American Woodturner

The Journal of the American Association of Woodturners June 1995 $5.00 Vol. 10, No. 2

LAMINATED AND SEGMENTED TURNING

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

To Educate, Inform, and Organize

To provide education, information and organization to those interested in woodturning is the mission of AAW. And who is the AAW? You are. You and the other 5,000 plus members of our organization are the heart of the AAW. Contrary to how it sometimes seems, it is not the officers, the board, the administrator, or even the journal you are now reading. Whether you are just getting a lathe and desire to learn or you produce thousands of turned objects a year, each of us is integral. As Merryll Saylan said in this column last March, we are indeed a diverse group and each of us joins for a variety of reasons. We must remember that with membership comes not only opportunity but responsibility. We must all take pride in the art of woodturning and share our enthusiasm with others.

As chair of the Publications and Promotions Committee, it is my responsibility (as well as my pleasure) to offer ideas for sharing our enthusiasm with others. The committee has come up with a list of promotions that you or your chapter can work with to promote woodturning among the public and to inspire your peers. Many of these ideas have been successfully used by various groups around the country. You may wish to select one and give it a try or divide the list and have committees work on the ones that suit you or your chapter.

- **Adopt A Library Program:** Introduced in the journal several years ago, this program has had limited response. Individuals as well as chapters may sponsor journal gift subscriptions to art centers, museums, schools, and public libraries. The subscription costs only $15 and it places the journal where the public can see it. Why not include a subscription to your local newsletter so your community can see what you're up to.
- **Tree Trust Program:** Pioneered by former director Gary Roberts, of Texas, this program has been responsible for planting more than 70,000 trees throughout the country. We need more feedback for the journal and more local publicity with press releases and photos to local newspapers and national magazines. Planning around other activities such as Arbor Day or Earth Day, or working with youth groups could make this program more attractive to the media.
- **State and County Fairs:** The Tampa group has a major exhibition within the Florida State Fair each year. The group brings in a nationally known turner to judge and critique the show and give out awards. They also have a special booth equipped with a lathe for demonstrations, and members take turns showing their stuff throughout the event. This is an excellent opportunity for the public to see woodturners in action. You can hand out copies of your newsletter and applications for both your own chapter and the AAW.
- **Artists at School Program:** Many local school boards have funds for demonstrators in various media for their art and industrial art classes. Even if they can't pay, it's a good opportunity to show young people what woodturning is all about. Contact the art department at your local school.
- **Woodworking Shows:** The Devine Marketing Group of Los Angeles puts on about forty woodworking shows throughout the country each year. They are always looking for workshop speakers for their free workshop programs. They also provide free space for non-profit groups, such as AAW chapters, to display members' work and promote the organization. You can not sell in free booths, but you can hand out membership applications. Many chapters use the space for an annual show, including demonstrations. You start with an audience already interested in woodworking; all you need do is convert them to turning.
- **Holiday Charities:** Many major cities put on some sort of holiday fund-raiser for local children's hospitals or other charities. Here in Atlanta, it is the Festival of Trees. Groups provide and decorate Christmas trees according to the theme of the event. These are displayed throughout the festival then sold or auctioned at the end, just in time for Christmas. The local carvers club has been donating trees covered with hand-carved ornaments that sell for more than $500. The Georgia Woodturners are planning on a tree this year with turned ornaments. You will need to start early so there is no shortage of ornaments when tree-trimming time comes. Some festivals even provide an area for individuals to sell their ornaments with a percentage going to the activity.
- **Open House:** Having an open house, a show-and-tell, or a separate show of members' work is an excellent way to show off your turnings. You must promote it properly with press releases and invitations to the media, gallery owners, collectors, curators, art teachers, and anyone else who should be there.
- **Press Releases:** Send out press releases whenever your chapter or an individual member does anything noteworthy. Let the public know when visiting turners will be demonstrating for your group or when local members are demonstrating for schools or doing shows out of town. Award presentations to members are also important. You will need to develop a list of local newspapers along with a contact person at each.
- **Articles for our Journal:** You need to write articles about what your chapter is doing and send them to the journal. Rick Mastelli will work with you if you're not comfortable writing your first article. Share with the other chapters, let everyone know what is working for your group, and watch the interest in woodturning grow.

Bottom line: We must work at promoting woodturning, both as groups and as individuals. It fortifies our craft. We all look forward to hearing about your successes.

