much as possible while the top is strongly held in the chuck, rather than held in the less secure jam chuck later. Make the opening as square as possible for about ⅜″. Use a side-relieved square scraper for this operation. When making this cut, the tool rest should be placed above the center line. A skew cannot be used for this operation. Use an inside caliper to make certain that the recess is the same diameter from the innermost position to the outside edge. You will need this in order to jam-fit the top on the bottom for finishing up the top. Sand and finish the interior of the top, especially the mating surfaces, as desired. French polish is a good alternative, especially if you want to finish the box in one operation. Remove the top of the box from the chuck.

Place the bottom piece in the chuck. Take approximate measurements in order to make a jam chuck to hold the top for final finishing. See Figures 3 and 4 for a guide to the operations required for the jam-fitting of the top to the bottom. Turn a ⅜″ bevel on the bottom piece as shown in Fig. 3. With the blank spinning at around 1000 rpm, ***gently*** hold the opening of the top against the bevel. If the top does not fit over the bevel, re-cut the bevel flat (Fig. 4) and then cut a new bevel as shown and retry the fitting of the top to the bottom. Once the burnish mark has been obtained, flatten the bevel until you have obtained a jam-fit of the top onto the bottom. With a couple of healthy taps, drive the top and bottom together. Once completed, finish the top with appropriate cuts to obtain the profile desired. Sand and finish the outside of the top. With a few gentle taps, remove the top from the bottom.

Now proceed to make the two pieces fit together smoothly by relieving the excess wood between the two parts in SMALL increments until the top just barely slides over the bottom. You are aiming to have a very slight suction fit so that when the top is pulled off, a very slight vacuum is felt.

Now hollow the opening of the bottom to the depth desired. Don't do this step until after the top/bottom fit has been accomplished. If this sequence is not followed, it is relatively easy to make the bottom opening too large and you will end up with two pencil pots, one for very short pencils and one for stubs! Sand and finish the inside of the bottom.

With a narrow parting tool, cut off the bottom leaving about ½˝ of the original blank in the chuck. You will use this to make a jam chuck to hold the bottom. This will be done as previously described for the top. Drive the bottom onto the jam chuck so that it is held tightly enough to enable completing the bottom piece. When shaping has been completed, sand and finish the bottom and tap gently to remove it from the jam chuck. More detailed instructions, including photographs, are available in Richard Raffan's books on woodturning. Good Luck.

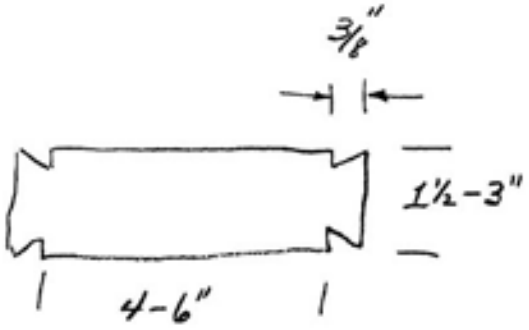
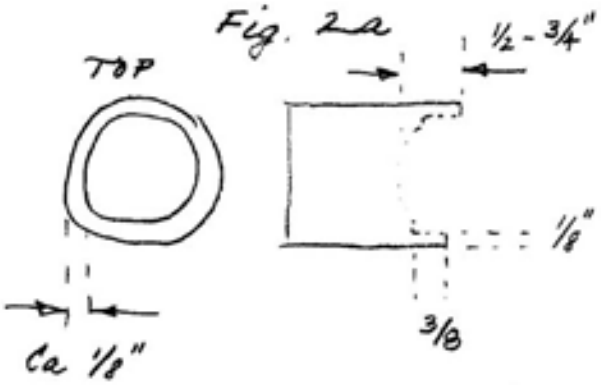
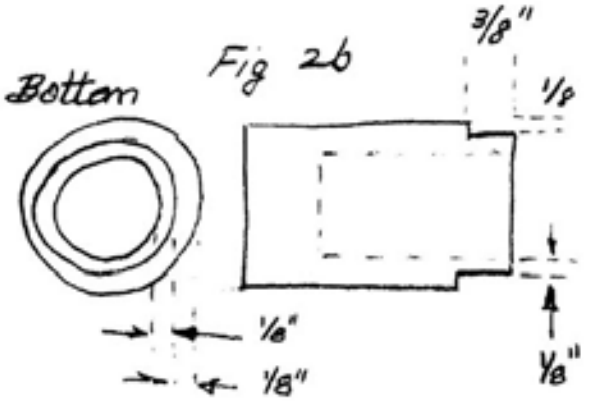
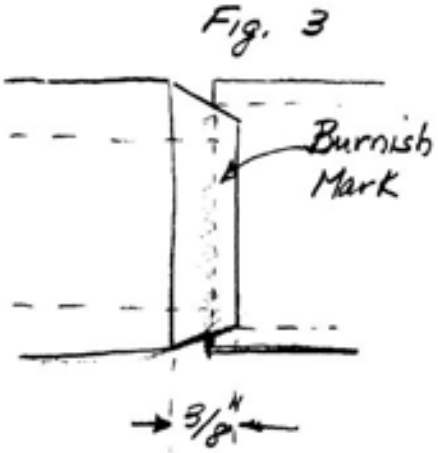
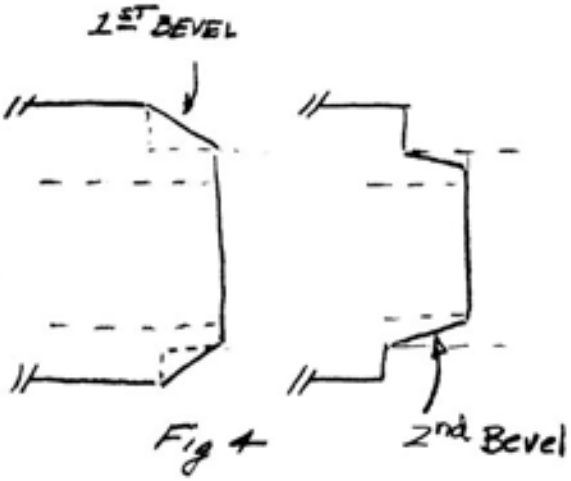


