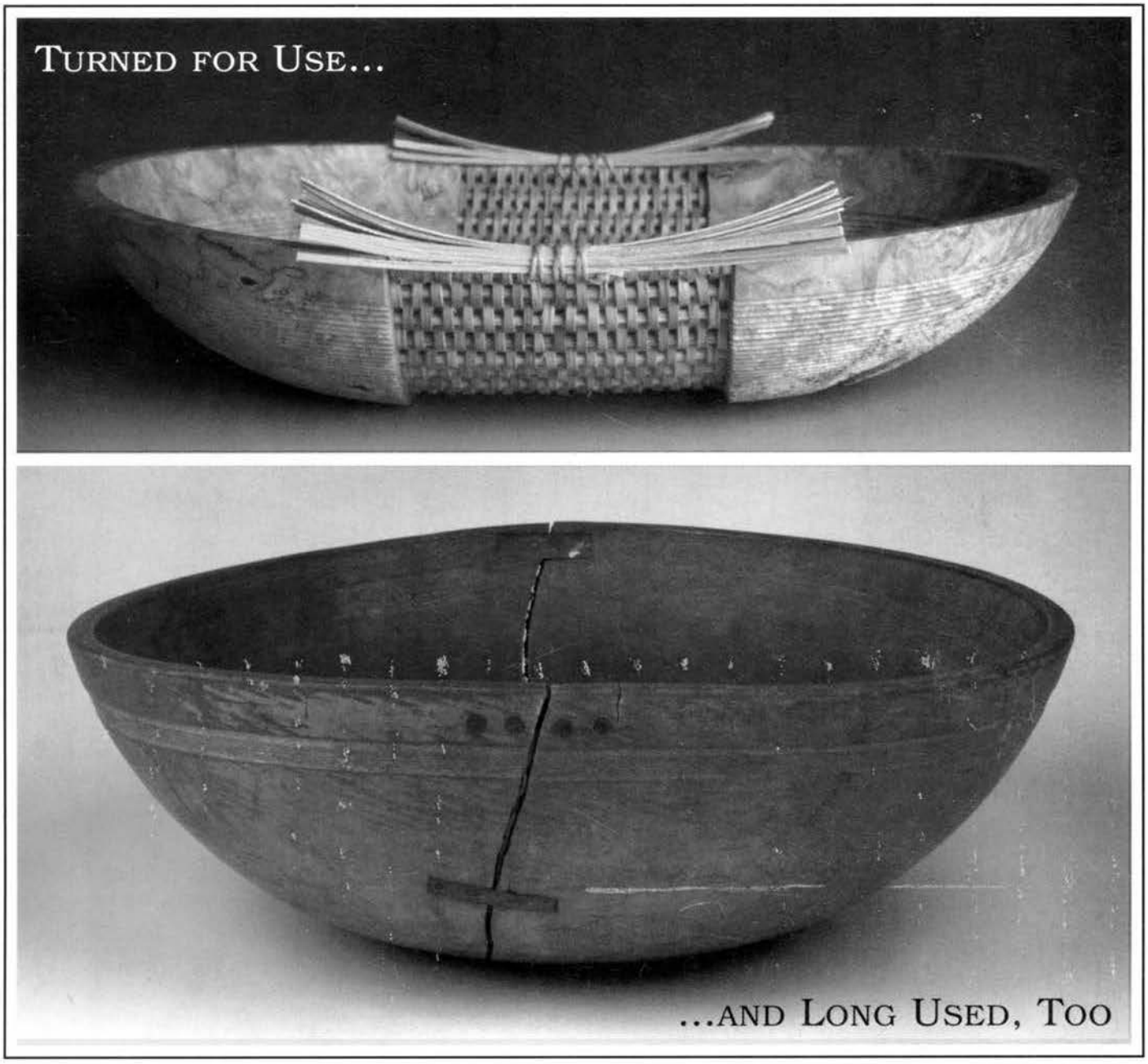
■ Symposium Preview ■ Drying Green Bowls ■ Hollowing End-Grain Vessels ■ Stone Inlay ■

American Woodturner

The Journal of the American Association of Woodturners June 1997 $5.00 Vol. 12, No. 2



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Dedicated to Providing Education, Information, and Organization To Those Interested in Woodturning

SAN ANTONIO HERE WE COME. OUR Eleventh Annual Symposium is about a month away. I look forward to being with everyone again. The atmosphere of a homecoming is appealing to me also at the same time many ideas and techniques can be learned. The Conference Committee has done a great job with the program this year. It seems to me to be a very well-balanced rotational schedule. There is something for everyone. All of our symposia should have something for all 6,600 members.

The auction will not take as much time this year. All items in the regular auction will be turned items. Non-turned items that are donated will be in a "silent auction." The General Membership meeting this year will be at a time that does not conflict with any other activities.

San Antonio is a great place to visit, so many things to do. Three spouse tours have been arranged; one on Friday, July 18, called "Highlights of San Antonio." On this tour you will visit the Alamo, also known as Mission San Antonio de Valero; Long Barracks Museum, once the Mission "Conventa"; the Spanish Governor's Palace, considered to be the most beautiful building in San Antonio; and Market Square, which years ago served as the hub of San Antonio commerce.

The second tour on Saturday, July 19, is called "The Venice of Texas." On this tour you will enjoy the River Walk aboard one of the colorful river cruisers. Next you will visit the Old Ursuline Academy, the first girl's school in San Antonio opened in 1857 by French Ursuline nuns. You will next reboard the river cruiser and see the Arneson River Theater.

Sunday the tour will be to Fredericksburg, "The Jewel of the Hill Country," which includes stops at the Lyndon B. Johnson Historical Park Visitor Center and the reconstructed birthplace of LBJ. This tour also includes the Chester Nimitz Museum of the South Pacific war. All three of these tours should be very enjoyable.

The success of our symposia is always dependent on the help from local chapter volunteers. This year the group is headed by Pat and Butch Titus and they are doing an excellent job—they are right on top of everything. I want to thank them now and everyone will be recognized at the conference. Don't wait too long to register for the symposium. Registrations are coming in at a steady pace.

The "Turned for Use" show will be very interesting and diverse. The objects in the show range from a "Russian Spaghetti Container" to a chess set on to an "Executive Tranquilizer." This all sounds intriguing, I wish I could see it now.

This spring I taught a woodturning class at John C. Campbell Folk School at Brasstown, NC. One afternoon I visited Lissi Oland's Craft Shop. I watched Lissi demonstrate turning a "winged vessel." She also showed us a museum she had built to honor her late husband and to display his woodturnings. It was a very interesting trip and I recommend, if you are ever in that area, it would be worth your time to visit Lissi and I'm sure she would appreciate it.

For a moment, think back on how much progress has been made in the last few years in the area of tools and equipment for woodturning. The evolution of the gouges, the metals used in making tools, methods of sharpening, and improvements in lathes. We've come a long way in a short time. I see yet many more changes. I'm glad I live now instead of in the pole lathe days.

—Charles Alvis, President, American Association of Woodturners

"Turned for Use" catalog available July 1, 1997

This 36-page black-and-white catalog provides a comprehensive view of the AAW's first juried exhibition. Each of the thirty-one pieces is pictured, with specifications. Plus, there are eighteen pieces from the Old Sturbridge Village Collection, and representative work from the jurors.

PRICE: $4, postpaid
To order, call the AAW Administrator at 612/484-9094.

Or purchase one at the show. The opening reception of "Turned for Use" is Thursday, July 17, 7–9 pm, the evening before the AAW's Eleventh Annual Symposium begins. There'll be transportation from the Municipal Auditorium, and juror Steve Loar will give an introductory talk.

If you don't have one already, why not also pick up or order a copy of "Growth through Sharing," the catalog of the AAW's first invitational show, also $4, postpaid.

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A Note about your Safety
An accident at the lathe can happen with blinding suddenness; respiratory problems can build over years. Take appropriate precautions when you turn. Safety guidelines are published in the AAW Resource Directory. Following them will help ensure that you can continue to enjoy woodturning.

On the cover: *A repaired batter bowl from the Old Sturbridge Village Collection (pages 8–14), along with a contemporary bowl by Robert Rosand and basketmaker Darryl Arawjo from the "Turned for Use" show (pages 24–27). Old and new, useful and beautiful, the AAW's First Juried Show and Eleventh Annual Symposium, July 18–20 in San Antonio, TX (pages 55–60), will satisfy a broad range of woodturning interests. Photos: Robert Rosand; Old Sturbridge Village/Thomas Neil.*

Submissions to *American Woodturner* are encouraged. Please contact the editor with articles or proposals.

American Woodturner is published quarterly, March, June, September, and December, by the American Association of Woodturners. Yearly membership in the American Association of Woodturners is $25 U.S.A., $30 Canada, and $40 overseas and includes a subscription to *American Woodturner*. Send dues to Mary Redig, AAW Administrator, 3200 Lexington Avenue, Shoreview, MN 55126, U.S.A. Send articles and advertising to the Editor.

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Carry on!

I think the editor of this journal deserves a big round of "Congratulations!" and "Well done" and "Thank you" from *all* AAW members. Speaking from experience (though not as an editor) you can't please everyone…and some days it seems like you can't please anyone!

Second, his observations in the March issue's "Editor's Note" were 100 percent accurate. Now, here are a few observations of my own.

AAW has gone through an evolutionary process. In the beginning we attempted to impose an artificial balance between "art" and "how to". Result: criticism from both camps.

Then we tried a Project Book, a compilation of projects for the turner. Result: criticism and alienation in the form of "too basic" and "boring".

Eventually, the decision was made, consciously or not, to let the reader's determine the course of the journal, (which in my opinion is as it should be). Result: more criticism!

What to do, what to do? I would remind everyone, from the Board of Directors to the most recently enrolled member, that AAW and all its products, are a direct result of input received from the members. If one camp thinks we should have more ongoing esoteric debates, they should join in. Conversely, if less is called for, submit material more to their own way of thinking. This does *not* mean just letters to the editor, but also applies to articles written by the member for the members.

But like turtles, we get nowhere unless we stick or necks out. This, for me, translates into "Even if I don't like hollow turning (or pierced turnings or segmented turnings or whatever ilk is being talked about), I should at least attempt it—I might actually learn something applicable to those types of turnings I do like. Or, more radically, I might discover that I really do like hollow turning or segmented turnings, etc, etc."

One last observation: If readers have "problems" with articles or letters in the journal, perhaps they should contact the author directly first, before starting a debate in the journal that might not be of interest to anyone else.

Art saves lives

After suffering a few reactions to my comments on what I perceived as the "Art over Craft" direction of our Journal (Letters, March 1997), I decided that the most prudent course was to follow the advice given me many times by my father: "If you can't beat 'em, join em!" So here is my first attempt at entry to the "Art World." "The Art Monster: War, Famine, Pestilence" is made of various woods, used chainsaw chain, tool bits, square nails, faucet washers, jelly beans, and aniline dye.

I believe this is a "one-of-a-kind," "never-seen-before," and likely "never-to-be-seen-again" product of an "innovative," "esoteric," "free-spirited," "creative," "artsy," two weeks of my life. "Plagiarism is invited and no "how-to" is offered. See you "in orbit!"

—Darrell, Rhudy, Raleigh, NC

Again, I know the journal is not perfect. Neither are we the members. But I for one say, Carry on!

—Dick Gerard, Indianapolis, IN
woodturn@indy.net

Too much down under

At our Rocky Mountain Woodturner meeting on 20 March, a short discussion ensued about the March cover of *American Woodturner* and the accompanying article on Australian turners. A few of us thought the large number of pages and the cover being devoted to the Australian craft might be a bit of overkill. Truly, they are a superb lot and worthy of emulation, but the USA has a large number of excellent amateur and intermediate turners that could be featured, with a bit less emphasis on amateur and intermediate turners from "down under." Obviously, the pros from Australia and New Zealand deserve every inch of space we can give them. I can think of four or five (out of the eighty-five) of our local club members that measure up to the lads this last issue featured, so I wonder what we should be doing?

I must say (for myself alone) that this Australian article did get a bit tedious before I waded through it all. We would be curious about the AAW membership reaction to the Aussie article.

—Dave Kahne, Laramie, WY

Better and better

The AAW Journal keeps getting better and better, and is an extraordinarily fine publication. The March issue had so much more in it, and the cover was outstanding. Keep up the good work, provide a balance, listen to constructive input, and ig-

nore the complainers. I would prefer a bias more to the artistic side, but also appreciate the how-to side.

—Bill Haskell, Pacentia, CA
Glendale and Inland Woodturners

Best

This March is the best AAW quarterly I have seen in the several years I have been a member of AAW. Congratulations for a fine job of editing.

My suggestion to those newer members who wish to see more how-to projects is to order back issues of the journal or one (or both) of the projects reprint books.

I would like to see this magazine shipped to us in a plastic cover to protect it from the post office. I consider every copy a collector's item.

—Bob Littlepage, Austin, TX
Central Texas Woodturners Association

EDITOR'S NOTE: We have looked into plastic-wrapping the journal, and the cost seems high compared with the problems reported to us. If your journal arrives damaged by the mails, please contact the Administrator for a replacement copy. If the problem is widespread, we will reconsider plastic wrap.

Holding bottle stoppers

The two lead articles in the December 1996 issue (pages 12–16) describe the difficulty of holding the $^3/_8$-inch wood dowels for turning bottle stoppers. My solution is to use a bronze bushing: $^3/_8$-inch i.d., $^1/_2$-inch o.d., and about $1^1/_2$ inches long. I cut a slot lengthwise in the bushing to within $^1/_4$ inch of the end using a hacksaw—insert a dowel in the bushing to keep it from being distorted while it is held in a vise for sawing. The dowel to be turned is slipped into the bushing, which is then inserted in a $^1/_2$-inch Jacobs chuck, effectively creating a collet chuck. It works!

—Bernie Possenriede, Oklahoma City, OK

For the birds

Feedback on my article, "Turned Bird Houses," in the March 1997 issue highlights a discrepancy between my design and the entrance and chamber heights in the generic bird house specifications chart on page 17. Because the chamber height of my design includes the space inside the roof, it is not possible to locate the entrance hole quite as high as the chart recommends. You'll have to adjust the design or the specifications accordingly and expect that the birds will make do.

—Susan Schauer, Oxford, MD

Your number is up

Re: the December 1996 back cover, Mark Salwasser states, "Real ones [bullets] take fifteen children from us every day." The total, then, would be 5,475 deaths per year. The National Center for Health Statistics cites 1,452 accidental children deaths from firearms for the year 1990.

It is requested that Mr. Salwasser either prove or retract his statement, and that *American Woodturner* concentrate on woodturning and refrain from printing unsubstantiated anti-gun propaganda.

—Don Gerberich, Mesa, AZ

MARK SALWASSER REPLIES: First, I want to assure Mr. Gerberich that my work is "real woodturning." My medium is wood, turned on the lathe. That my work has evolved towards art and cannot be categorizes as pure craft should, I hope, be of interest to other woodturners, if not for the art, at least for the technique. I believe that is why the work was published in the first place.

Second, I take exception to the accusation of being a propagandist who manipulates the facts to suit his purposes. I am not an anti-gun activist, nor do I personally see an automatic correlation to that activism because of commentary on the tragic and needless death of children from handguns. My goal with my work in general and with this project specifically is to evoke a reaction and to raise awareness, as well as to please and engage fellow artisans with my skill and technique.

The inspiration for this project came from a massive billboard on the Massachusetts Turnpike in Boston, citing the statistic: "15 children killed every day." When I called the sponsor of the billboard, Stop Handgun Violence, I was informed that the figures from the National Center for Health Statistics for 1993 (the most recent then available and more current than the 1990 numbers Mr. Gerberich cites) for deaths of persons under age nineteen attributable to handguns indeed averages fifteen per day.

Proof in the pudding

We often use articles in the journal as our monthly challenge project. Here's Bob Porter's submission in response to the December 1996 cover stories.

—George L. Paes, Pres., Central Coast Woodturners of CA

Erratum

Photo credits for Stuart Mortimer's work, pages 29 and 30 of the March 1997 issue, should be "Stuart Mortimer."

On The Inevitable

A FRIEND OF MINE PASSED AWAY A FEW years ago. He felt tired one afternoon, went home after a normal days work, had a heart attack, and died—he was 53 years old.

He left behind a studio filled with over $70,000 worth of equipment. It was more than two years before his wife and daughters were able to get all of his equipment sorted out and evaluated.

You've spent part of your lifetime collecting tools and accessories for your workshop. You finally own the lathe you've always wanted—skews, gouges, scrapers, and beading tools, a band saw, table saw, drill press, assorted sanders.

What happens to your stuff after you are gone—does your family know what you want done with your equipment, who may be interested in buying it, what it may be worth, what all you have out there? If your house is like mine the answer is—no!

Oh sure, my wife knows that I have "a bunch of tools" out in my shop, and she can even identify a number of them with very little prompting, but she has no idea how much any particular item may be worth, and would have very little idea where to find out. As far as that goes, could you yourself put a dollar value right now on what's in your shop?

Whether you have been woodworking for decades, or just recently started, chances are pretty good that some of the items you have made are scattered throughout the rooms of your home. After you are gone, those items will be handled and used, remembered fondly; perhaps one piece is a bowl you turned as an anniversary gift, another a platter turned and carved to celebrate the birth of a grandchild, maybe a natural-edge bowl is from a storm-damaged tree that you used to take shelter under from downpours in years past. The items that you create are part of your life, a part of your legacy.

Your tools on the other hand, are what you used when you made those precious heirlooms. To a spouse with no knowledge of or use for tools, they will become a unwanted reminder of the absent owner.

Same with your whole workshop. We all have a space we claim as our own. Very seldom does my wife come out to visit me while I am working in my shop; she knows I am in my space, doing my thing. The creative process, observed, holds very little interest for her. Once a person is gone, the survivor often cannot easily cross into what has always been thought of as that person's space; it might feel disrespectful to mess around with a departed's belongings. For a great number of people, it is much easier to ignore the shop and tools, and simply hope it will all go away.

Too many people put off things that make them feel uncomfortable—a trip to the dentist, visits with your in-laws, thinking about death, but it's better to plan now, while you can, than to leave more decisions behind for your family to deal with.

To prevent putting my wife through the emotional drain, as well as the burden of dealing with my woodworking equipment, I have started making an inventory of all of my equipment, along with instructions on what I want done with it after I can no longer use it—this includes the event of injury or disability. I don't know about you, but I would prefer my tools were used by someone who would care for them and put them to good use, instead of letting them collect dust or rust.

The simplest way to list all of your tools is with a pencil and note pad. A little more sophisticated way is with a computer. Whatever way you decide, for each tool you'll probably want to include the following: item, manufacturer, model, serial number, date and price of purchase, length of warranty, accessories, and personal comments.

I have created a list of my own equipment using a database program on my computer. Whether you work with a database, spreadsheet, or home inventory program, a computer allows you to list as little or as much information as you want and to return to the task whenever you wish to augment things.

I have made a form to record the information I want to keep track of and I keep a few copies in the shop. Whenever I acquire a new piece of equipment or a tool, I write down the information and transfer it to my master list on the computer later.

Some items may have been purchased years ago; do your best. You can get close to the year it was bought, and make an educated guess at the price. If this is difficult for you (the owner, who purchased and has used these items for years), imagine what someone with no knowledge of tools would have to go through!

Let's face it, most gouges look similar; would the average person know there was a difference between high-speed steel and carbon steel? A Henry Taylor roughing gouge, or a Jerry Glaser deep bowl gouge? What exactly is a Nova Chuck, and who would guess they cost $150?

If, like me, you are pretty sure that you are not going to go, this list can also be used for keeping track of your equipment for insurance purposes in case of theft or fire.

And don't forget, just as important as listing everything you buy, you must also remove from your list items that you sell, break, or lend out and never see again—keep your list current!

At the same time, it is important

to keep a copy of your list somewhere other than your shop in case of fire or other mishap. In a safe deposit box at the bank, along with the directions of what you want done with your tools, is a good place. Your tools might be included in your will. You can go as far as to list each tool and who you want it to go to, or use a blanket coverage such as "All tools to be divided equally among my children."

You should also make a list of helpful people and organizations, and keep it with your tool list. The list could contain the name and phone number of a trusted friend who is familiar with what you have, a retail or used equipment dealer you have dealt with, or the local chapter of a wood turning or woodworking club you belong to. You may even ask a friend from your local woodturning club to get in touch with your family if anything should happen to you. Be sure you write down this person's name with your list so your family can verify it.

What if you have no family member to hand your equipment down to? You may be able to donate it to a local or national organization. A high school, vocational, or trade school, youth council, or rehabilitation facility are all good places to consider. You could even go so far as to contact a local university or community college and see about establishing a scholarship fund to help pay for the education of promising craftspeople of the future.