—Nick Cook, Chair,
Publications and Promotions Committee

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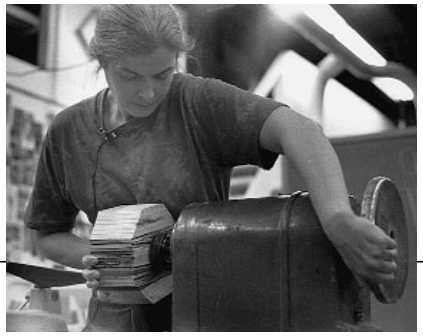
A Note about your Safety
An accident at the lathe can happen with blinding suddenness; respiratory problems can build over years. Take appropriate precautions when you turn. Safety guidelines are published in the AWW Resource Directory. Following them will help ensure that you can continue to enjoy woodturning.



On the cover:

"Shadow Play #1" Finnish birch, maple, aniline dye, 10" h × 9" dia., by Virginia Dotson. At left, Dotson mounts a laminated block during a workshop she gave last March at Yavapai College in Prescott, AZ. For more on Dotson's work and that of others who turn glued-up material, see the articles beginning on page 8. Cover photo: Virginia Dotson; photo left: Crystal Erickson.

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Too much tool

I have been thinking about the relationship of the tools I use and the lathe I use them on. I have gone from the set of tools that came with the lathe (a Shopsmith) to tools I have purchased from many sources, as well as tools I make myself. With my first purchase from a woodturning catalog, I was added to every related mailing list. I couldn't avoid being caught by words like "long and strong," "high-speed steel," and "heavy cross section." These massive tools made my original set feel inadequate. The search for better tools was on.

All my life I have built things. I began building my own long-and-strong high-speed-steel tools. My first tool holders were made from plumbing and gas pipe, with set screws to hold machinist's tool bits. If the tool bits will cut steel, they surely will cut wood. My thinking.

They started modestly enough with $^3/_{16}$-inch square tool bits and $^1/_4$-inch galvanized pipe, 18 to 20 inches long. I progressed to $^1/_4$-inch tool bits, longer pipe, and finally to $^3/_8$-inch bits and 38 to 40 inches of pipe! I built these monster tools without much trouble, but I discovered that instead of solving a problem, I had created one.

When roughing a not-too-smooth bowl blank, the standard tools not cutting as quickly or efficiently as I thought they should, I reached for my Wood Hog, the 40-inch one. The tool was more aggressive, yes, and so was the catch! When the dust cleared, I found that I had broken not the tool rest but the tool-rest holder! Catches happen, but clearly this tool had bitten off more than the rest of the system could chew.

Now when I experience trouble with a $^1/_2$-inch gouge, I try a $^1/_4$-inch gouge. It may take longer, but the catches are correspondingly smaller. Try it! It may be your way, too, of avoiding those bad catches and big surprises.

—Paul F. Heede, Hollywood, FL

Reviewing the reviews

Mark Salusbury's letter in the March 1995 issue castigates my reviewing of John Hunnex's book (*AW*, September 1994) without specifying where I have failed to be objective. His criticism is therefore difficult to counter, but hopefully the points below are relevant:

1. I believe that my reviews are objective, but objectivity is inevitably filtered through oneself. Two turners, one American, one British, whose original work is similar to pieces in John Hunnex's book felt my review was too soft.

2. The book reviews in commercial woodworking and woodturning magazines tend to be favorable. The ties between such magazines, book publishers, advertisers, and book distributors, while having benefits, may not be spurs to prompt or fearless reviewing.

3. The promulgation of independent views is a stressful and little appreciated role in society; it is also vital for a healthy society.

4. Publishers now consider woodturning a fashionable and lucrative area; there are approaching fifty woodturning books in print. Unless books receive forthright reviews, many AAW members will waste money on poor books, and publishers will favor and promote such dross at the expense of deserving books that attempt to push woodturning knowledge forward.

Perhaps, as Salusbury concludes, "I guess it just depends on your perspective."

I also read with interest in this issue John Kelsey's review of Lukin's *Turning Lathes*. I have a fifth edition of 1899. Integral is a Britannia catalog. It is a reasonable assumption that Britannia employed Lukin to write the instructional text, especially as Britannia are the publishers.

My edition also includes a page which reprints eight American reviews of the book, so it was obviously sold, as presumably were Britannia lathes, in both Britain and America.

An indication of the book's market is given in the second part of its title: *A manual for Technical Schools and Apprentices*.

—Mike Darlow, Exeter, NSW, Australia

Learning to caress "in anger"

I've just read Mark Krick's page for beginners in the March issue, and I agree with him. He was kind enough to quote me, after all. Repetition turning is indeed repetition learning.