Fig 1.









Back-hollowing with a spindle gouge

A Vacuum System for Holding Work on the Lathe

© Hal Mahon

Vacuum chucking has many advantages for holding work on the lathe. Neither mortise nor tenon is required and there are no screws to leave marks on your work. Any turner on most lathes may use the system described here. The only restriction is that your work is not so porous or has so many worm holes as to preclude forming a vacuum, and even then there are tricks that may enable you to overcome some of these difficulties. Of course the surface of your work must be sufficiently smooth to allow a good seal to the vacuum chuck.

Vacuum chucking is for any wood turner who wants to improve the quality of their work by improving access to the inside and outside of their turning. It is frequently used near the end of a project in which the work has been held with a conventional 4-jaw chuck or faceplate and the next step is to reverse your work for access to its bottom to remove the mortise or tenon, or blemishes from screws. The vacuum chuck is a delightful tool for this part of your work.

Mickey Goodman has written about vacuum chucking. See his extensive and helpful article at [http://cnew.org/tips_techniques/vacuum_chucking.htm]. Google can bring up more information. Our purpose here is to provide practical information aimed at turners who want to make some part, or all, of a vacuum chucking system, including making your own vacuum pump. Off the shelf commercial systems may be purchased at 4-figure prices. The information here enables you to make a fine system that may exceed the performance of the most expensive systems because it can be tailored to your needs and to your lathe. Depending on your choices you may build a fine system at a cost two orders of magnitude less than that of commercial systems.

Holding a bowl will be explained in more detail later. Basically a gasket makes an airtight seal between the bowl's bottom (or side) and the vacuum chuck to allow work inside the bowl. An airtight seal between the inside of the bowl and the chuck allows you to work on the outside and bottom of the bowl. By evacuating air inside this seal the greater atmospheric pressure outside forces the bowl against the chuck. This force can be considerable and can resist significant force from a gouge or sanding. Admitting air into the sealed space releases the bowl from the vacuum chuck. Mounting and unmounting the bowl can be done quickly and conveniently so your vacuum chuck system should be designed with efficacy and convenience in mind as well as economy.

A vacuum chucking system has four components:

1. Vacuum pump
2. Control manifold connecting pump to the lathe spindle adapter
3. Spindle adapter allowing lathe to spin while the manifold connection remains stationary
4. The vacuum chuck itself

The first part of this series is about the vacuum pump, later part deal with the rest of the system.