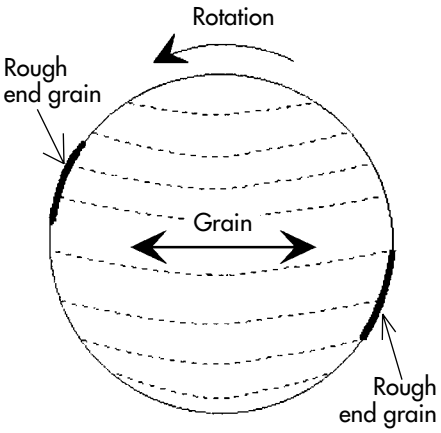
Making a list of all of the tools you own is certainly no fun, and starting is always the most difficult part. But once you have made your list, keeping it up to date should not be a big deal.

If for no other reason than your family, consider doing it now. Heck, you may discover some tools you've forgotten you had.

—David Hillerby, Jamestown, NC

CUTTING END GRAIN CLEANLY

I HAVE BEEN TURNING FOR YEARS AND have not yet consistently solved the problem of end-grain on faceplate turnings. A small figured maple box I recently turned was marred by dirty end grain, which I cannot clean up. Simple geometry shows it to be inevitable:



I admit to using scrapers to smooth the inside of bowls and scrapers do indeed make mess of end-grain (as the books say), but I have found no alternative. I've tried sharp tools, reverse sanding, sealing followed by power sanding, and off-lathe hand finishing. These are each more or less effective, but not always, and they absorb so much time! And excessive manual sanding lessens the perfection of the circle. On large bowls aggressive power sanding of the end grain can be feathered into the large curves, but on small boxes and bowls, the sharper curvature emphasizes the effect and limits sanding.

How do production turners, who seem to make flawless pieces in a few minutes, cope with end grain?

—Peter Smith, Princeton, NJ

Alan Stirt replies:

Without being able to actually watch you turn, it's difficult to diagnose the problem and pinpoint a solution. I will, however, describe how I deal with the end grain problem myself.

As illustrated in your diagram, some disturbance of the end grain is inevitable. The degree of the roughness or tear out is determined by many factors, including the characteristics of the wood (which will vary both between and within species), the type and shape and sharpness of the tool, how the tool is used, the moisture content of the wood, the lathe speed, the lathe bearings, and other mechanical factors affecting vibration, etc.

My approach is to first try to cut the wood as cleanly as possible—a bevel-rubbing cut with a gouge. If the shape of the piece doesn't allow this, a shear scraper is the next best tool. Straight scraping is a last resort.

When I use a gouge, I prefer to leave the small ridges it produces rather than scrape them away. I find it easier to erase these *small* ridges by sanding than to deal with the torn end grain left by a scraper.

When I've done the best tool work possible, I try to sand as efficiently as I can. Ninety-nine percent of the time this means power sanding while the piece is rotating. It's important to start with the proper grit. Too coarse is just a waste of time, as is too fine, which also can lead to overheating the piece with subsequent distortion and possible checking. I might start with a 120-grit disk for small pieces, while I usually need 80 grit for larger salad bowls. The type of wood makes a big difference here. On some very dry birdseye or curly maple I often have to use a coarser grit. It pays to experiment.

Power sanding using a grit sequence suited to the size and type of wood should not take more than a few minutes.

Due to the large number of variables involved, some hands-on instruction would be invaluable.

Mike Darlow replies:

Peter Smith's problem is a common one. Many hard but fine-grained woods do not cut crisply; they have a certain plastic quality not present

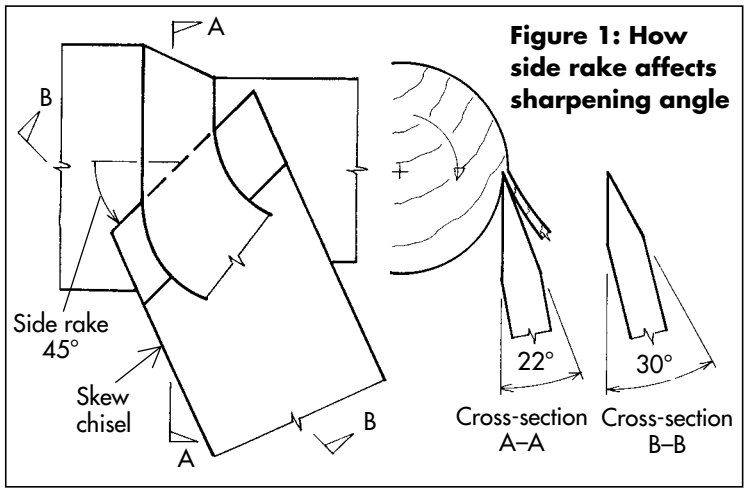


Figure 1: How side rake affects sharpening angle

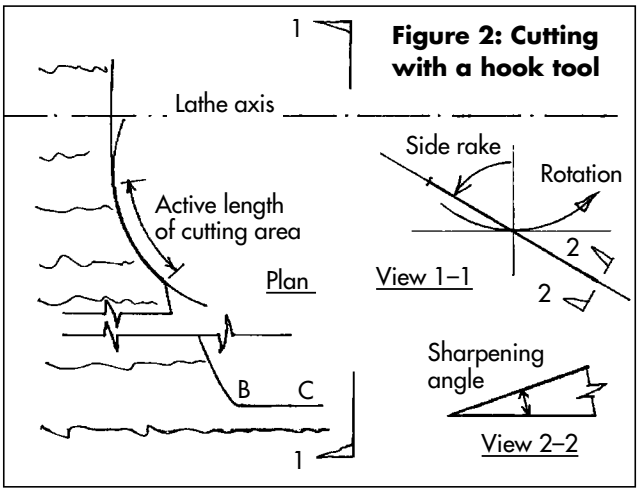


Figure 2: Cutting with a hook tool

in, say, oaks. Softer and looser woods, old crumbly woods, or woods that have long been immersed similarly tend to collapse, crush, or tear when being cut perpendicularly to their grain direction. In tight situations, such as the bottom of the inside of a box lid or base, the problem is compounded.

A flat scraper working at axis height crushes and tears such woods. Shear scraping is better, but rarely good enough.

To produce the best possible finish on any wood surface:

1. Use the sharpest edge possible, that is, one with the smallest possible sharpening angle and the highest quality.
2. Present and move the edge in the most sympathetic way to the surface you're cutting.

Let's be clear about sharpening angles. The smaller the sharpening angle, the sharper the tool. An angle of 30 degrees is recommended for general use because it is long lasting. If some wonder material comes along that will take and hold a sharpening angle of, say, 5 degrees, we should take full advantage of it. In this situation the edge will be used only for fine finishing cuts, and its sharpening angle can be reduced to 20 degrees.

There is not a lot of point in using a smaller sharpening angle if you do not further refine the edge by honing it. The finer-grained the honing stone, the better the edge. Buffing is excellent for convex bevels.

We know that a skewed edge produces a better surface. The more the skewing (defined in degrees of side rake), the less sub-surface damage (crushing and tear out). This improvement results from three factors.

1. The approaching wood sees a cutting edge with an effectively smaller sharpening angle (Figure 1). The clearance angle is similarly effectively reduced.
2. Recent high-speed microphotography shows that the absolute value of the clearance angle required to produce a given shaving thickness is reduced as the side rake increases.
3. The mode of cutting is more complex and more gentle, resulting in cleaner severance.

Unfortunately, achieving a superb surface is not merely a matter of increasing the side rake, because as you do, the surface tends to become more rippled. This is why we tend to use a side rake of only about 45 degrees when planing with a skew. However, in Peter's situation, surface rippling is a relatively minor problem, so the side rake should be increased to at least 60 degrees.

When cutting at high side rakes, the minimum clearance angle is probably less than 1 degree. To achieve this minute clearance on a concave surface, the tip's outer bearing surface must be convex, something usually neglected by tool manufacturers.

So far, I have ignored tool type. As most of you will have guessed, a hook (long neglected by English-speaking turners) or a ring tool is the solution to Peter's problem (Figure 2). Use a diamond rat-tail file on the inside bevel to sharpen. A common fault with hook and ring tools is that their blades are too slender and flex, leaving a grossly rippled surface.

Thin the depth of cut as you approach the final surface. A thick shaving is more rigid and will push the hook harder against the just-cut surface, increasing crushing damage. Also, keep lathe speed up and traverse the tool slowly.

Unfortunately, there are few if any commercially available tools that allow you to use the same, optimum combination of side rake and sharpening angles in zones B and C. Scraping, shear scraping, or cutting with a low side rake and small sharpening angle may work well enough. If not, you will have to make your own special tools or modify existing ones.

In addition to optimizing your tools and their use, you can stiffen the wood by impregnating it with glue or polish.

If the above does not work, try wood of a different species.

—Mike Darlow, NSW, Australia

Stretch-wrap source

In last September's "Turner's Tips" column, I noted the use of Flat Twine®, a clear plastic film for use in reverse turning. I have received several phone calls and a letter from AAW turners who are unable to find the material. My local Ace hardware carries the material and it is available by mail order from Lee Valley Tools Ltd., PO Box 1780, Ogdensburg, NY 13669-0490, Phone: 800/871-8158.

—Charles Brownold, Davis, CA

Attractive and handy

Re: magnets in the March 1997 Turners Tips column, they are one of my most important accessories. You can buy unusually powerful magnets about $1^{7}/_{8}$x1x$^{3}/_{8}$ inch from Radio Shack for 99¢ each. That's easier than tearing up a speaker, and considering the strength of the magnets, they are a lot smaller than speaker units,.

They hold my chuck and allen keys, depth gauge, Forstner bits, drive and revolving centers, and especially the flexible halogen lamp for viewing deep work. The lamp has two magnets glued to the base with E6000 glue, and sticks to the lathe tenaciously—anywhere you want it. They will also hold individual tools. All this stuff hangs on the end and back of the lathe, out of my way but easy to reach—and *find!*

—Dave Kahne, Laramie, WY

More on vibration

Since I started turning on a 12-inch Delta swivel-head lathe some four years ago, I had always blamed the wavy outer surface finish on my lack of tool control and technique. As David Ellsworth suggests (in the December 1996 Tips column), bringing the tailstock up with a live center helped. But my tool technique could not have instantly improved when I replaced the headstock bearings in the lathe and the wavy surface disappeared! I believe bringing the tailstock up had effectively tightened the worn bearings.

Consider that I now turn on the British Poolwood lathe, which has adjustable taper roller bearings. Initially, I experienced vibration and the same wavy outer surface on even 10-inch-diameter bowls. But instead of bringing up the tailstock, I tightened the bearing-adjustment nut. With the same rpm, the same toolrest position, the same gouge, and the same tool technique (or lack of!) on the same bowl,…no more wavy surface.

On both lathes, my preferred turning position is with the swivel headstock at 90 degrees to the bed, where the tailstock cannot be used. Replacing or adjusting the bearings has made all the difference.

—Josh Pichanick, Burlington, Ont.

Morse extension sockets

Buffing the inside and outside of bowls, particularly large ones, can create some clearance problems with the headstock. I had that problem with my 20-inch Woodfast and 8-inch buffing wheel until I discovered Morse extension sockets! I found them through Rutland Tool & Supply (800/289-4787). A 2x2 Morse taper extension puts the buffing wheel an additional $7^{1}/_{2}$ inches away from the headstock. The Rutland part number is 2541 5006 for the extender at $10.75 and a drift key to punch out is 2580 3112 at $4.30. The latter is well worth it!

—Oskar Kirsten, President, San Diego Woodturners

Polished bevel, finer surface

I have taken to honing (really, polishing) my skews and some gouges—those tools where I want the finest possible finish from the tool, due to its bevel rubbing the workpiece. I have polished a mirror-like finish on the bevels of these tools using a 5-inch-diameter by 1-inch-thick leather wheel charged with white jewelers' rouge, but I think any fine polishing rouge would work. I got mine from Grizzly Imports (800/523-4777 east of the Mississippi; 800/541-5537 west of the Mississippi).

I cobbled the wheel together using leather from a local saddlery and plywood flanges plus an arbor from the local hardware store. I mount the wheel in a Jacobs chuck in the lathe and run the wheel in reverse, but a drill press would also work. Remember to have the wheel turning *away* from you as you put the tool to its surface. The surface from these polished-bevel cuts is "almost good enuf" right off the tool. If sanding is still needed, I start with 400-grit and go to finer grits from there.

You have to be careful not to round the tool's bevel past flat when polishing it. The small diameter of the wheel helps with this. Maybe a 4-inch diameter would be even better.

—William G. Kissel, Yankton, SD

Naptha check

I sometimes use naptha to check my finished sanding before I put on any oil. It dries in seconds and does not raise the grain. And, it lets you see any scratches on the finished surface.

—Mike Kornblum, Mtn Home, AR

Coded sandpaper

I like to prepare sandpaper in "cut to size" lots but don't like to spend time wondering if that piece that fell on the shop floor is 100 or 120 grit. A fast and easy way to identify those pieces quickly is to take a few magic markers in various colors and draw a continuous "S" shaped line on the back of each sheet before cutting. I use about $^{3}/_{4}$- to 1-inch spacing. A different color or two-color combination with a handy grit color chart will do the trick at a glance. Works great for getting a bit more life from small pieces that would otherwise be discarded.

—Charlie Alford, Troutville, VA

BACK TO THE PRESENT

The faceplate turnings of Old Sturbridge Village

ALAN LACER

This large burl batter or dough bowl (23" dia.) has three beautifully carved handles and a pouring spout. The underside of the foot is nicely relieved to a depth of about 1/4".

IF YOU WERE LOOKING FOR EXAMPLES of turnings that incorporate carving, texturing, painting, ebonizing, subtle facets, delicate beading, rough natural elements, square edges, or decorative chatterwork, where would you look? A contemporary show of "art turning?" How about in one of the largest collections of American turning from the eighteenth and nineteenth centuries?

The collection of turned artifacts housed at the Old Sturbridge Village in Old Sturbridge, MA, represents a unique glimpse into our turning past. I spent the better part of two days looking through the stacks of this extensive collection, along with curator Frank White, editor Rick Mastelli, and old-tool buff, Andy Barnum. We're a lucky few to have this singular opportunity; the collection is not now open to the general public. Our intent was to give people a glimpse of this wonderful collection by writing a series of articles (this and Frank White's on pages 12–13 being the first) and by selecting pieces from the collection for inclusion in the AAW's "Turned for Use" show (July 17 through September 21 at the San Antonio Museum of Art in Texas).

Rick Mastelli

Alan Lacer, center, along with Frank White, right, Andy Barnum, left, and Rick Mastelli (behind the camera) examined more than 300 bowls at Old Sturbridge Village, one by one. The collection is in storage, not open to the general public.

Acquired mainly during the 1930s and early 1940s, long before the current turning revival, this collection offers an awesome overview across a broad spectrum of Early American turned work. The collectors seem to have amassed almost everything they came across—rather than only

(text continues on page 14)

The Old Sturbridge Village collection includes bowls with natural features and shaping. The two bowls in the foreground (approximately 15″ dia.) include some natural edge at the rim and have warped to such an extent that they are about one inch out-of-round. The maker of the burl bowl at center (20 1/2″ dia.) included some of the rough exterior surface of the burl.

These two bowls show different approaches to molded decoration. The burl bowl at left (15 1/4″dia) has several narrow beads, even on the bottom. The bowl at right (14″ dia.) is relieved with a deep cove molding on the side, useful as a handle for gripping and lifting the bowl.

All three of these clearly green-turned bowls have molded details on the sides. The example at left (10″ dia.) is relieved by a series of shallow, random-width grooves. The red-painted bowl at right (14″ dia.) has a flat molding below the projecting rim and bands of fine lines spaced about an inch apart. And the small gray/green bowl in the foreground (6 3/4″ dia.) is shaped with a simple flat molding at its rim.

Photos, except where noted: Old Sturbridge Village/Thomas Neil

Roots of the Old Sturbridge Collection

FRANK WHITE

OLD STURBRIDGE VILLAGE OWES ITS inception to the Wells brothers, successful industrialists here in central Massachusetts, who began collecting on a large scale in the 1920s. One brother, Albert B. Wells, had a driving passion for collecting woodenware which he amassed in great quantities. In so doing, he assembled one of the premier collections of early woodenware, particularly turned woodenware, in the country. All of the bowls pictured on these pages were acquired by A. B. Wells in the 1930s and early 1940s.

Early wooden bowls, and woodenware in general, are virtually anonymous. Unlike many of today's makers, woodturners in the eighteenth and nineteenth centuries seldom signed their products. Of the several hundred bowls at Old Sturbridge Village, none of the makers is known. Consequently, it is gratifying simply to find occasional references to early bowl turners.

In the nineteenth century in Norfolk, a town in northwestern Connecticut, for example, Deacon Jonathan Kilbourn operated a "dish-mill," "where he turned out large quantities of wooden bowls, which were sold in all the region around...Those turned from white ash knots [burls to us] were especially fine and valuable, and knots of the great old sugar maples, soft-maples, ash, beech and birch trees were sought in the forests...These wooden bowls were turned with peculiar chisels, [a precursor of the McNaughton System] a single large knot or block making a whole nest, in size from very small ones up to those nearly two feet across, which were used for a variety of purposes: bread-bowls, butter-bowls, chopping-bowls, etc." [1]

Three end-grain-turned vessels: At left is a "Peaseware" type sugar bowl ($5\frac{1}{2}$" tall) painted red and probably made in Concord, OH, in the late nineteenth century. The compote at center (10" tall) was turned from burl in four stages: the base (two parts), the body (lined with velvet), and the lid (with a mother-of-pearl disk inlaid into the top of the finial). At right is a burl compote (6" tall) with an acorn finial.

Similarly, in the little township of Concord, Ohio, east of Cleveland, the Pease and Brown families manufactured turned woodenware on a full-time basis from about 1850 until 1906, and then sporadically until 1940. They made thousands of containers for household use, including lidded spice jars, sugar bowls, and storage boxes with bails, compotes, salt and pepper shakers, vases, sewing stands, and more. The pieces were always turned end-grain. The characteristic form of many of their products, which in the antiques trade are generically designated "Peaseware," makes much of their work readily recognizable.[2]

From a much earlier time, the diary of Matthew Patten, 1754–1788, a farmer and versatile woodworker in Bedford, New Hampshire, who made staved buckets and built houses, looms, wagons, etc., also offers some interesting insights into turning wooden bowls. Several entries in 1755 refer to taking "knots" to Charles Emerson to be turned into dishes. Ten years later Patten got a "large boil [burl] of ash" to make a dish and then got "a knot for a dish, Stuff for 3 treas [trays] of Poplar." He also made five trays from a white ash tree. It seems likely that Patten carved rather than turned these dishes and trays because on June 30, 1767 he commented that "I began to try to turn dishes." He apparently was successful, as on July 10th he turned "some dishes" and on August 17th he "turned a knot dish that holds two quarts in the forenoon." A few years later he "got as much poplar stuff as will make 18 dishes or boles."[3]

Without a doubt Patten, and Emerson before him, were turning bowls and dishes on spring pole lathes. Perhaps their bowls showed the same turning marks as the example in the photo at right.

These three small bowls (4¾" to 7" dia.) all have very pronounced striations left by the gouge. The bowl at center was turned between centers, probably on a pole lathe. The rough area at the center of the bowl shows where the remaining plug was carved off.

Some sense of the kinds of woods used for making bowls can be obtained from early publications on the trees of North America.[4] They tell us that where it was available, the tulip tree, more commonly known as poplar, was the preferred wood for bowls. What Matthew Patten used for his bowls, however, was probably not tulip tree but quaking aspen, which is generally called poplar in the northeast. White maple, red flowering maple (also called swamp or soft maple), white beech, linden tree, ash, tupelo, black gum, and butternut were some other woods commonly turned into bowls. In Connecticut white ash was usually preferred for wooden bowls. But black ash was said to be "more liable than any other species to be disfigured with knobs, which are sometimes of considerable size and are detached from the body of the tree to make bowls. The wood of these excrescences has the advantage of superior solidity and, when carefully polished, exhibits singular undulations of the fibre." The writer of this description also commented that "the most solid [bowls] are made of the excrescences on the trunk of the black ash; but they are rare, as the large stocks from which they are taken have been consumed."[5]

Rick Mastelli

Each piece in the collection reflects the character of its long use, as well as its maker. The most interesting works were chosen for inclusion in the AAW's "Turned for Use" show, opening July 17, 1997 at the San Antonio Museum of Art, in conjunction with the AAW's annual symposium.

Peter Kalm, a Swedish traveler in this country in the mid eighteenth century, observed that trees with "excrescences" on their trunks or branches were "very common in this country." He noted (incorrectly) that "only the trees with deciduous leaves have these knobs, and among them chiefly the oak. The black and Spanish oak especially have the greatest abundance of swellings. The ash trees *(Fraxinus excelsior)*, and the red maple *(Acer rubrum)* also have them. Formerly the Swedes, and more especially the Finlanders, who have settled here, made dishes, bowls, etc. of the knobs which were on the ash tree."