Newcomers to any skill activity can have as much theory as they can take on; indeed, they can be bursting with it. But they also need the very real experience of actually practicing the skill "in anger" or for real. You have to be in the water before you can learn to swim.

One point which I would like to take Mark up on: "And don't forget…rub the bevel," he concludes. I suggest that there is a difference between the bevel rubbing, the bevel touching, and the bevel caressing.

I also have to thank Mark for giving me the inspiration for another article. Keep watching my column in *Woodturning!*

—Reg Sherwin, Bromsgrove, England

X-Y what?

Re the letter from Donald Kronish in the March issue, what the #@%&*$!! is an x-y feed on a lathe? I've never heard of it, although that doesn't mean much. None of my friends have, and that probably doesn't mean much either, knowing my friends. But I can't find it in any of my books.

Since it sounds like the greatest thing since sliced bread, I'd really like to know more.

—Joe Hillsman, Lusby, MD

Donald Kronish replies:

Although I have been turning wood for more than a few years, I am by no means an expert, and technically I

need all the help I can get. An x-y feed (also called a cross-slide or a compound tool rest) is a mechanical screw drive that moves a cutting edge both parallel to and at right angles to the lathe ways. The feed is mounted on a swivel and can be adjusted to any angle other than 90 degrees, too. On a machine lathe the drive can be automatic at various rates of speed, and on advanced systems it can be computer driven.

On my antique Delta the feed is bolted to a slot in the ways and can be moved by loosening and re-tightening bolts. In any one bolted position, movement is 6 inches parallel to and 5 inches across the ways.

I frequently turn roadside hardwoods, which are always out of round. Since the cutting-tool position is fixed, I can easily turn a round block by simply turning the screw feed, thus eliminating shock to both the tool and my arm. I can also remove very small amounts of wood in one pass, yielding very thin, straight walls at almost any angle without breaking the turning. For example, I have cut a 6-inch-deep drinking-glass shape in end-grain pear wood containing knots, where the side walls are $1/16$ inch thick. I have also drilled multiple 1-inch-diameter holes in the side of a bowl blank and filled the holes with exactly the same size x-y-feed-turned plugs of a contrasting wood. Again, I probably would not have been able to do this with a hand-held skew.

Also, when mounting a bowl blank on a piece of scrap wood with newspaper in the glue joint, for security it is important that the mating surfaces are flat. Using the x-y feed I can be certain of accuracy in less than a minute without having to check flatness. Furthermore, when I turn a large bowl blank with a small base, it is smart not to put too much stress on the newspaper-lined glue joint. An x-y feed will remove controlled amounts of wood by simply turning a handle, no catches!

Obviously, nothing can substitute for an artistic sense of shape and form in turning, but anything that can make routine work easier is an advantage.

Moving right along

John Moore of Ipswich, MA, kindly took the time to send a letter reviewing problems he saw in the article I wrote on workpiece-powered sanding in the December 1994 issue. Correctly, he points out that rpm (revolutions per minute) is not the same thing as surface speed, which is usually expressed as sfpm (surface feet per minute). He notes that I apparently confuse the two in the last paragraphs of my article.

His comments indicate that one important presumption was not clearly expressed in my article. Perhaps I should have added that the surface velocities at the area where the disk and workpiece are in contact are essentially the same.

To further explain, surface velocity is the product of circumference × rpm. Since both surface velocities can be equated, the following simple formula evolves: (Diameter × rpm) of the workpiece = (Diameter × rpm) of the disk. Safe disk rpm can be calculated using this formula and manufacturer's recommendations. *—Bob Opdahl, Hurley, NY*

Erratum

The tip "Longer hot-melt glue sticks" (p. 14, March 1995) was contributed by John H. Sellers, Carleton Place, Ont.

PERSPECTIVE

On Reviews and Critiques

In the March 1995 issue of this journal, we were treated to two quite excellent reviews of separate turning exhibitions by Rick Mastelli (pp. 16–20) and Connie Mississippi (pp. 32–34). As I read these articles I began asking questions: How do people respond to reviews? How do we feel about the opinions expressed? More importantly, what can we learn from them that might contribute to our efforts in woodturning?

Without meaning to generalize, I would expect that a good portion of hobbyist turners feel quite disconnected from written reviews. After all, they didn't take up woodturning to be competitive, and it's pretty hard to feel included in the review process when you're not (yet) exhibiting your work. However, veteran turners often chase reviews like a brook trout in a mayfly hatch; knowing that a good review adds credibility to their efforts as professionals.

As distinct as these approaches may seem, there is one common denominator: The personal and emotional bond we all have with our work. So when a reviewer discusses one of our objects, we often transpose the message of that discussion directly onto ourselves. No wonder we become so emotionally charged when reading a review.