Vacuum Pumps: where can you find a pump?
Very good pumps are made by Gast and Rietschle Thomas and are included in high end systems. Check eBay for vacuum pumps (and Google for additional information and addresses not included in this article). Clinton Electric Motor Service (978-365-7652) had 4 pumps ranging in price from $85 to$350. You would not be unhappy with the service and guarantee offered by CEMS. (In addition CEMS can replace worn lathe bearings and rewind lathe motors. It is also a source for DC motors and helpful information to convert your belt driven lathe or drill press to variable speed.)

Sources of used vacuum pumps include dairies, dentists, hospitals, industry, veneer presses, boat building, type setting, and in HVAC control systems. Vacuum pumps may be hiding in barns, and salvage areas of medical and industrial facilities. Low priced pumps or even freebies may be lurking close by as was the Gast vacuum pump that I acquired a few years before I started wood turning.

Of course vacuum is available at the intake opening of a regular air compressor. The air intakes of a smaller air pump (a a Gast air compressor) is shown here. To connect

such a pump to your vacuum system a fixture from e.g. maple with a pipe fitting would need to be configured for the opening and epoxied in place. If a vacuum reservoir, such as a ten gallon size portable air tank, is included the pump can operate intermittently. For intermittent operation a constant vacuum regulator should be provided [see http://www.joewoodworker.com/veneering/welcome.htm]. This site is a source of such a regulator and also a source for most of the parts discussed in this article if they cannot be obtained locally.

Some turners have suggested using the handy Shop Vac that most of us have for cleaning up. The availability is an advantage but even with a clean filter a good shop vacuum can only pull a vacuum of up to 6 inches of mercury (see below for definition), significantly less than the pumps discussed below. Some vacuums use air through the motor for cooling. The low airflow when used for vacuum chucking endangers overheating the motor. Finally, a major reason for my disfavor is that they tend to be quite noisy.

A venturi type vacuum source is shown here together with a collection of fittings the purpose of which will

be explained later. The venturi produces a vacuum from the side port by forcing 4 to 6 cubic feet per minute of compressed air through from the larger end. A silencer should be attached to the output. This can make a reliable and simple vacuum pump that will be noisy in operation and may be expensive to operate continuously, depending on the air compressor. Grizzly (800-523-4777) sells complete venturi systems for which they recommend a 2 to 4 hp compressor delivering air at 85 psi. My preference is for a quieter system and one with which I would have less concern about the cost of operation.

Although I already have a good Gast vacuum pump and do not need another, my purpose here is to show how to make a fine, reliable vacuum pump that can be essentially free except for the cost of a few fittings. A pump you can make will have multiple uses such as pumping automotive tires, vacuum veneering and for a vacuum hold down table for routing and sanding, in addition to use with your lathe. The several recycling centers I visit have refrigerators, freezers, dehumidifiers and air conditioners that have been disposed of, usually because they have lost their refrigerant.

When removing the refrigeration pump a pair of large diagonal cutters may be used to cut and crimp the pipes. Or use a tubing cutter and put tape over the ends to keep out dirt. Do not use a hacksaw to avoid metal particles getting into the pump. Leave 8 to 18 inches of pipe connected to the pump, longer is better. The pipe may be cut to a convenient length later with tubing cutters. Be careful bending pipe to avoid kinking and avoid breakage at welded joints. Use care when removing the pump as it may be filled with oil. In operation the oil may mist from the output of the pump and a longer length of tubing coiled vertically will lead it to drain back into the pump. A length of spring with an ID matching the OD of the pipe is useful for bending without kinking. One woodturner has reported more than ten years of trouble free operation with a pump from an apartment size, below counter refrigerator.

Show and Tell

Photographs by Henry Fairlie

Clockwise from top left:
a bevy of boxes by Norm Mancuso; bowl in black ash burl by Frank White; ash bowl with piercing by Mickey Goodman; a small bowl by Mary Maguire; cherry burl hat bowl by Charlie Croteau; two goblets with captive rings by Al Faul; covered vase by Mike Stone; and a cherry bowl by Joe Harbey.

The CNEW SKEW

CENTRAL NEW ENGLAND WOODTURNERS

Central New England
Woodturners
c/o Worcester Center for Crafts
25 Sagamore Road
Worcester, MA 01605

Phone: 508-753-8183
Fax: 508-797-5626
Email: treasurer@cnew.org

Central New England Woodturners
A Chapter of the American Association of Woodturners

On the web: www.cnew.org

Left to right: redwood burl vase by Frank White;
pepper mills by Alan Gilsburg;
table leg (one of four!) by Reid Gilmore.