Curiously, none of these descriptions makes any reference to black cherry, which today in southern New England at least, is the species most prone to develop these "excrescences" or "knobs" that we call burls. In conjunction with the above discussion of ash and ash burls being among the preferred woods, we noted in our examination of the bowls in the museum's collections a number of examples that could well be ash. Identification of wood species in these bowls, however, is somewhat speculative without being confirmed by microscopic analysis.

FOOTNOTES

1. Theron Wilmot Crissey, *History of Norfolk, Connecticut.* Massachusetts Publishing Co.: Everett, MA, 1900.
2. Gene and Linda Kangas, "Peaseware: Fruit of the Garden of Eden," *Maine Antiques Digest,* December, 1996. Ernie Conover provided technical advice for this article.
3. *The Diary of Matthew Patten of Bedford, New Hampshire.* Published by the Town: Concord, NH, 1903.
4. F. Andrew Michaux, *The North American Sylva.* Philadelphia, 1819 and *The Report on Trees and Shrubs in Massachusetts* by the Commissioners on the Zoological and Botanical Survey of the State, Boston, 1846.
5. Michaux, vol. III, pp. 71 & 259.
6. Peter Kalm, *Peter Kalm's Travels in North America.* Reprinted by Dover Publications Inc, New York City, 1966. Kalm had traveled in New Jersey, Pennsylvania and upstate New York.

Frank White is Curator of Mechanical Arts at Old Sturbridge Village, and an avid amateur woodturner.

These vessels may have been used as drinking cups, dippers, scoops, saltcellars, or even receptacles for blood-letting. The handles were formed by removing most of the turned flange. Rough carving and then turning away the wood between the handles is possible on a spring-pole (reciprocal) lathe. This appears to have been the technique on two of these pieces.

the "best" examples or a sampling reflecting some other selection criterion. Both good and poor turnings of all sorts are included, which in fact provides an accurate view of what was happening in the craft when woodturnings were common throughout everyday life. It is as if someone today visited craft shows from coast to coast and purchased samples of everything he encountered. In a hundred years, such a collection would present the field in quite a different light than the one you might see reflected in books or the finest collections.

The Old Sturbridge collection comprises an enormous variety of artifacts. There are between 300 and 400 bowls and plates, 70 to 80 mortars and pestles, and numerous lidded containers, sewing accessories (such as needle cases, thimbles, and thread caddies), lace bobbins, knitting needles, crochet hooks, sugar shakers, brooms and brushes, potato mashers, writing accessories (such as seals, wax wafer boxes, and pounce boxes), strainers, juicers, funnels, canteens, bottles, bottle corkers, clothespins, rolling pins, bowling pins, noodle cutters, pastry jiggers, and more. If you expand to objects including turned elements—the collection of furniture, spinning wheels, and tools—you have a sense of how pervasive lathe work was in times past.

Molding can be bold or subtle. At left is shown the underside of a $10\frac{3}{4}$" dia. plate. The small burl bowl at right includes a delicate bead on the outside.

The woods are diverse but dominated by species native to the northeastern U.S. We did not verify the exact species of each piece—microscopic techniques would be in order—but there was a consensus among us that pieces included chestnut, elm, walnut, maple, butternut, birch, sycamore, ivory, tagua nut, lignum vitae, Brazilian rosewood, and burls from ash, maple, and walnut. It is quite likely that some of the smaller items made in tropical and European woods or from ivory and tagua nuts may have traveled to this county already turned—which is not to say that American turners did not have access to these same materials, especially if located near one of the major ports in the region.

Pictured on these pages are the facework pieces found in the collection—bowls, plates, and platters—leaving the more varied items for a future article. The majority of the bowls appear to have been turned green, with the top edge located just below the pith of the tree. We found very few instances of end-grain-turned bowls or plates, except for some of the very small bowls and cups. Few of the bowls show signs of mounting methods on the lathe;

Plates, ranging from 6½" to 12½" dia., typically have a flat-bottom foot corresponding with the recessed center. Most also show obvious signs of use, especially knife cuts, which appear on the bottom as well as the top.

probably less than five have screw holes remaining. Some clearly were turned between centers, showing the breaking off of the nib on both the inside and underside of the piece. One of the most telling features is the concave base, finished off rather nicely, that characterizes most of the bowls—a practical concern when working green wood and a mark of good workmanship.

Scale was a surprise. The average bowl is around 12 to 15 inches in diameter, more a serving than an eating bowl. Quite a few are 20 inches or better; one (pictured on page 16) was 33 inches (which, by the way, was among those with the sweetest lines—rather hard to pull off on that scale). The fact that there are so many large bowls points to the advantages of wood over other materials: it is impractical or difficult to throw and fire large ceramic vessels and, compared with ceramic, wood is usually lighter in weight and tougher in taking abuse from use or transportation. The large bowls were probably used as dough bowls when making bread and other baked goods. It was common practice to bake large batches of bread using several pounds of flour at a time. Some of these bowls were used as chopping bowls (as evidenced by the internal marks and cuts) for making sausage or sauerkraut, for instance. These bowls accommodate the crescent-shaped blades of food choppers very nicely.

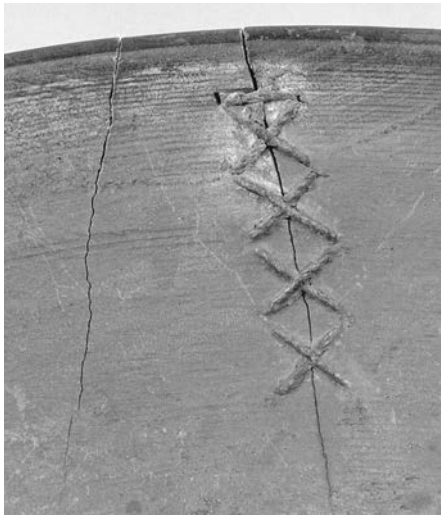
We found repairs on a significant number of the pieces—metal bands surrounding the entire piece; metal and wood bridges, as well as stitching with cord, to span splits; and putty or roofing-tar plugs to fill voids or cracks. Clearly, the care and work spent on these commonplace objects evidences an attitude quite different from that of today's throwaway culture.

The plates and platters have their own strong qualities. Most have large bases, usually a little concave, for stability in use. Knife cuts in the wood show heavy use at the table. It is intriguing that many of the plates are marked with knife cuts also on the underside or base of the piece; it seems that plates were commonly inverted to create cutting boards, probably for bread. The relative flatness of the plates points to their having come from drier materials, or perhaps they were twice-turned: roughed out green, allowed to dry, then remounted for finish-turning.

What of the makers of these turned objects? We found no signa-

The deep burl dough or batter bowl at left (15½"dia.) has a shallow band at the rim. The well-used burl bowl with cut out handles (17" dia.), right, was reputedly used for setting cream, which may explain the excessive staining and erosion of the lower part of the bowl.

Despite its grand size (33″ dia. and almost 15″ high), this bowl was turned with a very sweet line to the body. As a consequence of rather severe use (the excessive linseed oil on the interior suggests bathing or laundry), it has several cracks and breaks that were summarily repaired with the metal band tacked around the circumference below the thick rim.



The crack near the edge of a lightweight, 17″ dia. bowl was carefully repaired with laced cord. Everyday objects were evidently valuable enough to make such efforts to save them.

tures and only a few initials, which might be the owner's rather than the turner's. But the mark of the maker is prevalent. Unknown to us by name, the maker's tooling, strategy, errors, and (sometimes) recognizable style in different pieces are distinctive.

Fewer than five bowls evidence significant sanding; most were left with the original tool marks, unless erased by heavy use. This is no surprise, as sandpaper was not generally used by woodworkers until late in the nineteenth century, and most of the bowl turning was on wet wood—not readily sanded in that condition.

To be sure, there are examples of mistakes—not removing the pith of the log or leaving an object too thick in the wrong places (leading to checking), too thin on the bottom, a hole where a screw center had broken through, dig-ins, severely torn end grain, and such. We found it refreshing to see such tracks and stories, and even problems, left in the wood, rather than an obsession to technify the work and obliterate the hand of the maker.

Working with this collection has changed my perspective on our craft. It is uplifting to note how turners were given to ornamenting, embellishing, or simply making beautiful an ordinary object. These are not purely decorative objects made for exhibitions, collectors, or museums but for use—and the makers were modest folk who saw no reason to sign their work. But a pleasing line or fine decoration seems as enjoyable today as it was two hundred years ago, whether at an exhibition or simply at the dinner table.

I left Old Sturbridge Village with a sense that good work does not have to shout or resort to gimmicks to be noticed or bring delight to the eye or hand. At the same time I saw the inherent value in tasteful decoration—whether in detail, line, or added color. Work that is thoughtful, reasonably well executed, and discreetly decorated is timeless.

Alan Lacer, a professional turner in Shoreview, MN, is a contributing editor to this journal. He and Frank White (whose insights strengthen this article) wrote on the lathes of Old Sturbridge Village in the September 1996 issue of AW.

Drying Green Bowls

Three different ways

RON HAMPTON

To avoid the problems in drying wood, it is helpful to understand the nature of water in wood. When growing, or in its newly cut green state, wood is saturated with water. Water occupies most or all of the cell cavities (this water is called "free water") as well as the cell walls (this water is called "bound water"). As wood dries, that is, as it reaches equilibrium moisture content with the relative humidity of the air around it, free water leaves the wood with little change in the wood's dimension or strength. But at the "fiber saturation point," that is, the point when free water has gone and only bound water remains, further drying has the effect of both strengthening and shrinking the wood.

As Bruce Hoadley explains in his excellent book *Understanding Wood* (Taunton Press, 1980), green wood is like a sopping wet sponge. If you ring it out, the sponge remains full-sized, flexible, and damp. This is the fiber saturation point. As the sponge dries further, it becomes hard and stiff, and it shrinks.

But unlike a sponge, wood does not shrink evenly in all directions; it shrinks significantly more across the grain than along it. That is why a green-turned bowl warps or becomes oval when dried. Furthermore, wood dries unevenly—the surface, which is exposed to air, drying more quickly than the interior. This difference between the drying, shrinking surface and the still wet, full-sized interior causes stresses in the wood that are eventually relieved by cracks or checks.

Bowl turners have used three basic drying techniques to minimize warping and cracking as turned bowls dry:

1. Turn the wood to an even thinness throughout the bowl. Because the bowl is thin, it dries evenly from both surfaces, and the moisture differential between the surface and the interior is minimal. The bowl will likely warp, but if it's thin enough, it will not crack. This technique can result in some very beautiful "distorted" turnings, but it is not suited for conventional, round bowls.
2. Turn the bowl with an even though relatively large wall thickness, and then dry it slowly (in shavings or in paper or plastic bags) for approximately six months. Again, the wood will not crack, but the bowl will warp. Given a thick enough bowl wall, you can remount the bowl on your faceplate (you did remember to mark your alignment point, didn't you?) and re-turn the dry bowl so that it is evenly thin and round. This technique will give you round bowls that will stay fairly round. The disadvantage of this method is the long drying time.
3. Dry the rough-turned bowl in the microwave: Heat the bowl at a low setting until it is fairly warm to your hands. Then let it cool. Repeat this process three or four times. This technique is fast, but in my experience, it does not dry wood past a depth of about $1/8$ inch. This means that if you want a round rather than a warped bowl, you have to microwave and re-turn the bowl several times. (For more on microwave-drying, see the sidebar on page 16.)

In addition to these traditional methods, I have researched three techniques for drying wood that show a lot of promise.

Boiling wood

To learn about this technique, I called New Zealander Ron Tippet, profiled in Ken Sager's "Near the Knuckle" (*Woodturning,* June 1996). Ron learned the technique of boiling wood from his mentor, Jim Wilson. In a delightful conversation, Ron was glad to share all of his procedures with me:

1. Rough-turn your bowl. The initial thickness should be about 1 inch

Method 1: Catalpa 10" dia. semi-enclosed bowl that was boiled and then air-dried for three weeks, as per Jim Wilson's technique. After three months the bowl is showing no signs of cracking.

Microwave-Drying

BILL STEPHENSON

GREEN-TURNED, ROUGH-CUT SPINDLES and bowls can be dried using a microwave oven. It is the quickest and the most aggressive approach to drying. Due to the variability in microwave ovens coupled with the variability in wood, this approach to drying can be most risky. As the density of the wood increases, the moisture escapes more slowly. The best approach is to use short cycles of 2 to 3 minutes at the highest setting followed by a 15-to-20-minute cool-down period. Seemingly, the wood has time to "breathe," allowing moisture to escape during cool-down.

By carefully weighing the piece, you will be able to determine when it has stopped losing moisture—that is, when it stops losing weight. You may also note that the piece loses more weight during the cool-down than during the cooking. It is also a good idea to let the piece cool-down overnight before putting it back on the lathe for final turning. The interior wood will likely be a higher temperature than the exterior and hot wood chips can cause a nasty burn on bare skin.

Microwaves work by exciting the molecules throughout the piece. The motion of the molecules generate heat by friction. Cook cycles that are too long with inadequate cool-down cycles can cause the wood to burn from the inside. The number and frequency of cook/cool cycles will vary depending upon the size of the object, the density of the wood, and the moisture content.

If you happen to be using the family microwave, place the piece in a brown kraft paper bag (without ink printing on the bag) to contain the wood sap that oozes out and the sap splatters that might fly around the oven.

Bill Stephenson is a woodturner and forester in Loveland, OH. For more on microwaving see pages 2–3 of the December 1995 issue of this journal.

for a 10- to 12-inch bowl, which leaves enough thickness for returning the dried, warped bowl.

2. Boil your bowl for 30 minutes. You might want to put some weight in it to keep it submerged. (I use a heavy weight.)
3. Take the bowl out of the boiling water with tongs and dip it in cool water to keep from burning yourself during further handling.
4. Dry the bowl for three weeks. The first week, Ron keeps the bowl in his shop, where it is 78 to 80 degrees in the day and cool at night. For the second week, he brings the bowl into his house where it is warmer at night. And for the third week he places the bowl at the top of a cabinet in his shop, where, because heat rises, it is warmer during the day. At night, again, the temperature drops, and Ron believes that this temperature variation seems to keep his wood from cracking. (Yes, the bowl will warp and shrink, but it will not crack.)
5. Start weighing your bowl. It will lose about 1 ounce of water per day. When the bowl weighs the same three days in a row, it is ready for final turning.

I have found this to be an excellent technique. Boiling evidently releases the water bound in the cell walls more quickly and with less stress than air-drying alone. With this technique I have had less cracking than with the more rapid microwave drying technique, and it is less fussy. I let my boiled bowls air-dry for three weeks inside my air-conditioned house. Some turners might want to lengthen the drying time, retarding the evaporation rate by placing the bowl in a paper or plastic sack for part of the time.

Advantages of boiling:

a. Drying is rapid, compared to traditional air-drying for six months.
b. Boiling will kill any microorganisms (or critters, for that matter) in the wood, a fact that anyone who works with spalted wood or who intentionally spalts wood will appreciate. By boiling, you "turn off" the spalting process.
c. Cracking with this technique is less than with air drying.
d. You can do large bowls that would not fit in your microwave.

Disadvantages of boiling:

a. Setting up the boiling process may be difficult. It requires an adequate heat source and a container with a lid large enough for the bowl. I found it best to boil my wood outside on a natural gas "fish cooker."
b. The three-week air-drying time is still long for those who want to start and finish a bowl in one day.

Double-cooking wood

I came upon this technique reading an article in *Popular Science* that asked, "Why do bagels get soggy when you microwave them?" The answer is that the microwave heats the water molecules inside the bagels but does not cause significant evaporation. To get a crusty bagel, you need to place the bagel into a conventional oven for a few minutes to cause surface evaporation.

I have been using this same approach on rough-turned bowls, and have been very pleased with the results. You can go from fresh-cut green wood to a completed dry bowl in one day, just right for those of us who are short on patience. The procedure adds only a couple of steps to the microwave technique:

1. Rough-turn your bowl as you

Method 2: Black walnut vase 8" tall dried by the very rapid double cooking technique. After three months the bowl shows no signs of cracking.

Method 3: English brown burl oak bowl, 9" dia., boiled and double-cooked. This fairly rapid drying process was intended to accentuate surface cracking. After three months there has been no additional cracking.

would normally for re-turning after drying.

2. Take the bowl off your chuck and microwave it. To minimize the amount of wood that has to be dried, I use a four-jaw chuck expanding into a rabbet cut into the bowl bottom. Chucking this way also makes it easier to do multiple remounting of the bowl during the drying process. On a 6-inch diameter bowl, I will set the timer for three to four minutes at full power. I want the bowl to be quite hot, without catching on fire. During this time, I begin preheating the conventional oven to 200 degrees.
3. Place the microwaved bowl into the preheated oven. Leave the door cracked open so that air can circulate. Circulation is important because you are trying to evaporate a large amount of water quickly. Check the bowl often. I usually leave it in the oven for about 30 minutes.
4. Turn the oven off and pull the rack out so that the bowl can cool, about 30 minutes, during which time more moisture evaporates
5. Remount the bowl and turn the bowl true-round, both inside and outside. You will probably be into moist wood again. This intermediate turning relieves drying stresses in the wood. Since this is a very rapid drying process, it is necessary to relieve as many drying stresses as possible to keep the wood from cracking.
6. Remove the bowl from its mounting, and dry again using the microwave and the regular oven: a couple of minutes in the microwave and another 30 minutes in the oven at 200 degrees.
7. Remount the bowl to finish-turn it. Sand and finish according to your preference.
8. Reverse the bowl to finish-turn the bottom.

If you perform this technique properly, your bowl will be dry without having warped. You may have some cracking with some woods.

Advantages of double-cooking:

a. This is a very fast drying technique. You can turn green wood to a dry bowl in one day.
b. The drying equipment necessary (the microwave and the conventional oven) is typically on hand.

Disadvantages of double-cooking:

a. The fumes of some wood will be unpleasant. You may want to do this technique when your spouse is out of the house.
b. This technique does not work well when turning heartwood and sapwood on the same piece; the moisture differential between the two will cause one to shrink more than the other.
c. Some wood will crack during this rapid drying process.

Boiling plus double-cooking

This technique is a combination of the two previous techniques and as such may offer the best of both worlds. It is fast but has the disadvantage that some wood may tend to crack. The procedure is as follows:

1. Rough-turn the bowl.
2. Boil the bowl for 30 minutes.
3. Dry the bowl using the double-cooking technique. described above.

The important difference is that you dry the wood at a much slower rate. Therefore, heat the wood at a lower temperature and slow the drying process by enclosing the bowl in a paper or plastic bag. This slower drying pace helps prevent cracking.

Advantages of boiling/double-cooking:

a. It is fairly rapid.

Disadvantages of boiling/double-cooking:

a. Some softwoods will crack, if you allow the wood to dry too fast.
b. Boiling is necessary, set-up for which can be an inconvenience.

Ron Hampton is an avocational turner in Texarkana, TX. He wrote on finding wood in the December 1996 journal.

END-GRAIN VESSELS

Cracks are not a given

CHARLES HUTSON

HOW MANY TIMES HAVE YOU ASKED yourself what can be done with a small-diameter log or crotch or a burl that surrounds a 4-inch-diameter limb? Have you considered the possibility of end-grain turning such pieces?

The first reaction to end-grain turning (hollowing with the grain aligned with the lathe axis) is usually negative. The hardness of end grain, the slowness in hollowing, and the eventual cracking of the finished piece usually steer turners away from the approach. However, with the proper techniques and material handling, a rich world of turning opens up.

To turn a vessel from a log section, begin by placing it between centers on the lathe with the pith centered and parallel to the lathe bed. Rough out the basic shape of the vessel. Face off the faceplate end, slightly undercutting it so that the faceplate will sit flat and square to the end grain. Remove the roughed-out vessel from between centers and stand it faceplate-end up. I immediately apply water-thin cyanoacrylate (CA) glue to the end grain using a piece of plastic grocery bag folded into a small pad and brushing out only enough to seal the surface and keep it from cracking.

I prefer mounting the work for hollowing on a thick faceplate that will accept numerous screws. For instance, if it is a larger piece weighing 50 pounds or more, I will use a $1/2$ x 6-inch faceplate and sixteen #12 $1\,1/2$-inch sheet metal screws. The mass of the faceplate and the multiple screws is critical to reducing vibration and holding the work securely.