If this seems to ring familiar, let me try to offer some thoughts about reviews, and critiques, so that we might better understand how important they are to the world of the arts and crafts.

A review is often similar to a report; it describes the subject(s) in context to the venue. The author may venture an opinion as to the perceived quality of certain objects, or the exhibit as a whole. But usually it's a non-critical account accompanied with titles, sizes, types of woods used, and maybe something about how the objects were made. On the other hand, a critique is usually analytical, interpretive, thought-provoking; it generally attempts either to place the object in some his-

ON REVIEWS AND CRITIQUES (CONTINUED)

torical context or to compare it to the works of other artists, or both. (These are meant to be descriptions, not definitions; there is great overlap and much room for interpretation).

Most of what we read in today's woodturning journals and magazines are primarily reviews, not critiques, and most are written by woodturners, not art critics, with the obvious advantage that no one knows more about the subject of woodturning than ourselves.

The disadvantage is that the whole process of woodturners writing about other woodturners is somewhat incestuous, for it's virtually impossible to achieve a true level of personal detachment. Can we really expect one woodturner to critically slam another's work and not anticipate some professional repercussions—to say nothing of hurt feelings? It would be like "suggesting" to my wife that she wear a different dress from the one she had already picked out: Makes for interesting conversation, but whose interests would be served?

At the same time, being challenged is a way of growing and gaining strength that takes us beyond our current level of creative development. Put another way, we learn from searching for things that we don't know, rather than what we already know. So if a review is written like a report, but without any attempt to challenge the subject on some critical level, the person being reviewed may very well hear this message: "Keep making what you already make and the reviews will keep pouring in," when what the reviewer really wanted to suggest is: "We already know what you can do, now get off your butt and take your work to the next level."

On the other side of the fence is the bona fide hard-core critique; something that we have yet to see in woodturning texts. Most of today's craftspeople have evolved directly from the workshop to the marketplace, so they've rarely had the opportunity to develop the skills, much less the language, required for solid critical evaluation. And since they're already out there selling, they may not feel a need for it.

One can also draw a good case that most art criticism has been created by critics, for critics, and to serve only a narrow swath of the hierarchically motivated, art-elite community, namely, themselves. "Art-speak," as it has come to be known, has replaced "art-sense," not as a vehicle for learning, but as justification for the value of an artist's work *through* the review process. For instance: Who else but a dictionary-bound, thesaurus-head would stretch so far as to use the term "schizogenesis" to describe Jackson Pollack's fall from glory for overproducing his own successful style to supply an inflated sales market?!

This is not to say that I see no value in art criticism. Good criticism can provide a valuable *check and balance* to the growth of an artist's work. Critiques are also a much-needed resource for historic documentation in academic research. The problem is that many artists consider art-speak more as a forum for ego enhancement than a resource for nurturing aesthetic growth.

So, where do we turn? Clearly, woodturning today has evolved far beyond the making of just bowls and spindles. There is plenty of cross-pollination in design from other craft media, not to mention strong influences from painting and sculpture. This new work demands an expansion of our current language to help artists communicate a message that goes beyond the works themselves. How do we create this expansion? By blending the past into a workable form to help establish pathways for the future.

Critical review has been used by writers in other craft media for decades. As a synthesis of what I've described so far, this approach to the review process helps provide a forum for writers as they address this transitional period we now see in woodturning.

Mastelli and Mississippi have taken this approach with their respective reviews. Mississippi, writing on the "Northwest Woodturners" show in Eugene, Oregon, often drew clues directly from the artists as a foundation for her impressions of the works she described. What we gain are her own illuminating perspective and a better understanding of what the artists might have been thinking when they conceived the works discussed.

Mastelli presents us with both a thoughtful and a thought-provoking interpretation in his review of the "Turning Plus..." exhibit in Tempe, Arizona. Some may object that he did not, as he said, "connect" in a positive manner with Karen McCoy's installation piece, "Sinkers and Swimmers." Yet he was entirely justified in wondering what was new or important about someone working in the conceptual style of installation art that had been thoroughly explored, if not beaten to death, back in the mid-1970s. Moreover, without a knowledge of art history, Mastelli might never have recognized this connection to the past, and the reader would have been left with an incomplete picture of the work itself.