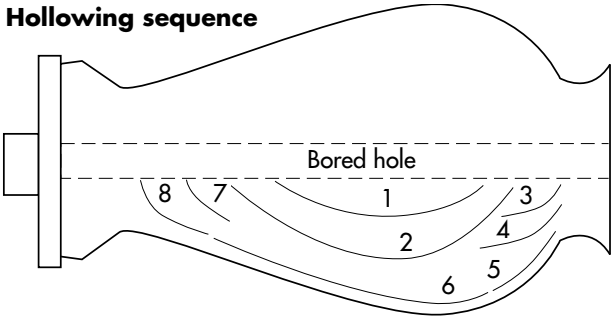
Begin the hollowing process by drilling out the pith. On a piece 6 inches in diameter and 18 inches high, I would use a $5/8$-inch bit and drill from the neck to within 1 inch of what will be the finished bottom. Allowing for the screws, you ought to be within $2\,1/2$ inches of the faceplate.

For the actual hollowing process I use the Woodcut tools from New Zealand (available from Craft Supplies, 800/551-8876). These are like a hook tool with a limiter or gauge attached to the top of the hook to restrict the amount of cutter exposed. They come in both straight and crooked neck versions, for working closed forms. You insert the tool through the bored hole and work in a progression of sweeping arcs until you reach the bottom. In roughing-out, I aim for a wall thickness (on a 6- or 7-inch-diameter piece) of $3/4$ to 1 inch. Ideal thickness varies with species and diameter. When the neck and shoulder area reach the desired rough thickness, again apply a thin coat of CA glue to these areas on the outside of the vessel. This helps to prevent checking while the remainder of the piece is hollowed.

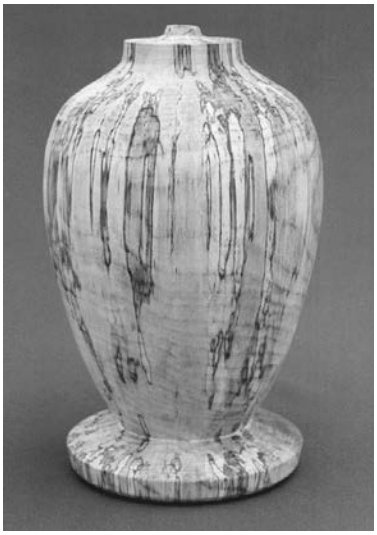
You hollow in a series of arcing motions, with the cutter moving from left to right, gradually sliding the tool forward into the wood. Always present the cutter to the wood

Rick Mastelli

Hollowing sequence

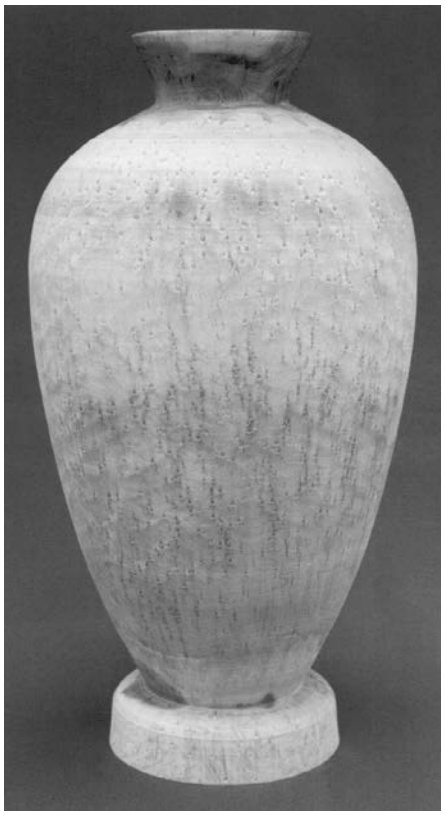


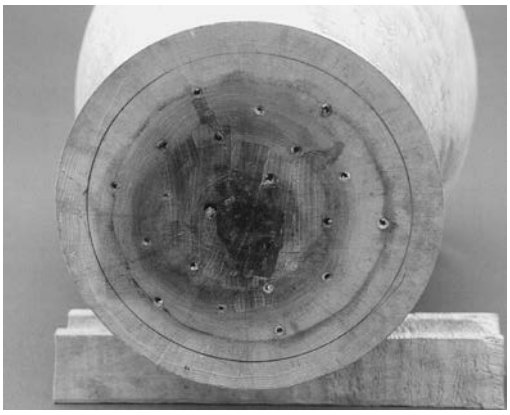
The Woodcut tools (the straight Mighty Midget, on the left in the photo, and the crooked-neck Cobra, on the right) are the author's choice for end-grain hollowing. A strategy for hollowing is illustrated above: Cutting zones 1, 2, and 6 are made with the straight tool, worked in an arcing fashion from top to bottom and bottom to top. Cutting zones 3, 4, and 5 are make with the crooked neck tool. And zones 7 and 8 are made with the straight tool working from the bottom and coming up the left side.

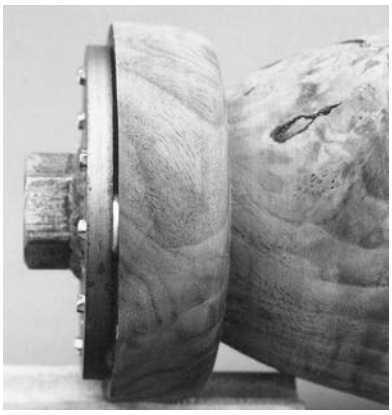


Spalted hackberry vase, roughed out between centers and ready to mount on a faceplate.

Photos, except where noted, by the author





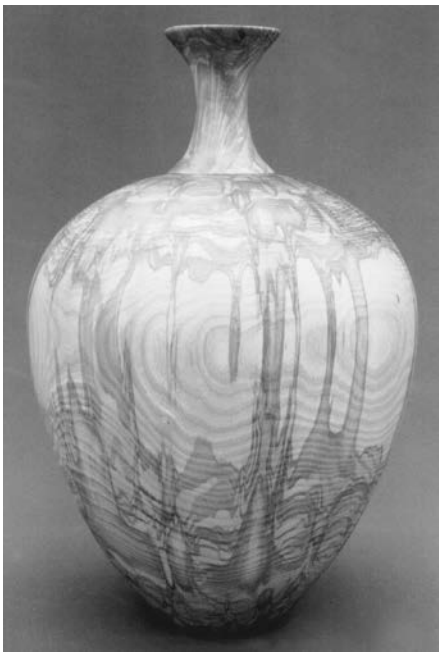


Birdseye maple vase, left, following complete drying procedures and ready for finish-turning. Note that the pith, above, shows no signs of cracking. To mount such a piece for finish turning and accommodate warpage from drying, a washer shim, right, pulls the top of the vase back into alignment.

in an area to the left of, and level with, center. As you cut down the side of the vessel, a twist of the wrist controls the tool's aggressiveness and thus the amount of wood removed. When you reach the bottom, adjust the tool so that very little cutter shows outside the gauge, and apply very little pressure forward. To produce a nice U-shaped bottom, begin with the cutter at the axis, move the cutter to the left of center, and retract the handle. Keeping the cutter in contact with the wood from top to bottom, and vice versa, will eliminate ninety-nine percent of cutter clogging. In only a few passes, top to bottom, the cavity fills with shavings. I use a shop vac with a flexible hose and a 2-foot $^{13}/_{16}$-inch i.d. copper tube taped to the end to remove the shavings.

The interior excavated, coat the remaining exterior of the vessel with green wood sealer. I do not coat the interior of the vessel. In my experience, the small mouth of the vessel restricts air circulation adequately to control drying and forestall checking. I leave the roughed-out vessel in a building with no heat until the moisture content is 20 percent or less (I check it with a moisture meter). Then I move it into a home-made dehumidifier kiln and gradually dry it to 6 percent or less before finish-turning.

If the piece has warped during the drying process, shims may be necessary. If so, screw the piece on the faceplate with only four screws. Place the tool rest along the length of the piece and rotate it by hand. If you note a pronounced high spot, mark this area with a pencil, lightly push the tool rest against this area, then rotate the piece 180 degrees. Measure the distance from the tool rest to this point—you will need a shim that is one-half this distance. Place flat washers of the required thickness over the faceplate screw that was on the high side of the work; this should pull the neck back to its original position.



End-grain turned sporadic-heart ash vessel (19" tall) shows the exciting grain patterns possible in an end-grain vessel. The neck was added to the base once the interior was finish-turned.

Install all remaining screws and progress through outside shape and final interior turning. Dried wood is much harder to turn than green, but the roughed-out vessel has walls only $^3/_4$ to 1 inch thick; therefore, very little material has to be removed to reach final thickness of $^3/_{16}$ to $^3/_8$ inch. For me, the time spent removing this dry wood is recovered in the time saved sanding a truly round and dry workpiece. And drying the way I do, I have no trouble with the pith cracking.

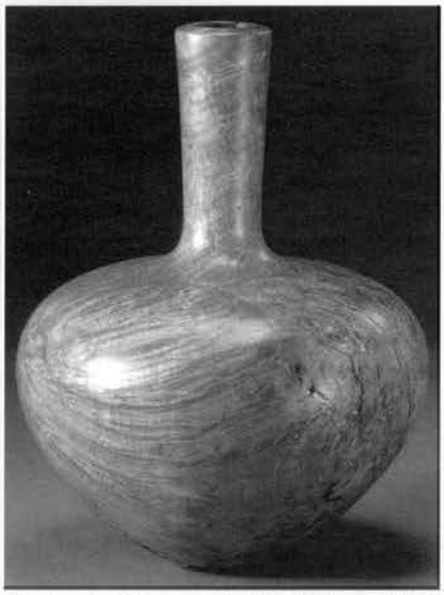
Learning to turn end grain has its own rewards: the possibility of fantastic patterns and the ability to use stock that otherwise would be cast off or cut into much smaller pieces.

Charles Hutson, of Marshall, IN, turns end-grain vessels and has designed a long-bore handle for the Woodcut tools. He will be demonstrating at the Utah Symposium and at the Craft Supplies booth at the AAW symposium this summer.

ARTICULATED HOLLOWING SYSTEM

Doing the impossible easily

HUGH MCKAY



Demonstration vessel: 12" high and 10" dia., with a 5½"-long, 1⅜"-i.d. neck.

THE HOLLOWING OF A TURNED WOOD vessel with a hand-held lathe tool through a restrictive opening is indeed a challenge. Controlling the tool during frequent highly leveraged cutting actions is physically very demanding. Loss of control and the resulting sudden directional change of the cutting tool is a constant risk and a source of tension to the turner. Cutting through the wall of the form during what amounts to blind turning is also easy to do. The turner who through much practice manages to create an internal void in a turned form leaving a thin and consistent wall thickness has mastered a difficult skill and should be justly proud. But without question, the technical demands make it very difficult to attend to the aesthetic issues of hollow forms, or to enjoy the process of making them.

The system I'll describe in this article takes the tense, physically demanding work out of hollowing, and makes it rather a fulfilling mental, creative exercise.

I was not trying to develop an easier way to hollow a turned form when I started developing this system. I wanted to hollow a long-necked vessel—in whatever way I could. I considered the task impossible at first. I had set out, using a 1-inch-diameter boring bar, to hollow an 18-inch-diameter vase form having a neck 7 inches long with a 3-inch internal diameter. The techniques and tooling I developed along the way now allow me to hollow that same 18-inch-diameter form through a neck that is 14 inches long, with an internal diameter of 1½ inches. I don't know of any other means that can accomplish this task.

A real strength of this system is the versatility that it allows when creating new forms. It has enhanced my abilities as a designer. But with these increased capabilities comes the realization that there is much more to do! I have by no means fully explored the creative potential of this system. Once a woodturner gets a taste of this system, intuitively grasping its potential and the relative ease with which the work can be accomplished, I do not expect he or she will easily go back to the old ways. I now consider hollowing a mundane task that I am in complete control of, not the white-knuckle challenge that it once was.

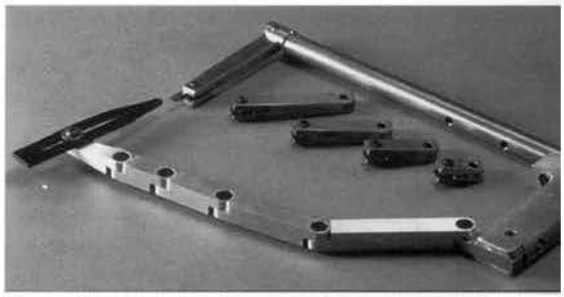
Heightened tool control allows another woodturning challenge to be easily tamed: the interrupted cut. The intermittent cutting of wood and air when trying to shape an uneven natural edge or the inside of a form with a large hole in its side can be a jarring, distracting experience. This system can help with this problem, allowing smooth, controlled cutting motions.

As a demonstration piece, I'll be hollowing a long-necked vessel (pictured above left). If you can hollow a long-necked vessel, you can hollow almost any form you can create on the lathe. There are many vessel forms that have not been explored on the lathe. Almost any vessel that can be thrown by a potter on a wheel can be hollowed using this system.

The outrider, support platform, and back restraining bar, in combination with the articulated cutter arm, make this system unique in allowing easy, stress-free hollowing of small-mouthed, even long-necked vessels.

The system

The first component of my system is a series of interchangeable *articulated*



The author's articulated hollowing system includes cutter arms of five difference lengths, each of which can be positioned at one of three angles, and an articulated caliper with a flexible polyurethane feeler tip.

cutting arms. In its straight, or 0-degree, position, an arm can go through the neck and then be reoriented and locked in either its 45- or 90-degree position for cutting shapes of larger diameter than the opening it passes through. The arm clicks into one of its three positions when one of the detents in the arm aligns with a ball bearing. The ball bearing is pressed against the detent by a spring-loaded push rod, which also locks the arm in place by tightening a hand knob at the opposite end of the tool.

With a small-diameter neck and large-diameter body, longer arms are necessary to extend the cutter laterally for the later stages of hollowing. My system incorporates five interchangeable cutting arms of various lengths.

With an offset of up to 5 inches, a tremendous amount of tool roll will develop during a cut. The second component of my system, the *outrider,* is attached to the boring bar and extends further from the boring bar than the articulating arm; in combination with a *support platform,* the outrigger negates tool roll. At first I tried a very long outrider that ran most of the length of the boring bar supported by a normal tool rest. It was scary with the articulating arm locked inside a spinning vessel and trying to make a controlled cut this way. Also, as the tool is extended further from the tool rest, another force comes into play: tool pitch. During intermittent, highly leveraged cuts, a see-saw motion develops, with the tool rest acting as a fulcrum and the woodturner nervously hanging on for the ride. It was panic that led me to the third component of my system: a a *back restraining bar* attached to the support platform.

It would seem at first that the purpose of the restraining bar is to protect the turner from the boring bar flying up if it catches during a leveraged cut. It does protect against that. But its real function is to provide complete control of the cutting tool. You lift the end of the boring bar against the restraining bar, rather than trying to keep the boring bar from lifting during the cut. With the lifted boring bar sandwiched between the front of the platform and the restraining bar, tool movement is limited to forward and back, left and right—movements that are easy to make in a smooth, controlled fashion. The restraining bar is a control mechanism, not just a safety feature.

So with tool roll completely eliminated by the outrider, and tool pitch prevented by the back restraining bar, the operator can concentrate on cutting and shaping wood without duress. The petite 14-year-old girl demonstrating the system in the photo on the facing page is the daughter of a good friend. Breanna had never turned wood before we spent about five minutes showing her the basics of the system. She quickly developed the technique for cutting with the tool. In the photo she is actually removing wood fairly aggressively. Note that the overhang of the boring bar is about 12 inches and the articulated arm is extended laterally 3 inches from the boring bar. This a highly leveraged cutting action, yet she is completely relaxed.

After I blew a hole through the side of a $400 piece of redwood lace burl, I added the fourth component of my system: the *articulated caliper as-*

Figure 1

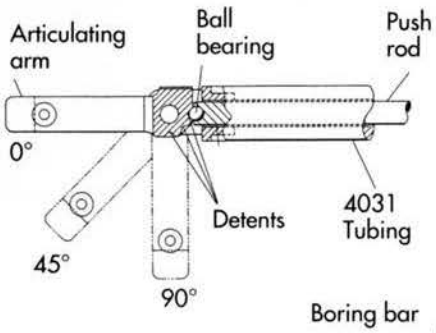
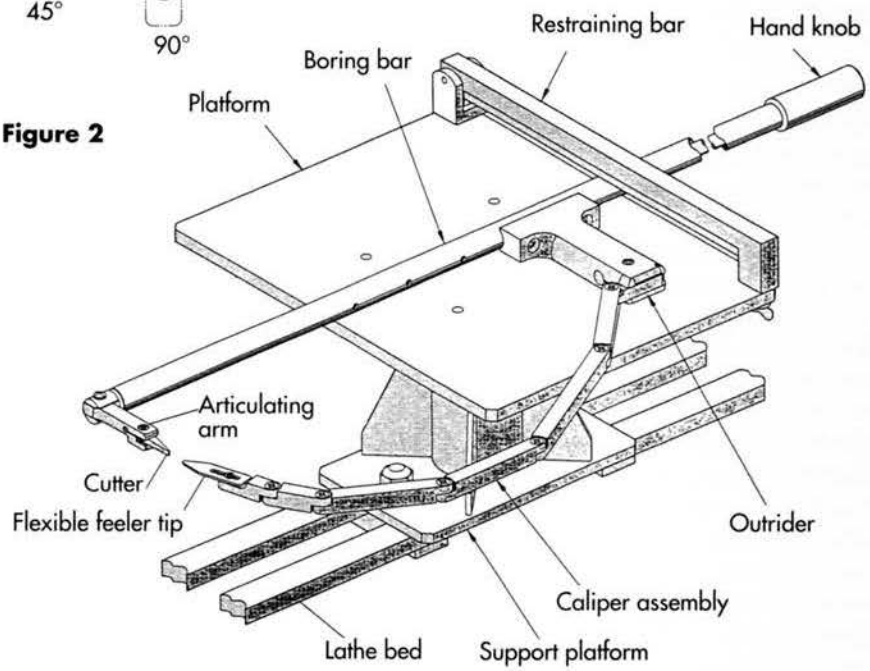
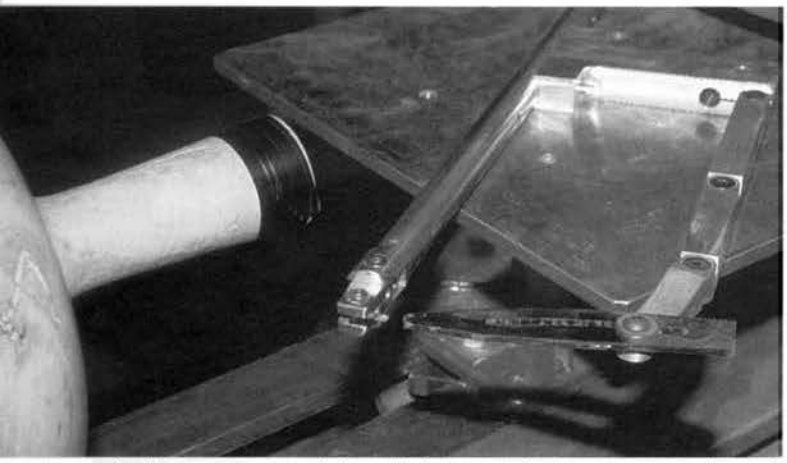


Figure 2





The boring system, left, with the articulating arm straight and the cutter at 90-degrees to the arm, is set up to enlarge the neck opening. At right the system is set to begin shaping the transition from neck to body. Note the masking tape to indicate the appropriate depth of the boring bar in the vessel.

sembly to help keep track of the cutting tip. This feature, consisting of pivoting aluminum links and a flexible polyurethane feeler tip, can be positioned to accommodate the various positions of the cutter inside the hollow form. It has proven invaluable to quickly and accurately achieve a predetermined wall thickness.

The hollowing process

The hollowing process begins with the demonstration piece turned (leaving some bulk at the base of the form for stability where the faceplate is attached), sanded, and drilled to depth with a 1¼-inch hole. The first cuts involve taking the neck down to a finished wall thickness of 3/16 inch. The articulating arm is straight, or in its 0-degree position, and the cutter is 90 degrees to the arm (photo, above left). The caliper assembly is attached to the outrider's pivoting caliper arm and the gap between the feeler tip and the cutter is set for a 3/16-inch thickness. When the cut begins, the thick wall of the neck causes the flexible tip to be bent down; as the cut proceeds and the neck wall approaches final thickness, the feeler tip straightens to horizontal. When it just touches along the whole outside surface of the neck, wall thickness is achieved.

The demonstration piece is a somewhat green chunk of madrone burl, and if the neck warps a little while drying during the rest of the hollowing process, I don't want to have to come back and make finishing cuts with the neck out of true. I therefore make all the roughing and finishing cuts in the neck before hollowing the body of the form.

Next, I mark the boring bar with masking tape to indicate the point at which the neck will open in to the body cavity. I move the outrider back two adjustments (4 inches) to allow the boring bar deeper access into the form. It is not necessary to attach the caliper assembly during this stage of roughing-out. A series of arcing cuts, stopping periodically to evacuate the shavings, enlarges the void.