But equally important, McCoy's piece *did* provoke a reaction from Mastelli, and I'm sure everyone else who saw it. Had these reactions *not* occurred—pro or con—the piece, itself, would have been considered a weak example of the conceptual idiom that is its heritage. Thus in Mastelli's review we have a perfect illustration that the "check and bal-

ance" of the review process does work and that we, the reader, are the beneficiaries of this process. Parenthetically, as a juror of this exhibition, one of the reasons—but certainly not the only one—that I accepted this piece is that it *would* initiate comment, even controversy, with the result that the exhibition gained a broader dimension with respect to the "Plus..." within its title,

The issue of "craft" and "art" in woodturning was also addressed, and properly so. After all, the objects in both these exhibits were not production crafts where what you see is what you get, and no amount of dialog is going to reveal more than what is clearly obvious. Instead, we perceive these objects as art. Thus they demand a level of interpretation that is both integral to, and inseparable from, the world of art.

And where else but in this world of art do we find a greater opportunity to experience an individual's thinking process than through his or her efforts at self-expression? Whether it be music, literature, architecture, the graphic arts, or craft, these are the elements of a culture's evolution that historians consider in the highest regard. And if the history of contemporary craft has not yet been formally written, we are at least well into the process of developing the objects that will become the substance for that documentation.

The review process is certainly one vehicle we have of recording these developments as they occur. In fact, I've always considered it the responsibility of the reviewer to challenge us with a message that goes beyond, "Gee, isn't that wonderful…" while the reader is saying, "...but I don't know why!" By addressing these subjects on a more critical level, we can reflect upon the second response and, therefore, bring greater credibility to the first.

—David Ellsworth, Quakertown, PA

JOHN JORDAN IN CENTRAL FLORIDA

THE CENTRAL FLORIDA WOODTURNERS have brought in a number of top demonstrators, including Ray Key, Mick O'Donnell, and Johannes Michelsen. Last February, by staging various events throughout a long weekend and taking advantage of local attractions, we arranged a very successful visit by John Jordan and his family. Friday night he conducted a fascinating slide presentation, then on the following three days he gave demonstrations and several hands-on sessions. Meanwhile, his family enjoyed Disney World and a plethora of other central Florida attractions.

The first day's demonstration included tool sharpening, basic cuts with the bowl gouge, as well as the turning of a lovely red maple natural-edge bowl. The second day Jordan covered the essentials of wood water loss, clarifying the problems we all have with shrinkage, warpage, cracking, and checking. He discussed these issues while turning a beautiful small hollow vessel. Then he demonstrated many of his wonderful, and do-able, texturing techniques. For many, this demo was the highlight of the day.

He used the index on the lathe to place equidistant marks on his hollow vessel, guides for hand-carving delicate flutes. He demonstrated how to make an orange-peel surface with a small hand-held electric reciprocating carving tool. Using the same tool fit with a different point, he did a stippled surface. Finally, he showed us how he achieves the look of hammered metal, using a short gouge and a lot of patience. It was quite remarkable. These are excellent ways to bring originality and distinction to turned objects of all sorts.

Attendance overall at the three mini-events and the hands-on sessions was in excess of 100 people. There were at least thirty-five of us at the slide presentation, including

John Jordan brings new meaning to the term "versatility."

spouses; an estimated twenty-five or so each day at the demonstration; and four students in each of the hands-on sessions.

One central Florida woodturner, reflecting on the four-day event, said, "Part of what makes John Jordan a world-class turner is that he demands the best of himself. Willing students also find that John urges them to do their best. Less than that just isn't good enough. This may be one of the attributes that makes him an extraordinary teacher."

Of interest to other chapters that do not have large facilities is that we held the weekend's various events at three different locations: The Woodcraft Store in Casselberry, the woodworking shop in a vocationally oriented public school, and the cafeteria in the elementary school. Principal Robin McNabb said, "These schools belong to the public. We're really glad to have these kinds of events in our schools."

According to one attendee, the Jordan visit was a "woodturning tour-de-force.…John is as talented at teaching as he is at woodturning. It was a wonderful experience for our whole group."

—Ken Keoughan, Mt. Dora, FL

I WAS POLITELY REMINDED A FEW MONTHS ago that an acknowledgment of receipt and some editorial feedback concerning tips submitted to Turners' Tips is greatly appreciated by contributors. If I have offended anyone by not sending out acknowledgments of tips, I apologize. In the future, I will endeavor to send out a postcard to those submitting tips. I should also mention that the Turners' Tips contest is our way of saying thank you to those who participate in this forum. If the truth be known, I don't do much more than put the tips on computer disk and send them to our editor. Without your participation this column goes nowhere. Any and all tips are greatly appreciated.