The bulk of the waste removed, I adjust the boring bar and caliper assembly for the transition area between the neck and body (photo, above right, and Figure 3). I position the cutting tip approximately perpendicular to the outside of the form at this point and align the caliper assembly opposite it. As with the neck, I want to clean-up this part of the vase form now, in case the wood moves in drying further during later hollowing of the body.

To enlarge the void, I use the next longest articulating arm in the 90-degree position (Figure 4). In this position, the boring tool is about twice as wide as the neck's diameter. I therefore insert the tool through the neck with the arm in the 0-degree position, and then bump the arm into the 90-degree position. By listening to the clicks of the ball bearing in the detents, you can determine when the proper position is achieved, and lock it with the hand knob.

Once all the wood is removed that can be reached with a particular setting, I attach the next longer articulating arm and continue all the way through the largest diameter of the vessel, then orient the articulating arm at 45-degrees to reach the lower areas of the body (Figure 5). I use the caliper system to check the walls occasionally while roughing out, aiming for approximately 3/4-inch thickness through the entire body of the form.

For shaping to final wall thickness, I leave the caliper system in place, set to 3/16-inch thickness, and remove wood sequentially, starting near the neck opening and moving across the top, down the sides, and to the bottom of the form.

It is important to keep the flexible tip opposite and in line with the cutting tip in order to maintain a consistent wall thickness. If you try to push a particular setting of the tool further along the curve of the vessel than the area it was set for, you're liable to angle the tool in relation to the feeler tip and produce a thin spot in the vessel wall (Figure 6).

The trick, then, is to learn to keep the cutting tip perpendicular with the outside wall of the vessel as you work. You have to remain aware of

Figure 3

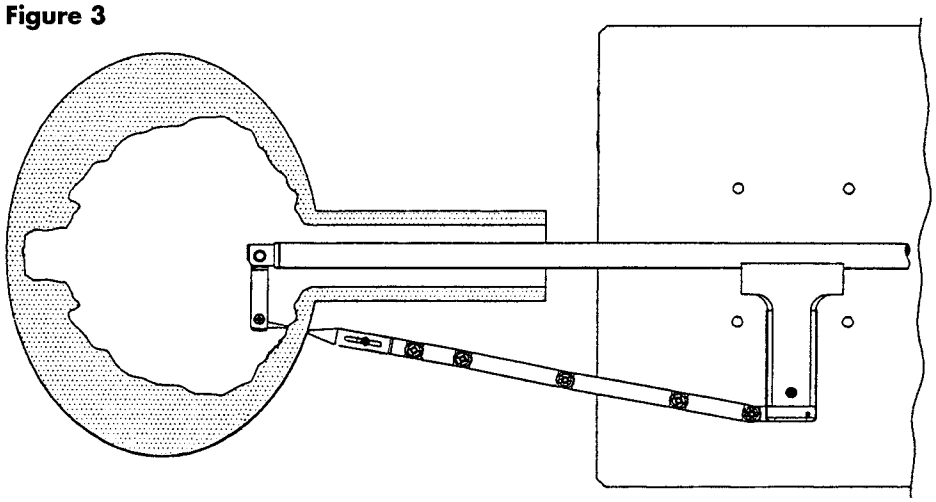


Figure 4

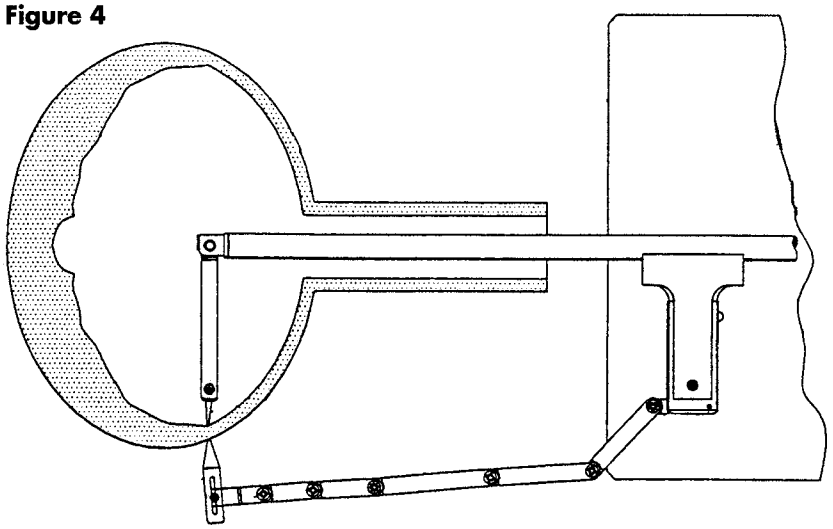


Figure 5

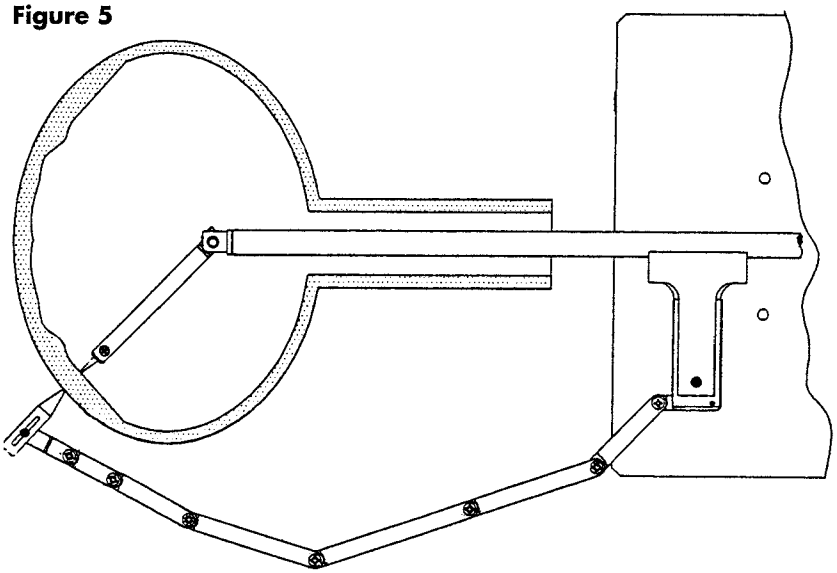
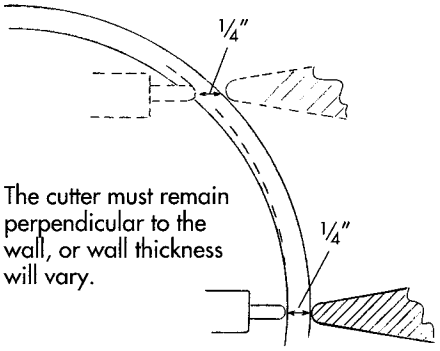


Figure 6



the orientation of the cutting arm and cutter inside the vessel and limit your cut to that area of the vessel that the tool is set up for. It's therefore best to take short cutting strokes rather than long ones. A short pull stroke with a slow chopping rhythm is the most efficient, controlled method, pulling the cutting tip into the wood and back toward yourself. You keep your eye on the flexible feeler tip, and when it straightens out and just touches the outside wall, you've reached final thickness.

Even as the boring bar is extended further from the platform's edge during final cutting, you do not experience any physical stress from the increasing load on the boring bar. The cutting action feels the same, whether there is a 3-inch or a 12-inch overhang.

Now going back to the outside of the form, I turn down the bulk of the waste wood that the faceplate is mounted to. I sand the newly exposed sides of the vessel, blending them with the original form.

Once the vase is parted off, it air-dries for several weeks, pleasantly distorting in the process. And then I apply an oil and wax finish.

Hugh McKay is a full-time turner/sculptor in Gold Beach, OR. He will be a demonstrator at the AAW San Antonio symposium, July 18–20. His articulated hollowing system is patent pending. For information on availability of this tool, contact him at 541/247-2776.

"TURNED FOR USE"

Jurors' statements from the AAW's first juried show

EDITOR'S NOTE: *Innumerable details go into the staging of an exhibition. But at the core of a juried exhibition is the jury. The caliber of the AAW's first juried show, "Turned for Use," will ultimately be determined by the work itself (a sampling of which appears on these pages), but the measure of that caliber lay in the hands of the three jurors, chosen for the complementary depth and breadth of their expertise.*

Steve Loar, having proposed the idea for this show in his essay, "We're Not in Kansas Anymore" in the December 1995 issue of this journal, was an obvious first choice. As an educator (he is Director of the School of Art & Design and the School of American Crafts at RIT), and as a regular commentator on design and cultural issues within the turning community, his role in this exhibition has been central.

Turnings have been useful for a long time, and Charles Hummel was invited to bring an essential historical perspective of this craft to the jury. He is former Deputy Director of the Winterthur Museum and Library, author of the book, With Hammer in Hand, *on the eighteenth- and nineteenth-century Dominy woodworking shop, and a trustee of the Wood Turning Center.*

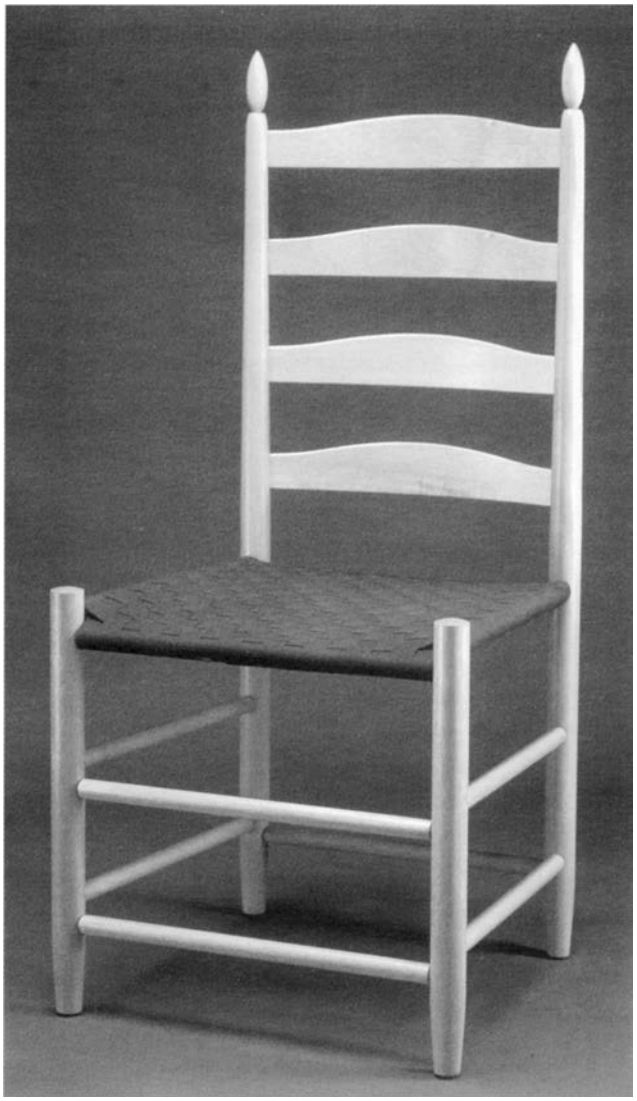
No one has established a stronger association with high-quality utilitarian turning than Richard Raffan. Through his books, videos, demonstrations, and woodturnings, he has set a standard internationally, not only for turned objects that are enriching to live with but for conveying the ideas and techniques that lead to such work. It's hard to imagine a show entitled "Turned for Use" without Richard Raffan.

Following are these jurors' statements. They reflect the good spirit that characterized their much appreciated efforts in helping to shape this show. Besides the thirty-one juried pieces, the show includes representative work from Loar and Raffan and eight groups of pieces from the Old Sturbridge Village Collection (see pages 8–14). The show runs July 17 through September 21, 1997, at the San Antonio Museum of Art (210/978-8100). A comprehensive catalog will be available at the museum and through the AAW Administrator for $4, postpaid.

"TURNED FOR USE" *COULD* BE IMPORTANT. It could be a water-shed moment not unlike the first major exhibition of contemporary woodturning: the pivotal first "Turned Object Show," back in 1981. That exhibition, like this one, may not have shown all that there was to see in the field; some individuals did not know of the event, while others consciously chose not to be involved. It did, however, do a fine job of showcasing some of the best and the most innovative work of the moment.

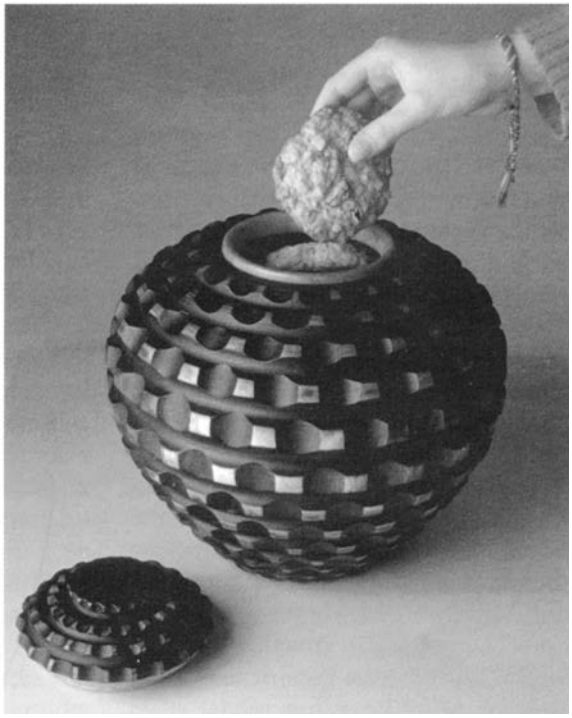
"TfU '97" deserves to be the first of many exhibitions of beautiful inventive useful wares, where utility has not been compromised by decorative, sculptural, or "useless" work, and the satisfaction of the user has actually been enhanced. While the number of works submitted to this competition was modest and the number of categories represented was astonishingly few, the accepted works owe apologies to no one. They fulfill my original precepts for such an event: to give some sense of the level to which beauty, invention, and utility are being explored in the field of contemporary turning. It was exasperating to know that more good work is out there but was not submitted. One can only conjecture as to the myriad reasons.

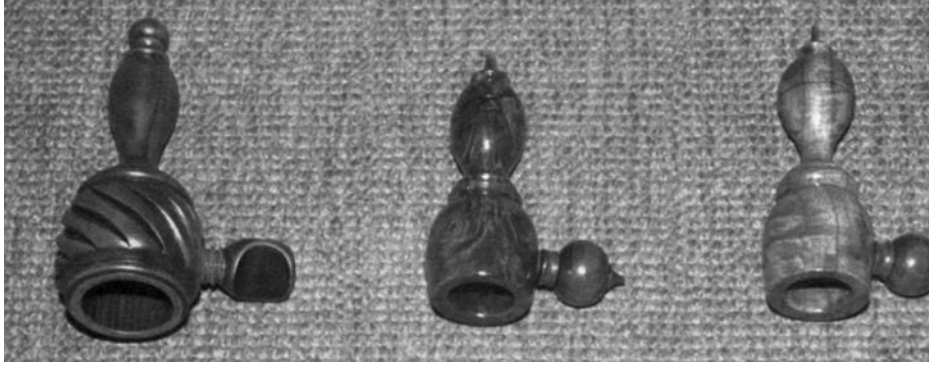
Flute and Flute Keeper (elkhorn sumac, black walnut, elm, and maple burl, 25" long) by Donald Derry, Ellensburg, WA.

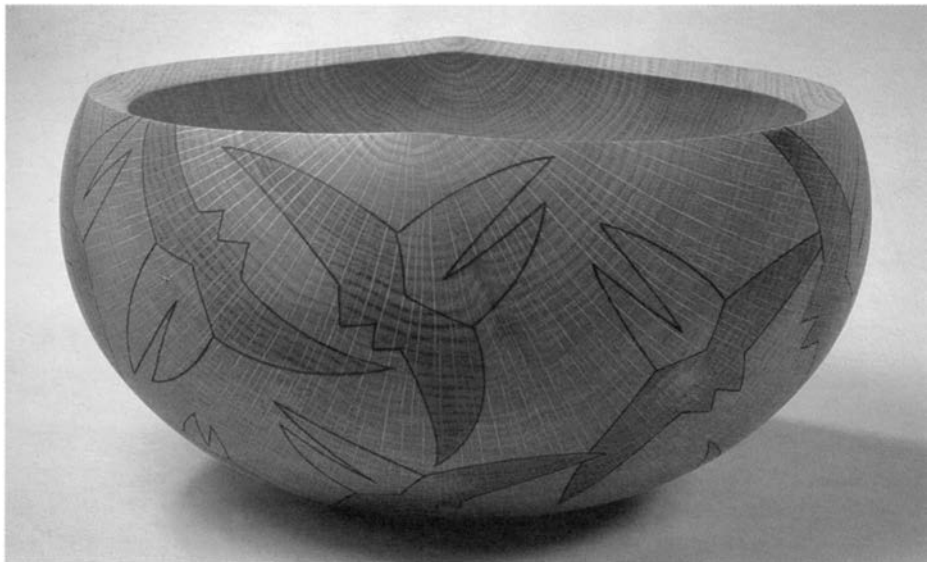


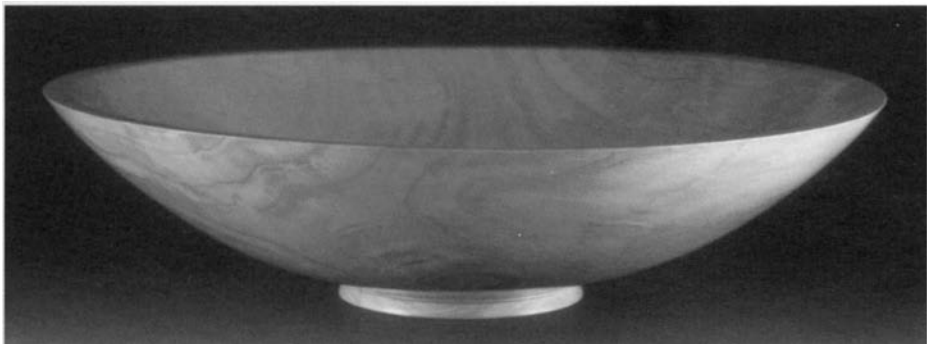
Clockwise, from above: Five-Drawer Box (madrone burl, claro walnut, Baltic birch plywood, and others $10^1/_2$" high) by Ray Jones, Asheville, NC. Shaker-Inspired Side Chair (ash, $41^3/_4$" high) by Robert Sonday, Free Union, VA. Lidded Jar (ebonized cherry, 10" high) by Luke Mann, Waitsfield, VT. And Candlestick (East Indian laurel, African blackwood, and brass) by Christian Burchard, Ashland, OR.

Jurying an exhibition is much like grading a project assigned in school. This show is made up of "A" work; "C" work, "B" work, and in the final cut, even "B+" work was not acceptable. As jurors, we drew from and thoroughly enjoyed each other's particular knowledge as well as our largely overlapping sensibilities of beauty, correctness, appropriateness, and execution. Rick Mastelli is to be thanked for taking a concept and nurturing it to fruition. The catalog (and this article excerpt) will mark a moment's passing acknowledgement of utility in the field of turning. Or, more hopefully, it will mark the beginning of a genuine and visible search for the fusion of utility with decoration, the pragmatic with the fanciful, and the expansion of our









Counter-clockwise, from above: Lidded Container, (ebony, bone, pink ivory, and antler, 5¾" high) by Kip Christensen, Springville, UT. Nutcrackers (walnut, 6" and 7" long) by Andy Matoesian, Edwardsville, IL. Salad Bowl (oak, dye, 14" dia.) by Mike Hosaluk, Saskatoon, SK. And Bowl (Arizona cypress, 16" dia.) by Bob Clancy, Sandia Park, NM.

sense of "function," within the field of turning.

Much of our culture defines art as useless, and by definition, function as artless; seemingly our contemporary senses cannot be satisfied via utility. The works in this exhibition beg to differ. —*Steve Loar*

BETWEEN MAY 1831 AND FEBRUARY 1832 an astute Frenchman, Alexis de Tocqueville, traveled in the United States of America to observe the impact of democracy on its institutions and daily life. In Chapter XI of his book, *Democracy in America,* entitled "In What Spirit the Americans Cultivate the Arts," he commented:

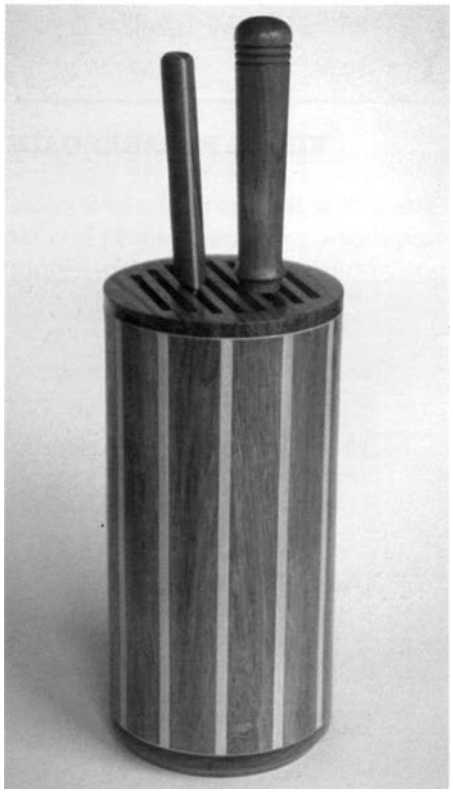
"Democratic nations, among whom all these things exist, will therefore cultivate the arts that serve to render life easy in preference to those whose object is to adorn it. They will habitually prefer the useful to the beautiful and they will require that the beautiful should be useful."

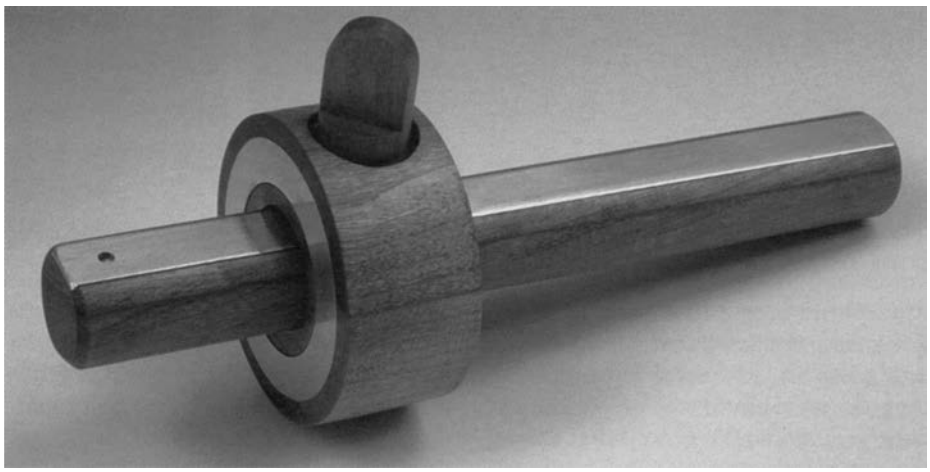
After viewing the works submitted to the jurors for this exhibition, it is gratifying to note that production turning by AAW members still exemplifies the useful being beautiful and the beautiful being useful.

From the eighty-eight entrants we selected work by twenty-four turners, or just under one in every three entrants. My criteria for selection required that five aspects of an object under consideration be met. They were idea, choice of materials, technique selected, execution, and finished form (i.e., aesthetics, proportion, and finish). There were many objects, for example, that represented good ideas, but those ideas were not well executed. Some works, while well-executed, had surface decoration that did not enhance the finished form. And so it went.

To my knowledge, none of the jurors considered categories or types of objects that had to be represented in the exhibition. Nor did we consider the names of applicants in making our selections.

I have to express my disappointment, however, that some categories of objects were missing from the en-





Clockwise from above: Knife Holder and Knives (teak, yellowheart, basswood, 11" high) by Gordon Harrison, Juneau, AK. Echopods, (ash, 18½" high) by L.B. Doyle, Jr., Menlo Park, CA. And Marking Gauge (walnut, brass, 11" long) by Dewey Garrett, Livermore, CA.

tries or were present in small numbers. There was very little work of large scale submitted. There were only two tools, a few lamps, and a few chairs. Production turning in the seventeenth and eighteenth centuries included stair balusters and newel posts, pulleys, tackle blocks, a wide range of domestic objects, furniture, and architectural elements for houses and public buildings. The John Grass Company in Philadelphia, in business longer than any other turning company in America, still exists on commission work for turned balusters and staircase elements, for example.

Equally disappointing was the fact that only about one and one half percent of the total membership of the AAW decided to submit entries for "Turned for Use."

The objects selected for this exhibition, however, are of excellent quality and should serve as a source of pride to all AAW members. They will also please anyone who has an interest in woodturning. Hopefully, they will also serve to spur woodturners everywhere to make equally imaginative, well-executed objects that are in the spirit of de Tocqueville's observation: beautiful and useful; useful and beautiful.

—Charles F. Hummel

"Turned for Use" is a welcome intrusion into the round of woodturning exhibition where aggressively non-functional forms reign supreme and where practicality is often seen to devalue an object and demean the maker. One should feel ashamed of turning functional objects only if they are ill conceived (don't work), poorly made, or pretentious.

Few activities can be more fulfilling or challenging than the creation of a serviceable object that can be used and enjoyed for decades, or even generations. It is as easy to create an object that functions well, that does the job, as it is difficult to make one that will also grace the eye when not in use, and feel good in the hand.

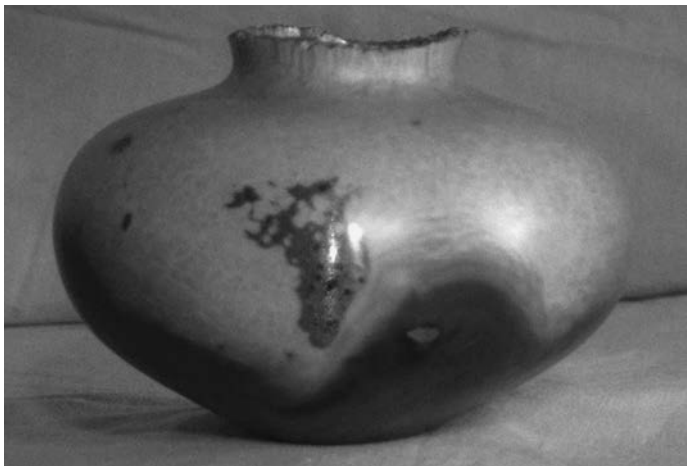
By handling an object in which form, function, and tactile elements combine successfully, we extend our perception and enjoyment of that object and enrich our daily lives. And whilst non-functional or sculptural turnings sit aloof to be viewed, utilitarian objects become more interesting with age as the inevitable scuffs and scratches of daily life combine with constant handling to create those wonderful patinas associated with a well-used tool handle or stair rail polished by a thousand sweaty palms.

The useful can be beautiful, especially when used. *—Richard Raffan*

STONE AND BRASS INLAY

Highlighting "defects"

VIRGIL R. BARKSDALE



Malachite and brass inlay enhances the natural voids of the manzanita root burl piece, above, as does turquoise and brass inlay in the boxelder piece at right.

IF YOUR WOOD SUPPLY IS LIKE MINE, it's hard to find something to turn that doesn't have cracks, voids, or bark inclusions. We're told that this is the nature of wood, and that we have to work with it. Now, I like a turned piece with voids or inclusions, but I have missed selling pieces because some buyers don't. They like the form of the piece and the figure of the wood, but they see the crack or void as a defect. After a few lost sales, I began looking for ways to fill these defects without detracting from the work but rather adding to it.

I first tried sanding dust, which worked okay for the small cracks but not the larger voids. I next tried brass, which worked on most cracks and voids, but seemed to lack something, visually. At the 1994 AAW symposium I saw Jerry Brownrigg's banksia pod turnings inlayed with turquoise, and I liked the idea. So I began working with crushed turquoise in small voids and inclusions. Also, the fine stone dust worked well in the cracks. But on very large voids or inclusions, it would take a lot of turquoise.

Discussing this problem with two friends, Joe Milsap and Allen Cobb, we came up with the idea of combining the brass and the turquoise. I laid fine brass filings into a void, then randomly set stone chips in around the brass. This wasn't bad, except that the small voids around the stone chips necessitated going back and filling with either fine stone dust or brass powder. It didn't look quite right—not natural, if you will. So I tried mixing the turquoise dust and chips with the brass filings This combination laid up well, with no small voids, and it looked more natural. I finally had an inlay material that I liked, and I now work with it. In addition, I have experimented with other minerals: malachite, chrysocolla, azurite, sugilite, and coral (which are available at many local gem and mineral shops) The combination of brass and these minerals, in different proportions, creates a rich pallet of inlay effects.

Preparing to inlay

To determine where I will need inlay material, I first turn the outside shape; burl inclusions can sometimes run deep, and you can save a lot of expensive wood by knowing when to stop. The size and extent of the voids dictate the preparation.

Voids and bark inclusions must be cleaned out, using dental picks, a rotary tool, or other means, including sandblasting. A syphon-fed sandblaster works but is slow. Pressure feed is better, but you need to take care that you do not blast where you don't want to; it's very aggressive.

Once clean, any void that is deeper than $\frac{1}{8}$ inch must be prepared with a bed. If the recess is over $\frac{3}{4}$ inch deep, I begin with wood chips, packing them in to leave the void $\frac{1}{2}$ to $\frac{3}{8}$ inch deep and then running thin cyanoacrylate (CA) glue to fix the chips in place. Next I use finer chips and dust, saved from my Dymondwood work, and tamp that in until the recess is $\frac{1}{8}$ to $\frac{1}{16}$ inch below the surrounding surface. An inlay this thick will not chip out when I work the surface, nor will I see through it to the bed below. Nevertheless, I try to match the color of the wood dust to that of the inlay. I set this bed with CA glue, too.

To prepare the inlay material, I first decide what type of mineral

stone to use, then crush it with a mortar and pestle (I use a ½x 3-inch pipe nipple with end cap as a mortar, and a length of hardened drill rod as a pestle) or in an electric coffee grinder (choose one you don't want to use for coffee anymore). A sieve separates the fine stone dust from the chips.

Now I mix the brass filings with the stone dust until I like the hue, then mix in some stone chips.

Inlaying

As I pack the mixture in, I try to keep it as close to the turning's surface as possible. It doesn't hurt if the inlay is slightly higher than the surrounding wood, but you don't want to do too much sanding. When I like it, I fix the inlay by dribbling thin CA glue over it.

When the glue is set, I level the inlay using foam-backed sanding pads in a high-speed drill. I begin with 60- or 80-grit silicone carbide floor-sanding paper, taking care not to sand the surrounding wood. Once I have the inlay flush with the wood, I can turn the lathe on and sand the entire piece, 100 through 400 grit.

Sometimes there will be very tiny pits and depressions in the inlay surface. I take fine stone dust or a mixture of this and fine brass powder and work it in. Before coating the entire inlay surface with CA glue, I spray it with the CA accelerator. This way, when I paint the glue on, it will set up, including in the dust-filled voids, and not run off the inlay surface to stain the surrounding wood. When this composite is set, I sand the entire piece again with 400 grit.

For a finish, I like Seal-a-Cell with a Royal Finish top coat, buffed using muslin charged with white diamond compound. Lastly, I apply a coat of carnauba wax and buff some more.

Virgil R. Barksdale turns professionally in Seminole, OK. He will be demonstrating his inlay techniques at the July 1997 AAW symposium in San Antonio.

Anasazi Bowls

Turquoise banding

GENE AND PEGGY KIRCUS

Aspen evokes Colorado, where the name denotes both a town and a tree. More than five years ago, when we became more serious about turning than skiing, we decided that aspen would become our specialty. Since then, we have hauled a lot of aspen shavings out of our shop and created some satisfying products.

Among our most successful turnings are aspen bowls with turquoise inlay and pierced designs. Our wood source is standing-dead aspen which we cut in the forests of Colorado.

Anasazi pottery from the period 1100–1300 AD inspires our bowl designs. While the Anasazi included the cliff-dwellers of Mesa Verde, their culture was spread throughout Arizona, Colorado, New Mexico, and Utah. Our goal has been to embrace the spirit of these Southwestern people in our works. We have adapted two of the Anasazi pottery designs for our bowls. One employs a concave curve from the widest edge to the top of the bowl (pictured below). The other is a closed form with a wide mouth (pictured on page 33).

Turning the bowl

Small bowls up to about 5¼ inches in diameter (the subject of this article) can be turned from whole logs with the pith in the center. There doesn't seem to be any problem with aspen splitting when used in this manner if the wood is solid and has been sealed and dried properly. (We make larger bowls more conventionally, with the log cut lengthwise through the pith.)

Select a log which is approximately 6 inches in diameter, and crosscut off a 1 foot length. Mount it between centers and smooth it round. Divide the log into three sections, each 4 inches long, and mark with a pencil. Cut a tenon to fit your chuck on each of these three sections. Remove the log from the lathe and separate the sections on the band saw. You now have three bowl blanks, a much more efficient approach than doing one at a time.

Our set up is a One Way Stronghold chuck on a Woodfast lathe, hence the tenon. You can use a faceplate, but aspen is a soft wood and

The turquoise band and pierced design of this aspen bowl complement its Anasazi roots.

the screws tend to pull out. If you do use a faceplate, no tenon is necessary; simply glue the bowl blank to a waste block attached to the faceplate.

The tenon should not be so long as to rest against the bottom of the chuck. A 3/8-inch-long tenon works well for most chucks, allowing the bowl blank to seat against the tops of the jaws. This is important for accurate rechucking in later steps.

With the blank secured in the chuck, begin shaping the outside of the bowl. A 3/4-inch roughing gouge works well. At the widest diameter of the bowl, cut a 1/2-inch-wide flat, angled slightly toward the top. This is where the groove for the turquoise will be cut. Angled up, the turquoise will be more prominent on the finished bowl.

Drill a hole in the top of the bowl just short of the depth you wish to turn the inside. We use a 2 1/8-inch Forstner bit.

The Termite ring tool is excellent for hollowing aspen bowls. The small or medium cutter works quite well. Turn to near-final wall thickness in stages from the top of the bowl in, to minimize vibration as you work. Leave a little extra thickness where the turquoise inlay will be.

It is easier to pierce the top side if it is not too thick. Begin with 3/16 to 1/4 inch so that after the final cuts and sanding it will be about 1/8 inch thick. We usually make a final cut on the outside after completing the inside, in case the wood has moved.

Sand the inside of the bowl, working up to 400-grit paper. Incidentally, the size of the hole in the top and the inside depth of the bowl are determined by the size of your hand and the length of your fingers. You must be able to reach inside and sand. Unsanded or torn surfaces indicate an unfinished bowl.

In preparation for the inlay, apply sanding sealer to the flat area plus about 1 inch to each side. This will prevent the CA glue from soaking into the face of the bowl.

Mark two lines around the outside of the bowl 1/4 inch apart in the center of the flat area. Using a very sharp small skew, make a cut on these lines. With a parting tool cut a groove between these lines approximately 3/32 inch deep. Undercut the edges of this groove slightly to secure the turquoise.

Piercing the top

The pierced designs are accomplished prior to inlaying the turquoise. If mishaps occur and the bowl must be discarded, turquoise is not wasted. Laying out a symmetrical design begins with reference lines marked on the top surface of the bowl. Center the tool rest and bring it close to the piece. Mark circumferential guidelines; then, using the indexing feature of your lathe, mark lines perpendicular to these. This is more easily done by two people, one marking and one rotating the bowl to the next index location.

Using these guidelines draw the designs. A small see-through flexible plastic ruler will bend to the contours of the piece, helpful in drawing straight lines on the curved surface.

We use a Foredom flexible shaft power carver with a moderately aggressive burr to rough out the design. Although a major investment, this tool has made carving a joy. But there's no need to buy a fancy power carver to experiment. Use your Dremel Tool or other means to rough out the design. The fine finishing is done with small hand files. A good selection of burrs and files is available from MSC Industrial Supply (800/645-7270).

Inlaying the turquoise

Most of the rough turquoise available needs to be crushed into smaller chips. We crush the mineral using a device fabricated in a local welding shop: a pipe welded upright to a plate (a mortar) and a rod (a pestle) that fits inside it. Scoring the end of the rod helps keep the turquoise from packing in the pipe.

Place a few nuggets into the pipe. Pound with the rod several times. Pour the chips through strainers with various sizes of mesh, stacked from top to bottom: coarse to fine. Sizing the chips gives a more uniform appearance to the inlay. Those chips that are too large to go through the mesh are returned to the crusher.

The size of chips used in the inlay is a matter of personal choice. The smaller the chips, the easier the inlay is to complete, but the color and sparkle of the larger chips is more intense. We recommend using smaller chips while you learn the technique.

The inlay work can be accomplished at the lathe, but it's more comfortable sitting at a table. If you work with the piece off the lathe, you will need a small box or other container to hold the piece so that both hands are free. We have constructed a small rectangular box of scrap wood, 7 by 10 inches, that not only holds the bowl but also catches chips that fall (photo, facing page). Loose pieces of 3/4-inch plywood can be arranged in the box to hold the bowl so that the inlay groove is level. This will help control the chips and glue, which seem to have a mind of their own as you maneuver them into the groove.

A bottle of Super T (yellow label) Hot Stuff and a separate bottle of Super T which has been thinned with a small amount of regular (red label) Hot Stuff are needed. After trying several brands of CA glue we believe Hot Stuff works best.

Begin to inlay by running a bead of Super T across the groove. Add turquoise chips on top of the adhesive until they are almost level with the bowl. We use the small plastic cap from a bottle of accelerator to

A scrap-wood box, left, holds the bowl and catches droppings while inlaying the crushed turquoise. Above, another pierced and banded aspen bowl design.

hold the chips and gently tap the side of the cap to release them. Thoroughly cover the turquoise with the mixture of Super T and red label Hot Stuff. It should be thin enough to get down through the chips but thick enough to keep from running all over the bowl. Experiment with the consistency until the adhesive stays on the turquoise. Leave this area upright until the glue begins to set.

You now have a small dam that will hold the chips in place. The inlay can be finished more quickly because there is no need to lay down the glue before the chips are added. Simply apply chips almost to the top of the groove for about an inch, smooth with a toothpick, and cover well with the thinned Hot Stuff. Repeat around the bowl.

Take care that the glue does not run down the groove or onto the face of the bowl. If this happens, wipe it off with a tissue. If the glue seems runny and difficult to control, it may be too thin. Add more Super T. Also, slow down and give the glue more time to set up before proceeding.

After filling the groove, let the inlay rest briefly. Then recoat the chips all around with the thinned Hot Stuff. Spray with NCF Accelerator while rotating the bowl to keep the glue from running onto the wood. Allow the glue to dry overnight before sanding.

Sounds complicated, but you can master it with a little practice. We have experimented with many techniques for inlay, and this one works best for us.

Polishing the turquoise

Remount the bowl on the chuck and, with the lathe off and the indexing pin locked, sand the turquoise using 80-grit paper on a sanding disk. Sand only a small surface before rotating the bowl.

Inevitably some chips will get knocked off and voids will appear. These holes must be filled with chips and glue. Repeat the inlaying process until the surface is smooth.

Release the indexing pin and start the lathe running around 900 rpm. Sand briefly with the 80-grit disk. If 120-, 160-, and 220-grit disks are available, use them to smooth the turquoise. Otherwise, sand by hand with these grits and follow on with 320, 400, 600, 800, 1000, and 1200 grit. Buff the turquoise with a piece of leather and yellowstone pumice to a glass-like finish.

Mark a line $\frac{1}{8}$ inch on each side of the turquoise. Using a skew, cut small grooves at these lines and burn them in with stainless steel wire. Fishing leader with a dowel attached at each end works nicely. These lines visually set off the turquoise. Finish-sanding the outside of the bowl.

Finishing the bowl

The bottom must now be turned for a finished product. A homemade jig of plywood, $\frac{3}{8}$-inch bolts, T-nuts, and a faceplate simplify this step. (See *AW*, June 1994, page 35, for a similar jig.) Using a small gouge, remove the tenon and slightly recess the bottom so the bowl will sit level. There is usually enough material in the tenon to turn a foot if desired. Sand the bottom of the bowl.

We apply a water-based lacquer using an HVLP sprayer. Masking the turquoise with $\frac{1}{4}$-inch striping tape from an auto parts store protects the inlay. Spray on one coat of sanding sealer and two or three coats of semi-gloss, sanding between each coat.

Once the last coat of finish has dried for 24 hours, apply a light coat of clear wax with a white 3M pad. When the wax is dry, buff with a clean, soft cloth.

These techniques are not for those who want to turn a piece quickly and go on to something else. To produce a professionally-finished piece will take considerable time. Exercise some patience and give it a try. The results can be quite rewarding.

Gene and Peggy Kircus operate Colorado Concepts in Larkspur, CO. They will be demonstrating their turquoise inlay techniques at the July 1997 AAW symposium in San Antonio.

MINIMIZING SANDING SCRATCHES

Techniques for power-sanding bowls

KING HEIPLE

SANDING SMALL SPINDLES WITH NO sanding marks is almost impossible. The best you can do is work your way up through the grits carefully, and then at the end cheat by not staining it. A little fingertip sanding lengthwise for the very last step can help.

Nevertheless, for bowls, there are sanding techniques that can produce better results than these, whether the bowls have been turned with the grain perpendicular (that is, faceplate-turned) or parallel (end-grain-turned) to the lathe axis.