— Section Editor Robert Rosand, RD1, Box 30, Bloomsburg, PA 17815 INTERNET: rrosand@aol.com

Removing cyanoacrylate

To increase its shelf life, instant (cyanoacrylate) glue can be stored in a refrigerator. However, sometimes an accident may occur. I had a bottle tip over and leak, resulting in two glass jars being glued to the refrigerator's glass shelf. While a solvent for the instant glue is available, it is expensive. Instead, I poured some rubbing (isopropyl) alcohol onto the hardened glue. Within fifteen minutes of soaking and some light scraping with a knife, the glass jars were free and the glue removed.

— Gary K. Himes, Phoenix, AZ

Scratch those scratches

One of the most exasperating aspects of woodturning is removing tiny sanding scratches. After going through all of the sanding steps to achieve a perfect blemish-free surface, tilting the piece to reflect light reveals those faint swirls of lines that make the piece less than perfect. Rationalizing that the finish will cover them up doesn't work…it won't!

Wet-sanding with mineral oil is one effective method of removing the scratches. However, the oil never seems to completely dry and limits the choice of final finish.

My favorite finish is Deft Danish Oil Finish which is made from tung oil. This product penetrates the wood so well that you are confident of a durable, non-toxic surface that is pleasing to the eye and touch. Wet-sanding with Deft Danish Oil Finish works just as well as mineral oil. With the lathe turning, power-sand to 240 grit. After draping the lathe with rags to protect it, coat the piece with the oil and let it penetrate for a few minutes. Turn the lathe back on and hand-sand with 320-grit wet/dry silicon carbide sandpaper that has been soaked in the oil. A smooth sludge of wood dust and oil will gradually accumulate on the sandpaper, and when this happens you know for sure that you are sanding without scratching.

Turn off the lathe and recoat the piece with oil and wipe the sludge off. Do *not* let the sludge dry on the wood. Apply more oil and sand again with 400-grit paper. More sludge will form. Repeat the process with 600-grit Bear-Tex finishing pads and then 1000-grit Bear-Tex. (One source of this product is Craft Supplies USA, 800/551-8876.)

Wipe the piece clean of sludge and remove it from the lathe. Carefully examine for scratches. If any remain, hand-sand them out with the piece off the lathe. Then finish the piece with the Danish Oil according to the instructions on the can.

— Jerry K. Estes, Wichita Falls, TX

Double-sided extra

Using double-sided tape on the expanding jaws of a Nova Chuck prevents the wood from being marred and provides better grip. It gives me an extra feeling of security.

— Tony Abruzzo, Glendale Heights, IL, reprinted from the newsletter of the Chicago Woodturners

Setting your grinder angle

Woodturners like to grind turning tools to specific angles on a regular basis. This can be done by preparing a template for each angle from a scrap of $^1/_8$- or $^1/_4$-inch acrylic. The template is basically a cross section of the tool you want to grind. Place the template on the grinder tool rest and adjust the rest so the grinding wheel contacts the template at the proper angle.

— John H. Sellers, Carleton Place, ON

Non-marring cone center

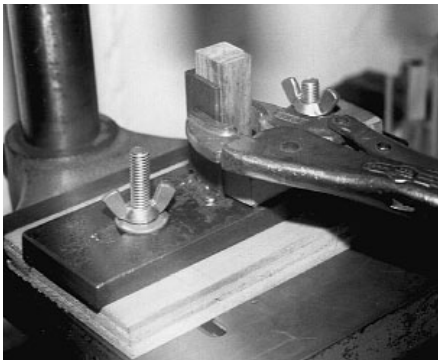
A cone center can mar a bowl when it is allowed to rub against the bowl's surface. Avoid these marks by hot-gluing a cork disk to the flat, metal surface of the cone center.

— Harris Barbier, Lisle, IL, reprinted from the newsletter of the Chicago Woodturners

Drilling straight and narrow

I was spending too much time and effort drilling pen blanks. I tried clamping the blank between two boards clamped to the drill press. Positioning the drill somewhat in the center, I would proceed, hoping that the drill would make it through without coming out the side. I thought about using a chuck mounted on the lathe, but that wouldn't save me the time I wanted.

I decided to make a simple jig (photo below) that would secure the blank and align it accurately. I took a



piece of 1/2-inch steel plate and machined two elongated holes which line up with the slots in the drill-press table. Then I welded a piece of 1-inch angle iron perpendicular to the plate.

I mount the jig to the drill-press bale using two 3/8×3 bolts and wing nuts, positioning the angle iron exactly where I want under the spindle. I add a piece of scrap to keep the drill tip from contacting the plate, secure the pen blank to the angle iron with vise grips, and drill through.