When a sanding disk is used to contour, remove tearout, or eliminate tool ridges, you tend to use the disk so that cutting is at 90 degrees to the direction the surface of the bowl is moving. However, on faceplate work this is also the direction that will produce the maximum amount of cross-grain scratching. Sanding with the disk in this position may be necessary to get the most aggressive cut, but following this step you need to then pay careful attention to the direction of the longitudinal grain in the piece being sanded. End grain doesn't care much what direction you sand it.

A 60-degree-angle or 90-degree-angle drill with variable speed is almost a necessity for the control you need to achieve good results, and a reversing switch is very helpful, particularly if you can't reverse your lathe. The 60-degree-angle drill made by Sioux is great, especially with a keyless chuck. Milwaukee seems to market the identical drill under their own name.

The goal is to learn to use the drill and the sanding disks in such a manner that almost all the sanding marks are close to parallel to the grain of the work. You accomplish this by holding the sanding disk so that only a small segment of the disk contacts the work.

Figure 1: Faceplate turning

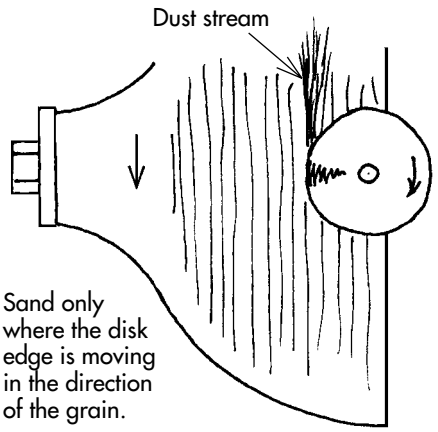


Figure 1 is a typical faceplate-turned bowl with its grain running perpendicular to the lathe bed. Rough-sand or contour in any style you please, but before you leave a grit, do your first finish sanding. The lathe can run at the speed you turned the work or a bit slower. In this case you want the drill rotating clockwise to cut against the rotation of the work, assuming you're sanding on the headstock edge of the disk.

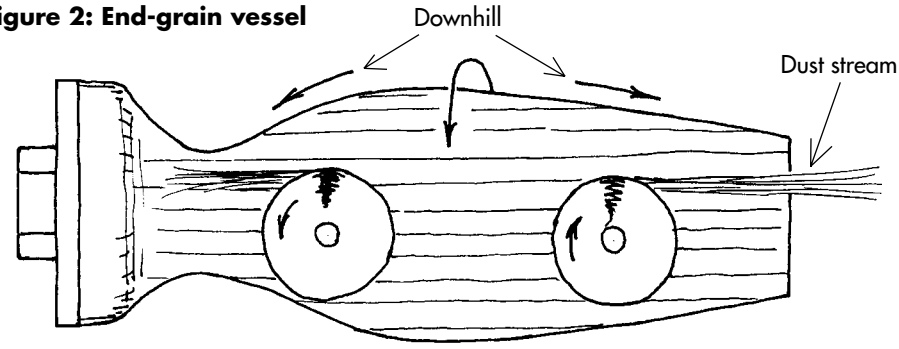
The critical element is to touch the disk down at a slight angle so that only a small segment of it touches the bowl, as little as a 15-degree pie segment. The direction of your dust stream off the edge of the disk will help show you the part of the disk that is touching. Note that I haven't indicated where the drill handle is pointing. It doesn't matter! All that counts is having the contact point of the disk such that sanding is with the grain.

It should be obvious that once your initial heavy sanding is done, hand sanding with suitable pads and grits is even better than power sanding to keep your sanding scratches with the grain on these faceplate-turned bowls. Take your choice, but I must admit that my favorite accessory on any tool is an electric cord!

Figure 2 is a profile of an end grain vessel, the longitudinal grain of the work parallel to the lathe bed. For minimal scratching, the segment of the sanding disk in contact with the work, again, should be parallel to the grain of the workpiece.

Now lathe speed and drill speed both become critical. No matter how you use the sanding disk, if the lathe is turning rapidly, you will get circular scratch marks typical of all spindle sanding. The lathe speed needs to be as slow as you can manage while still keeping the sanding disk steady for one revolution of the work. In practice this seems to be

Figure 2: End-grain vessel



Sand only where the disk edge is moving in the direction of the grain.

around 100 to 150 rpm. The disk speed, on the other hand, needs to be fairly rapid, between 1,000 and 2,000 rpm. The simple goal is to have the portion of the disk in contact with the work move its full distance of contact (perhaps 1/4 to 1/2 inch) while the wood beneath moves only a tiny fraction of that amount.

As when turning this shape with the gouge, sanding will also be better working "downhill" with the grain. This means that on the left half of this shape it is very helpful to be able to reverse the direction of the sanding disk. You could also shift the area of the cut to the bottom of the disk, but it's harder to see and control this way.

It should also be obvious that some tightly curved areas do not allow good use of this technique. As well, the interior of most bowls does not allow this application, unless the bowl is very open and shallow, in which case it works pretty well.

No matter how well you sand the walls and upper portion of any bowl or platter shape, as you turn around the curve towards the foot or interior bottom, about 50 percent of the area will have crossgrain scratching! If your curves are good and the wood handsome, this may be of little consequence to you or the bowl's recipient. If you now and then want to go the distance for a display piece or your own satisfaction, the only real answer is to stop the lathe and judiciously hand-sand these areas with the same level of grit. This may be necessary only for the last one or two of the finest grits you are using. Even if you don't do it on the entire bottom, it is very easy to rub out the center 1- or 1 1/2-inch ringed area on both bottom and interior. It makes a huge difference in its final detail and quality.

King Heiple is a retired orthopedic surgeon and avocational turner in Pepper Pike, OH.

BEFORE YOU BEGIN

Advice on starting out

DICK GERARD

YOU'VE MADE THE JUMP, PURCHASED a lathe, and joined the AAW. Now what? How do you learn to actually turn something? There are really only two options: have someone else teach you or teach yourself. Before you begin to turn, before you actually mount wood on your lathe, let's consider these as opportunities and where they should lead.

If you're fortunate enough to have an experienced turner for a friend, get that friend to give you some lessons (free or otherwise…we'll talk about that in a minute), preferably in your shop, using your tools and your lathe. You'll feel more comfortable, your lessons will be more relevant, and you'll more readily make the transition from study to practice, which means you'll practice more!

What do you do if you don't have an experienced friend? There are several options. First, check the AAW directory and journal for teaching turners (one might live near you) and the nation-wide craft-school workshops. But don't underestimate your local options: look for classes at a local college, vocational-technical school, art school (some do have well equipped woodshops), or wood/tool supplier.

Personal instruction from a professional turner is not cheap but *is* valuable. After all, you're paying for the transfer of knowledge that may have taken half a life time or more to accumulate. And, you're asking that professional turner teacher to take time out from creating new turnings to teach you. If you are fortunate enough to get "free" instruction, practice a bit of diplomacy. If you have received free training from a professional turner, buy something that turner has made. If you have received "free" instruction from a commercial tool/wood supplier, make some purchases! Why? What goes around comes around, and taking the step to buy such stuff will prove as valuable as the lessons, I promise.

What can you expect for your money (whether you're paying directly or indirectly)? Here are the areas I think any competent turning teacher should address during the initial phases of instruction:

- The shop environment, to ensure that it's workable and that lighting is adequate.
- The lathe itself, including the headstock/tailstock alignment and speed-change mechanism (whether belt or variable): adjustments as necessary
- The lathe bed (ways) and tool rest, to ensure things work smoothly.
- A dust/chip-removal system
- Respiratory, eye, ear, and face protection
- Tool choices
- Sharpening/grinding, both setup and skills
- Wood: technology, availability, preparation, and seasoning
- The basics of spindle vs faceplate work, in terms of mounting, product design, and turning techniques

OK, you say, you have checked all the available sources and still can't find a tutor? The next best thing is a combination of watching videos and reading. And by reading, I do not mean looking at pictures of turnings, but rather, studying those technical and sometimes tedious descriptions of lathe set up, tool use, design, sharpening/grinding, finishing, and the myriad other things one needs to know before switching on the lathe.

You see, the difference between teaching yourself and being guided by a mentor or tutor is that the tutor can act as a safety net and has enough experience to get you started much more quickly. Teaching your-

self means you have to absorb all this information, make it yours (make it knowledge), and then try to put it into practice. (By the way, a review of back issues of this journal will reveal many articles about beginning turning. And, conveniently, the March 1997 issue contains a comprehensive index. Obtain back issues from a friend, local chapter, or the AAW Administrative office.)

OK, you've been reading for three or four months, have watched videos until the tape is worn out—now you're ready, right? Well, maybe.

Are you tense and irritable today? Perhaps you're feeling a bit groggy from all that reading and video watching. Safe and fun turning (one and the same thing, really) demands that you be alert yet relaxed. Tension leads to fighting one's self and forcing the tool into the wood. Only bad things happen then: either an accident or a bad turning. If you are relaxed and alert, are you ready to start? (Finally, we get to turn, right?)

Not quite yet. First, a demonstration of the proper stance. You'll need a friend, spouse, or your tutor for this. Stand erect in front of your helper, feet together, holding a lathe tool in front of your body, both arms bent at the elbows and held about 4 to 6 inches in front of your body. Now, ask your helper to apply force against the handle of the lathe tool as if trying to move you backwards. Ask your helper to be conscious of the effort required to make you move. Now, tuck your arms close into your body and repeat the exercise, having your helper again note the amount of effort required to make you move and compare it with that necessary to make you move from your first stance.

Step two: Keeping your arms tucked in tight, spread your feet about shoulder width apart, place one foot slightly ahead of the other, and lean forward slightly at your hips. Ask your helper again to apply force and compare that force to the prior effort.

What you should be realizing is that as your stance changes, the force required to get you to step backwards increases. Your helper is the force generated by the lathe as the wood spins. By getting into a compact and balanced stance, you gain control of that force and are more readily able to put it to use.

One or two last things about stance/posture: Do not lock up your knees, hips, arms, fingers. Keep everything loose. Do not grip the tool so hard that your knuckles go white. An exercise I have many students do is to imagine a hot dog taped to the tool handle. You want to grip just tight enough to hold the handle plus hot dog but not so tight as to squash the hot dog! For one class, the students actually did this, and by lunch time, no one was "white knuckling" the hot dog!

Another thing to do is to get in your stance as before while actually in front of the lathe (lathe off!), with a piece of wood on the lathe (spindle or bowl stock, the principle is the same) and place the tool on the tool rest. Now, ask yourself, can I maintain this posture for an extended period of time? What effect will it have on my lower back? Upper back? Knees? Hips?

The centerline of most lathes is several inches too low and needs to be raised. Standing at the lathe, even for prolonged periods, should be no more taxing than standing in line for your favorite movie or for getting tickets to a ball game! Movement along the lathe is accomplished by shuffling the feet and swinging the hips and torso. Hand and arm movements are used for tool control—a decidedly different state of affairs.

Finally, before you begin to make shavings, check the condition of your tool rest. If it has nicks and grooves in it, file the rest smooth or hold it against your belt sander to get a nice uniformly smooth surface. A coat or paste wax wouldn't hurt, either.

Next we'll talk about wood: finding it, preparing it, mounting it, then turning it. But that's next time…or see me in San Antonio!

Dick Gerard, of Indianapolis, IN, is a full-time professional studio turner and turning teacher. He will be demonstrating at the July 1997 AAW Symposium in San Antonio. Check out his web site at http//:www.indy.net/~woodturn.

Recommended Books and Videos

Creative Woodturning and *Artistic Woodturning* by Dale Nish—Excellent complementary books with lots of step-by-step photographs.

Turning Wood with Richard Raffan—Book and video by the same name to be studied together. These cover both spindle and faceplate work, including good exercises for sharpening and tool control. Also valuable: the video *Turning Projects with Richard Raffan.*

Bowl Turning with Del Stubbs—Probably the first turning video ever produced. Excellent! Should be in every turner's library. Covers tool selection, tool sharpening, lathe modifications. Some of the things shown are very advanced, but there's also lots of material for beginners, for all levels, really.

Bowl Turning with John Jordan—One of the best videos on this subject. Uses some unique instructional aids and covers just why certain things are done and not done.

Woodturning: A Designer's Notebook by Ray Key—Excellent on techniques and design leading to intermediate turning. —*D.G.*

LARGE CHATTER WORK

Go with it!

REMI VERCHOT

I HAVE ALWAYS HATED SANDING, dreaming naively of the perfect cut. I now know that this is almost impossible for a vase or a bowl. That's the first charm chatterwork had for me: to obtain a nice finished look without the boring and dusty process of sanding. But apart from this mundane attraction (which proves my lazy character) chatterwork, once controlled, can result in a very appealing spiraling texture, regular or irregular. The chatter can be large and deep in a concave or a convex area, sometimes looking like a carved surface.

Technically, every turner who makes bowls knows well the problem of vibration. When I encounter it, I remember what Terry Martin taught me to avoid vibration: "push down on the tool rest, don't push on the wood!" Eccentricities of the workpiece aside, when the bevel of the tool is resting on the wood, it is liable to be repulsed or drawn in by the variations in wood density alone. The more you push the bevel on the wood, the more this will happen. Pushing the tool down on the tool rest, stabilizes it.

What I do to obtain large chatterwork is exactly the opposite: I push on the wood, not on the tool rest, and the tool gets very responsive to the vibration. I hold the handle against my body and control the vibration of the tool with my hand. The most difficult thing is to begin the vibration; once you have it, you just have to keep pushing on the wood, to control your cut, following the shape you're cutting.

As you work, you can see two shapes: a shadowy one, composed of all the highest point of the chatter, and a more visible one, which is all the lowest points. Generally, I try to keep those two shapes parallel, in order not to disturb the line of the piece. The tool is vibrating fast so that you also see two gouges. (If you see four gouges, you may have to reduce your consumption of wine. If you see a herd of yellow elephant, I would suggest you go to bed.)

"Ice Cream Cone," above, is of maple, burnt and painted, 16" high. Below, burnt for emphasis, the combination of small, regular coves and large, spiral chatterwork creates a striking texture.

I use all sizes of deep-fluted and shallow gouges. For very large chatter I mostly use a ¾-inch deep-fluted gouge and a ½-inch shallow gouge. On one of my gouges I ground a bevel with a bump and sometime this works better. (I have not tried many ways of sharpening, for I have always been satisfied with the quick results I get.) It is probably easier to get vibration with a dull tool, but the cut won't be clean.

The ¼-inch shallow gouge always works when the tool rest is far from the cut because flex in the tool shaft begins the vibration. But this is a fragile tool, so make sure you are comfortable with it before doing this kind of work. It does not make sense to position the tool rest far from the work and look for this kind of vibration in a more massive gouge; here, the whole gouge must vibrate in and out of the work. Besides which tool you use, lathe speed, the speed you move the tool, differences in wood grain, and variations in density give many possibilities. You have to try it!

I usually turn at a normal speed. I have tried with very slow speed, but as a rule it has not been successful. Especially on very large chatter, I sometime encounter the problem of torn grain. When this happens, I burn the piece to eliminate it. I also like to paint afterwards to help transform the problem. As well, paint can add a lot to the texture. Another technique I use to highlight chatterwork is repetitive small coves. The combination of the large chatterwork and the striation of coves creates an interesting effect, intersecting only at the raised areas (photo left).

Remi Verchot is a seventeen-year-old turner from Digne, France, who will be demonstrating at this July's AAW symposium in San Antonio.

Photos: Nick Cook

PHOTOS FROM THE MAILBAG

My dragonflies and butterflies perch in the garden atop 30" patinaed brass rods. The bodies are turned of either Dymondwood or catalpa that I hand-dye myself. I make the wings from irridized glass molding it in a kiln to give them a slight arc. When sharp sunlight shines on these surfaces, the result is a highly refractive interplay of colored light rebounding off several contours at once. I've found that the dragonflies seem to repel mosquitos and the butterflies seem to attract other butterflies. What more could one ask? *—Peter Green Westport, CT*

Clockwise, beginning above left:

"Sutra Container," walnut, 15" high, inspired by a piece pictured in *The Traditional Crafts of Japan.* *—Kurt Potter, Mannford, OK*

"Urn," walnut, 15½" high. *—Don Olsen, Vale, NC*

I donated this carved mesquite vessel to the Texas A&M University so that it could be displayed by the Texas Forest Service to highlight the value of mesquite, commonly regarded as a weed. *—S. Gary Roberts, Austin, TX*

"Goblet," cherry, maple, ebony, and sapele, 13" high.
—Willis Hunt, Lexington, MA

"Vessel #97-1" is of birch, walnut, holly, canarywood, maple, oak, and wenge, 6½" high. *—Joseph Rozer, Aguanga, CA*

THREE MORE SUCCESS STORIES

EDITOR'S NOTE: *Each year the AAW provides a number of Educational Opportunity Grants to members, local chapters, and youth to foster personal education as well as research and other projects. Recipients are asked to provide a report summarizing the experience and/or the project that the grant enabled. Following are several such reports. Many thanks to all those who have donated to the Educational Opportunities Fund, principally through the annual symposium auction. Look for this year's grant application in the September and December issues.*

Ray Key in Provo, Utah

I started turning two years ago after my wife bought me a lathe for Christmas. Since seventh-grade shop class, I have always wanted to turn, but I was never able to fit it into my busy schedule. With my wife's gift, I fell in love with woodturning. I bought a second lathe at a garage sale and built a third lathe during the summer of 1995 to handle large-diameter bowls and platters. After learning as much as a I could on my own, I took private lessons, read everything I could get my hands on, and dreamed about taking a class from one of the masters.

I guess my turning was appreciated by a few individuals who encouraged me to put some pieces in galleries and shows. I did and some sold. I was hooked! Now all I wanted was to make better pieces and get my name out in the woodturning world. I also developed a great desire to give demonstrations and teach other people about this marvelous craft.

That's when I applied for an AAW Educational Opportunity Grant and was accepted. I immediately enrolled in a five-day class at Craft Supplies in Provo, UT, with Ray Key. The experience was sensational.

Ray was just as I pictured: a real genuine individual with a knack for being serious or amusing at the right times. His enthusiasm for woodturning is conveyed in his skill and the beautiful turnings he creates. I enjoyed every anecdote, every idea, and every criticism Ray offered regarding our attempts in his class. He was extremely helpful to me on issues of form and marketing.

Ray's many years in woodturning represent an invaluable resource to anyone wanting to learn His ability and willingness to share what he knows is outstanding. I would recommend his class to any body who wishes to develop skills but also get a feel for the delicate touch that comes from advanced turning knowledge

—Joe Wujcik, Lancaster, CA

Woodturning in Indianapolis

Last year I received a $500 grant from AAW to participate in an artist-in-residence program at the Indianapolis Art Center. The Art Center recently moved into a large new facility that now houses a wood studio. Because woodturning was not known to the Art Center, I wanted to introduce it to that community and see how far it could be made to reach. I viewed this grant as seed money to start woodturning program where none had existed.

The Art Center and I structured the residency program so that visitors could watch woodturning in action, ask questions, and become familiar with the wood studio over the course of one semester. I worked Thursday afternoons from September through mid-December on the Center's new Woodfast Cobra lathe, which I helped them obtain from Craft Supplies USA last summer.

During the course of the semester, about thirty people stopped in to watch me work and to ask questions. Two "regulars" from our local AAW chapter attended almost every session, and one newcomer to woodturning was able to play hooky from work to show up twice. These three, Ed, Ned, and Tanya, typify AAW members and demonstrate the success of this program.

Ed is a retired concert violinist—no one would ever guess! He is reputed to have shoved his violin into a geranium pot years ago, replacing it with a set of turning tools. Today, Ed's life revolves around woodturning. A number of times he shared with us nicely crafted bowls, as well as a case with twenty-four turned pens—a commission for a local businessman. I don't know anyone more enthusiastic about woodturning.

Ned saw an article about my work in a local newspaper years ago and had wanted to call me to talk about the new-found interest in his life: woodturning. He never did, and could hardly believe his good fortune when he heard about this residency program. Ned was always eager to try the new techniques I demonstrated, such as bleaching and texturing. One of the plates he made and decorated as a result of my demonstrations became the fiftieth wedding anniversary present for friends of his.

Tanya started woodturning only a few months ago when she took a pen-making class. She works full-time in an office and has already decided to become a professional woodturner. The first Thursday that she came to the Art Center, I structured my demonstration around getting her started on faceplate turning. She stayed up that night until 2am, turning and finishing her first bowl. She's hooked. (I tried to see if she would part with that bowl by offering to buy it—she wouldn't sell.)

In addition to walk-ins, one of the great successes of this program was the access that it gave me to the administration and other instructors at the Art Center. I took advantage of

this opportunity to argue for including woodturning in the Center's regular course offerings and to discuss with them what constitutes excellence in turning. As a result, next semester the Art Center is offering a woodturning class, which I will teach. In January they purchased four new lathes, for a total of five Woodfast Cobras available for classes throughout the year.