—A. Wayne Nakoneczny, Cheshire, CT

Markerboard sketching

When looking for new shapes and contours for bowls and spindles, I sometimes find it helpful to make a sketch of possibilities. On paper this can be a major nuisance, but I've found a way around having to deal with sheets of paper and the problems that go with making changes on paper. On the wall behind my lathe I have a large Formica-covered panel on which some of my tools are hung. There is a fair amount of open space on the panel on which I sketch possible ideas using a non-permanent felt-tip pen. This allows me to look at the possibilities and the blank stock in close proximity to each other. I find it very helpful for recording ideas which often come to mind at the oddest times when I'm not turning. When I choose to change or reject an idea, I need only to wipe the panel clean with a damp cloth or paper towel.

The panel in the line of sight of the turner is also great to use when teaching novice turners.

—Dutch Hollenbach, Roanoke, VA

Salvaging scrap

An easy way to utilize those small chunks of burl or spalted wood that are "just too pretty to throw out" is to glue them to short lengths of 1 1/4-inch dowel and chuck in a three-jaw or other mechanical chuck. Cyanoacrylate cement is convenient, since no clamping is needed, but any strong adhesive should work. This allows the turning of small vessels, hollow spheres for Christmas ornaments, and the like in a single fixing. (If you plan on adding a pendant "icicle" to an ornament, bore all the way through it into the dowel using a brad-point or Forstner bit as the final step.) And, if like me, you're inherently cheap, you can face off the dowel after parting off your mini and use it again.

—Kip Powers, Port Arthur, TX

Shop-made sanding disks

If you are like me and use a lot of sanding disks for power sanding with the 2- or 3-inch Velcro disk holder and are paying an average of 29 cents for the smaller ones, which are good for only a few uses and usually fly off, then here is how to make your own disks for 6 cents each, and they will be superior to what you buy and won't fly off.

You will need sandpaper, felt, and adhesive—I use 3M Super 77 Spray Adhesive, available at my local hardware store for $3.67. Sanding rolls are available in different widths from The Sanding Catalog (800/228-0000). A 4-inch by 10-yard roll costs $17.10 and you can get 360 2-inch disks from each. Craft stores sell the felt, usually in 9×12-inch pieces for about 20 cents, and each piece makes twenty-four 2-inch disks. I cut enough sandpaper to cover the felt and spray the back of the sandpaper with the 3M Super 77. After spraying, wait a few minutes for it to become tacky before attaching it to the felt. Note: almost always it won't make a difference which side of the felt you attach the sandpaper to, but on one occasion I noticed that the felt was slicker on one side, so that was the side I glued down. (You can test the felt by placing the disk holder against the felt to see which side holds better. Usually it's the same on both sides. Don't worry if it doesn't seem like much holding force; it will have more under power.)

After spraying the adhesive and attaching the sandpaper to the felt, cover it with a board and some weight for a minute; this will give it a good, even bond. Then take your rubber disk holder and a pencil and draw your circles on the sandpaper side and cut them out (not with a good pair of scissors!).

I can usually make about 80 disks in an hour, and I have been using this method for a year now. There are numerous advantages: the felt is about 1/8 inch thick, and this helps to dissipate some of the heat and keeps the edge of the Velcro on the disk holder from burning off, which is usually why the sandpaper flies off. When you cut them out, they will be slightly larger than the holder, and this lengthens the life of the Velcro. I use my disks on my Makita 6501 high-speed (4500 rpm) drill, and they don't fly off.

After you have used your sanding disk and are ready to remove it from the Velcro, grasp the felt *with the sandpaper* and pull off. You will notice when it's off that some felt fibers are standing up. Just take a sharp scissors and snip them off and you are ready to use it again—it takes only a second to trim after using.

By the way, I keep my disks in Pringle Potato Chip containers. I cut them down to about 4 inches and write the grit size on the clear plastic lid. The beauty of this system is that you have an excuse to buy and eat the chips so you can use the containers. This also has the added benefit of increasing the mass around your middle, which acts as a secondary tool rest. Most of the great turners have this, though they don't talk about it.

—Mike Kornblum, Mountain Home, AR

LAMINATED TURNINGS

From landscape to vessels

VIRGINIA DOTSON

THE ARIZONA LANDSCAPE INTRIGUES me. Its multicolored patterns of rock layers change over time, from upheavals aeons ago that have shifted the strata into all sorts of angles to the on-going forces of wind and water that reshape the surfaces. The exposed layers of rock have shown me many things that I can do with wood layers, and I have been working with these ideas in my turned work for the past ten years.