This Educational Opportunity Grant has done much to promote woodturning education in Indianapolis. Through AAW's generosity, woodturning now has a good start toward becoming a highly visible, exciting part of the Indianapolis Art Center community.

—Betty Scarpino, Indianapolis, IN

Turn around and grow

High school woodworking programs across America have been closed, machinery has been auctioned off, and rooms have been renovated for new programs. Fortunately, this is not the situation at Pinkerton Academy in Derry, NH, where I am a junior. As a freshman, I enrolled in Woods 1, where my teacher, Jack Grube, introduced me to woodturning. My passion for turning has intensified over the past two years.

Before Mr. Grube was hired to teach woodworking, the program at Pinkerton had two lathes and dwindling student enrollment. Thanks to Mr. Grube's commitment to woodturning and many curriculum changes, we have turned this program around. This year approximately 400 students will sign up for woodworking classes.

Part of our success must be shared with the AAW. Last year Pinkerton Academy was awarded an AAW grant to buy a Delta 46-700 lathe and two tools. This year I had the idea to apply for a student outreach grant. This grant has allowed us to buy two VICMARK VL100 lathes.

These VICMARK lathes will serve several purposes. They will be used by upper-classmen in interdisciplinary units. For example, we are planning to demonstrate architectural turning to the students in our Drafting and Design program. We also have plans coordinated with our Forestry Program and Physics Department. These lathes will be used to demonstrate at this year's art show. Next year my senior essay will be related to woodturning.

Later this year we plan a Woodturning Day on campus. The lathes will be set up at various locations so that we may share our enthusiasm and talents with the 2,800 other students at Pinkerton.

These lathes will also be used when students are asked to demonstrate off-campus at craft shows, jewelry shows, woodworking stores, and community events.

Most importantly, the upper-class student assistants who do not have lathes, will be permitted to borrow these lathes over vacations and on weekends so that they can turn at home. This year the lab assistants began demonstrating and supervising woodturning for the Woods 1 classes.

On behalf of the Pinkerton Academy, Mr. Jack Grube, and the students who are enrolled and who will enroll in our program, I would like to thank the AAW for its financial support and the AAW members who have demonstrated at our school. *—Marc Celona, Derry, NH*

DRIVE CENTERS: THE NEXT GENERATION

Trident, *Turnstyler, 135 Strathfield Walk, Merry Hill, Wolverhampton, West Midlands WV4 4YJ. 011 44 1902 763962. No. 1 or No. 2 Morse tapers, £35 or US approximately $50.* **Stebcentre,** *Craft Supplies, 800/551-8876. 1/2" $39.95; 1" $42.95.* **Big Tree Spur Center,** *Big Tree Tools, 888/887-6464. Complete system, $195.*

THERE WILL PROBABLY ALWAYS BE A place for the familiar four-prong drive center, but there is a new generation of drive centers on the market that offer attractive features. I suspect that each of these centers will fill a different niche in the turning market, both functionally and economically. I talked with the three makers of these new products: Fred Woods about his Trident, Gerry Stebbings about his Stebcentre, and Jon Siegel about his Big Tree Spur Center, and learned about some of the idea that went into their design.

The one element common to all of these drive centers is that they all have a spring-loaded center point, the main advantage of which is that work can be readily mounted, unmounted, and remounted while the lathe is rotating. The spring-loaded centers also allows for very accurate re-centering of workpieces. My impression from talking with these men is that they had spindle turning in mind when they designed these centers, but I believe that both the Trident and the Big Tree Spur Center have applications for bowl turning.

What follows is not so much an evaluation of the drive centers, but an introduction to them and the men that designed them.

Trident

Fred Woods has been making lathes as a family business for the last twenty years, though he started "Turnstyler" to develop and market lathe accessories only six years ago. Wood, a professional turner for more than thirty years, feels that many turners who have mastered grinding their tools, still have trouble keeping their drive centers in good shape. He attributes this to a lack of good design in drive centers. He designed the Trident to feature high efficiency, long life, ease of use, and easy maintenance.

The spurs in the Trident can be rotated 360 degrees. This allows the user to determine the "bite" of the center. Rotating the spurs 90 degrees from their normal position permits slipping, while rotating the spurs a full 180 degrees allows the piece to be driven in reverse, should the need arise. Woods chose three prongs, first, to avoid the tendency of a two-prong to split and, second, to reduce the pressure necessary for a four-prong to bite.

The spurs sit on hardened steel balls so that no wear takes place to the body of the drive center from axial loads. The spring-loaded center slides in a self-oiling bronze bushing. Woods anticipates little need for sharpening the hardened steel spurs, but when necessary they can be sharpened on the lathe using an electric drill fitted with a small grindstone. As grinding shortens the spurs, they can be extended by inserting an additional 6mm ball behind them.

The Trident I used came as a No. 2 Morse taper. The overall diameter of the body of the center is a bit over 1 1/2 inches. It performed well turning both spindles and bowl stock. I found that a piece removed from the lathe and replaced or reversed for sanding ran true.

I doubt whether Woods intended it for this use, but I extended one or two of the spurs to fit the contour of a piece of natural-edged burl and found that it worked well this way, although inserting an extra bearing to extend a dog might be a better idea. In the natural-edged burl, I had no problems with the center "drilling" into the work.

The Trident is not marketed in the U.S., but Woods will fulfill orders from England.

Stebcentre

Gerry Stebbings did not start with a desire to be a woodturner. About four years ago, he "rescued" an old metal lathe, intending to convert it to a woodturning lathe and then offload it on a woodturner. "What! hold a chisel in my hand and approach a piece of timber spinning at about 2,000 revs?" he explained to me. "No thank you very much! I'm not daft!"

When the lathe was complete, he decided to test it out and perhaps improve on it. His first thoughts upon actually putting a tool to wood are unprintable. He persevered to no avail. "The spinning blur of wood was trying to tell me to get back to my metal-working lathe," he said. His next approach was to attempt to slow the wood down, which he deemed not very practical because of the need for a variable-speed motor or some other way of slowing down the lathe.

At this point fate intervened. As Stebbings describes it, he began to "butcher" the wood rather than have dreaded dig-ins; the piece would slip in the drive center, eventually slowing to a stop. When he removed the tool, the workpiece began rotating again.

Over a cup of coffee, Stebbings wondered if he could get a rotating piece of wood to stop every time he was going to have a dig in. He had previously decided that it was necessary to have an adjustable center pin for hard and soft woods, but it dawned on him that an independent center pin was an improvement over that. The ring of serrated teeth followed, which provides more gripping area than the standard four-

DRIVE CENTERS: THE NEXT GENERATION

prong center, but slips more "gently" and, in my experience, does not dig into the workpiece as much. Thus was born the Stebcentre (named by a friend who said that Stebbings had to call it something!).

The Stebcentre is available in a standard version ($^7/_8$-inch diameter, listed as a 1-inch Stebcentre in the Craft Supplies catalogue) and a small ($^1/_2$-inch diameter), both in No. 1 and No. 2 Morse tapers. The amount of grip is determined by the pressure exerted from the tailstock. Stebbings points out that the center is "user-friendly" for beginners because a light tailstock pressure will allow the work to slip when a catch occurs. To examine a workpiece, simply back off the handwheel, the spring center pushes the work away from the serrated teeth, and the piece stops. I generally don't worry about reverse sanding for my own work, but when I reversed spindles for sanding with the Stebcentre, I found that they ran very true.

The feature I liked best about the Stebcentre is it's ability to keep a turning blank properly centered. With a four-spur drive center, the end grain sometimes tends to "push" the blank off to the side. With the Stebcentre, the center point retracts until the serrated teeth engage, keeping the blank properly centered.

Big Tree Spur Center

Big Tree Tools was started by Jon Siegel of Franklin, NH, about two years ago with the help of his wife, Patrice. Siegel began turning wood when he was 14 (almost forty years ago) and along the way gained experience in both metal- and woodworking. Siegel has developed a number of other lathe accessories, but here we focus on his spur center.

Development of the Big Tree Spur Center began about three years ago and has involved many prototypes. Siegel's intent was to solve the problems he was having with the old spur centers. Most notable was the whip that occurred by tightening the tailstock too much, especially when turning long, slender spindles. Siegel attributes this problem to the "new" ball-bearing lathes that allowed the user to apply too much pressure to the workpiece via the tailstock. An additional problem with the old spur centers is the tendency to slip or spin and occasionally "drill" itself into the workpiece.

Unique to the Big Tree is the inclusion of both a spring center *and* an adjustable center. The main advantage of spring loading is that it allows accurate re-centering of a piece once it's removed from the lathe. It also allows you to remove one piece of work from the lathe and replace it with another without stopping the lathe. The adjustable centerpoint ($^3/_8$-inch range of motion) allows you to alter the distance between the tip of the centerpoint and the spurs. I found this feature very useful for helping to center natural-edged bowls when roughing out.

The complete system comes with four standard spurs, an adjustable center point, a spring loaded-center point, and three hex wrenches. The four spurs are removable, adjustable, or replaceable, and they can be configured for either a four-spur or two-spur drive center. Spurs of differing hardness and length are also available. This drive center is available as a No. 2 Morse taper; its overall diameter to the outside of the spurs is $^{15}/_{16}$ inch.

Siegel designed this center with spindle turning in mind, but the first thing I did with it was rough out a piece of natural-edged burl about 20 inches in diameter. I was impressed that the center did not spin into the workpiece even once. I also liked the idea that you could adjust the spurs individually to ensure that they all engaged the uneven surface of the burl. I believe that the center is as valuable to bowl turners as it is to spindle turners. —*Robert Rosand*

Bob Rosand is a frequent contributor to this journal who turns professionally in Bloomsburg, PA.

Bill Jones' Notes from the Turning Shop by Bill Jones. *Guild of Master Craftsman, 1996. Distributed by Craft Supplies, USA, 800/551-8876. Paperback 152 pp., $19.95.*

What first struck me as Bill Jones' book emerged from its padded envelope was that I would never again have to apologize for my shop not having that *Better Homes and Gardens* look. Surrounded by productive clutter and holding a beautifully turned chess piece, his genial expression gave me hope that this would be a good read. I was not disappointed.

A fifth-generation hardwood and ivory turner with sixty years of experience, Jones has regularly contributed his "Notes" to England's *Woodturning* magazine. This book is a collection of his first twenty articles, with an introduction, a health and safety section, a few paragraphs about the author, and the obligatory metric conversion table.

Having mentioned dimensions I should make clear that this is not a project or a "this is how you should turn" book. It is a visit to the mind and turning shop of a master who is greatly contented with being a turner and enthusiastic about sharing his thoughts, discoveries, tricks, tools, techniques, and examples of work, with which he is justly pleased.

Each chapter is a separate article, but reading in order may help those of us living in the States become accustomed to "real" English.

Chapters are a varying mix of personal stories, turning history, commentary, philosophy, and how-to. They reminded me of wonderful trips to my grandfather's shop. Even if the reason was a particular task, there was always a story. Old tools were examined, explained, demonstrated, and sometimes shared. Philosophy and opinion might be subtle or direct. Work and tools aside, the reflections and stories were always worth the visit.

Back to Bill Jones. After introducing himself so that you are comfortable by the end of his first page, he explains the mechanism he uses to make a variable-speed lathe. Following chapters discuss the virtue of practice ("...so-called gifts accrue to those who work hard"), making repetitive projects, descriptions of favorite tools, chasing screw threads (expect to practice a great deal), and the turning of bone and ivory.

One chapter uses a chess piece to start discussing his chucking preferences, making jaw chucks safer, specific tools, and his personal discovery of ornamental turning. Following chapters continue ornamental turning by introducing the basics, special parts, tools, equipment, and projects from his position as a hand turner. There is material of interest even for

those not intending to do ornamental turning.

Design, inspiration, adapting ideas, and taste are mixed with project examples and details of construction. The chapter on turning bone also tells how to "strike" and cross-file a saw, chase threads close to chuck jaws, and stain ivory. His piece about living with new (different) tools includes his version of "Blessed is he who expecteth nothing for he shall not be disappointed." Bill says, "Blessed are those who expecteth something wonderful, for no subsequent disappointment can take away the times of joyful anticipation. And bad cess to all cynics, say I."

This same section discusses an iron cup chuck, making rattles from old billiard balls, drilling long holes, and Holtzapffel D-bits. There are also observations that will interest those pondering "art versus craft."

Several references to making and restoring chess pieces cover design, materials, turning the many parts, detailing, carving, and finishing.

Throughout, he continues with yarns, philosophy, encouragement, and bits and pieces of suggested technique, tools to make, and information useful to any turner who makes tools, jigs, holders, and other apparatus to solve the problems arising from a wide range of work. Even when he gives the procedures in order, it reads like a story.

Jones adds even more of himself to these pages by writing poems with a turner's twist. If I had learned nothing in the way of new practices for my turning and teaching, his "notes" are worth the price. The fact that I did is a bonus. I look forward to the next installment from this down-to-earth, poetry-writing, master turner of hardwood and ivory.

Richard Montague has turned for craftsmen in wood and other media, taught for more than thirty-five years, and is currently a woodturner, consultant, and teacher of turning in Groton, VT.

DOING A DEMO

EDITOR'S NOTE: *The following ideas were presented in a panel discussion by Clay Foster, Bonnie Klein, John Jordan, and audience participants at the 1996 AAW Symposium in Greensboro, NC. Thanks to Alan Lacer for providing his notes of the session.*

Planning and preparation

A good demo begins with adequate preparation. First consider the setting of the demo and the expectations of the group. Will it be at a craft fair, turning club, symposium—and how will those differences impact what you do as a demonstrator? For example, participants at a craft show don't care to hear about bevel angles.

The audience may dictate what you are doing. They may not know who you are, your success, or reputation. Are they there to be entertained, to intensely learn, for hands-on? The size of the group may also affect your strategies; e.g. hands-on may not work well with a large group.

It is a always wise to confirm in a letter the mutual understanding of dates, times, location, transportation, fees, equipment and wood requirements, etc.

Select a topic that you know well and are comfortable demonstrating. Don't try to teach all of woodturning in $1\frac{1}{2}$ hours—narrow the focus to something you can reasonably accomplish in the time frame. Consider scaling down from the size you normally would work at. Having to remove less wood helps to move the process along.

Know the equipment you will be using. Have everything lined out in advance, tools sharpened, perhaps back-up tools, faceplates, chucks, screws, etc. Bring your own wood if you are not comfortable relying on others. If you're bringing your own faceplates, chucks, centers, will they fit the lathe you will be using? (Note: during the demo never criticize the equipment or wood—you are always partly or wholly to blame for such problems.

If audio-visual equipment is to be used, allow plenty of time for checking it out and making sure it will be an asset to the presentation.

Have pieces already blocked-up, roughed-out, or even partially completed—unless those processes are central to your presentation. Don't spend half your demonstration just getting a piece to the stage that was

DOING A DEMO

the real point of interest. Consider having a number of pieces completed to different stages to illustrate progression.

Set up the demo for success. Prepare even for mistakes or minor failures so that they do not become major problems. For example, if a slide presentation is part of your demo, is there a back-up bulb? Anticipate possible mishaps at the lathe as well, so that you can turn them into instructional opportunities.

It can be very helpful to create props in advance, making it easier for everyone to see or to reinforce a point. These can be cut-away pieces, wood models of tools, finished examples, partially completed pieces, etc. Handouts are good to supplement what you are discussing or to serve as reference material after your presentation.

There is no substitute for being prepared. If you were to stand before a group of people to tell them about yourself, it shouldn't be too anxious a time because it's a subject you know well. You should be as familiar with your demo topic as you are with yourself. If you know your topic well, you will be able to present it more confidently and accurately, able to answer questions with assurance.

Being prepared and familiar with your topic will also allow you to be more flexible in your presentation. It is a good approach to have a general lesson plan, but too detailed of a plan can throw you off if someone asks a question out of the order you anticipate. If you know your subject, questions and comments from the audience will usually guide you naturally from one section of your general lesson plan to the next.

As you prepare a general lesson plan, try to anticipate potential problems each step of the way and how you can deal with them. Ask yourself "What are the mistakes that can happen right here, and what would be the best way to deal with them during a demo?" You probably know from first-hand experience in your shop all of the mistakes that can be made. Even if they don't happen during your demo, it can be very helpful to the audience to point them out anyway.

Conducting

Before beginning, make sure you have the attention of your audience.

Begin your presentation with a brief description of what you will be demonstrating. If the audience knows the general lesson plan, they will be able to know when it is appropriate to ask specific questions they might have. If someone asks a question that is way out of order in your general lesson plan, it's ok to tell them you will be able to give a better answer to their question later in you presentation. Don't forget they asked the question when you get there!

When someone does ask a question, be sure you repeat the question for everyone to hear. Don't make your audience play the game show Jeopardy, where all they get is the answer and they have to make up their own question. If a person in the front row asks something and you reply "That's a very good question and the answer is 220," the rest of the audience doesn't know if you are talking about rpms, volts, sandpaper, or what time you left the bar this morning.

Remember: you are an example especially on safety concerns. In a demo you may well take extra safety measures in addition to the safe habits you've adopted working alone in your shop.

Set yourself and audience at ease. A good way to do the former is to pick a safe-setting—with friends or your own club. Pretend that it is just you and one other person in your shop. Again, pick a topic you know and are comfortable demonstrating and don't take the same risks you would in your own shop.

The best instructors are in constant contact with the group. Keep talking with the group, especially in those tedious or flat spots in the demo. Encourage questions from the group—but don't forget to repeat the question prior to responding. Sometimes it's more effective to shoot questions to the group—to keep the dialogue going.

If there is a video camera with monitors, make good use of the technology. Position yourself or hold tools to provide maximum benefit. Check the monitor periodically. Know what your audience is seeing and experiencing.

You are responsible for the pace and direction of your demo. Exercise control, especially if participants take things astray from the focus.

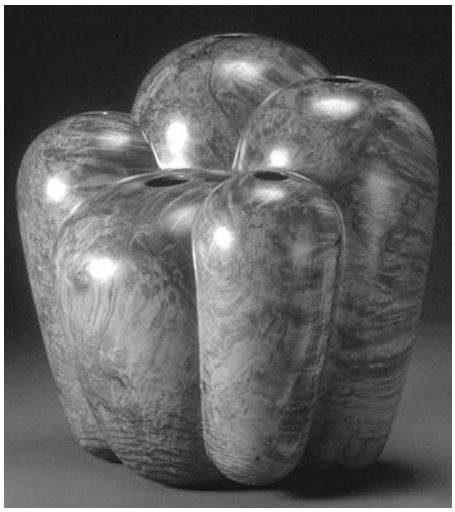
What if a participant disagrees with you? Avoid arguing and move to areas that you both agree on.

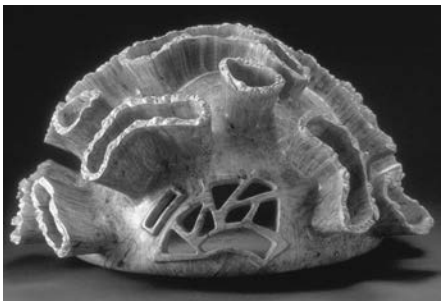
Pass items around as much as possible, especially helpful if doing a piece in stages and you have partially completed examples.

What if something goes wrong? If you reach your objective or get the point across, then making a mistake on the piece may not really be a failure. Use problems as something to be solved with the group.

Don't labor too long on something if the audience seems to comprehend it readily, even if you had prepared a wonderful detailed explanation of it. Be thankful that you have an intelligent audience and move on.

Have fun. If you don't have fun and enjoy yourself, nobody else will either. Woodturners are easily entertained (who else would sit and watch wood spin), and are generally a sympathetic and friendly audience. They are quite willing to have a good time if you are.





Clockwise from above:
"Shard," madrone burl, pipestone, 12" high; "Tripot with Halo, "maple burl, 12" high; "Pentapot #2," madrone burl, 16" high; "Yes: Tripot #4," fiddleback maple, soapstone, 24" high Irv Lipton Collection; "T-pot #14,"Maple burl, soapstone, 12" high, Dr. Peter Lederer Collection; "Tripot #5," maple burl, 9" high;. Mikandra, maple burl, 15" high, Irv Lipton Collection.

Whatever a Potter Can Throw…

Though I may use designs suggested by nature, I am not concerned with expressing "naturalness." Rather I view each new work as an opportunity to experiment with the chaotic character I see in much of nature. I believe this "chaos" is a higher order of reality which I am attempting to better understand through my work. I'm not satisfied to make simple, polished turned forms. I push technique (see my article on pages 20–23, for instance) in order to have the greatest expression of shape and adornment possible. Whatever a potter can throw, I strive to turn better.

—Hugh McKay, Gold Beach, OR