Design considerations

Successful laminated work requires good design and a lot of attention to detail. Stunning figure will not substitute for weaknesses of form or flaws in craftsmanship in a laminated piece. Yet the piece will be compared to natural wood with all its special features—spalted or bird's-eye maple, quilted mahogany, figured walnut, zircote, or whatever. A laminated piece may or may not be as interesting as these; either way, if it doesn't work, you can't blame it on the wood. It is disappointing, to say the least, to go through all the work involved in creating a laminated vessel, for an end result that is less interesting than the starting point! There must be an infinite number of combinations of different woods and patterns. Through continual experimentation, I have found many of the ugly ones, as well as a number of exciting and beautiful combinations.

I prefer vertical laminations because in turning, the lines echo the shape of the object. Unlike radial or strictly horizontal designs, which tend to be read as surface designs, the pattern of a vertical lamination becomes an integral part of the vessel.

There are two sides to this issue. On the upside, if you've turned a perfect, elegant form with smooth, accelerating curves, the lamination lines will emphasize and enhance it. On the downside, if the form's proportions are clumsy or the curves are awkward or kinked, the lines will bring out these qualities. Fortunately, these lines can help you improve your forms, because their effect is evident as you work the piece. If you stop the lathe and look periodically, the lines will show where the problems are, so you can correct them.

Some shapes work better than others with vertical laminations. U-shaped forms look very heavy and uninteresting to me. Nor do I like spherical forms, which make bulls-eye patterns on each side. I don't use closed forms in my work. I think open forms work much better with vertical laminations—when both surfaces are visible, they show an interaction of outside and inside patterns which can be quite exciting. The photos on these and the following pages show some of the forms I have used successfully. The small feet and wide rims show off more of the pattern

"Opposition #1," wenge and Brazilian satinwood, 5" h. x 12" dia.

"Wedge Variation #4," Finnish Birch and Ebon-x™, 8" h. x 10" dia.

and make the pieces look lighter. In general, I have found it best to use simple laminated patterns with the more complex shapes, such as that shown on the facing page.

For a laminated vessel to be successful, I consider the following aspects to be essential.

- Unity: This is the key. All the elements must come together into one total form. Matching the wood grain carefully contributes greatly to this sense of unity. (You know you've succeeded when the customer asks, "Is that all one piece of wood?") It is usually wise to limit the number of different patterns and colors used.
- Focal point: This should be one strong feature or group of features that attract and hold your attention. It usually involves some sort of a variation to the basic design: a contrasting color or material, a change in direction of the patterns, a change in shape or scale, or some carving, for a few examples. The main idea is to keep the piece a bit unpredictable.
- Proportion: The piece needs a pleasing dimensional relationship. There are no rules for this, because we are dealing with perceived proportions, and these are affected by the particular curves of the vessel, as well as its relative size. The piece on this page, for instance, comes from a nearly cubical block, proportions that would seem to be static. But the detailing defines a dynamic shape.
- Scale: The various elements need to be appropriate to the size of the vessel: a small vessel needs to have thinner wood layers, and thinner veneer, than a large vessel. An elegant form can become clumsy or uninteresting if rendered in laminations that are too thick or too thin for its size.
- Color: I like to use contrasting colors, but sometimes subtle shadings of one color are effective, too. A vessel is relatively small, so it is best not to use too many colors together—I almost never use more than three, often just two. Also, you need to be aware of how the wood color will change after it is finished and after aging several years—will it maintain contrasts and still be interesting?
- Balance: Again, there are no fixed rules. Symmetry is the safe solution, but it can be boring. Other kinds of balance depend on perception, not rules. A successful piece may have a dynamic balance among different design elements—one large wedge on one side of the center offsetting two smaller ones on the other side, for instance. Texture and pattern in the wood are additional elements to consider in the design and selection of woods, and in how the wood will be oriented.

In my vessels, I use combinations of a few basic patterns: bands, wedges, and fan patterns (groups of wedges). These patterns can relate to the imagery of landscape or other elements from the natural world.

Within the bands of alternating woods, which compose the overall pattern of the piece, wedges can be used to shift direction, or as individual strong elements with a contrasting color. It is best to keep them under 45 degrees to avoid large areas of cross-grain construction. The appearance of a wedge varies widely with its location on the vessel: inside or outside the foot; on a tightly curved area or a flatter one; oriented horizontally, diagonally, or vertically; continuing past the center of the vessel, or stopping short. Wedges used in combination can create fan patterns, for a directional sense of movement in the vessel.

For all of these elements, placement and balance in relation to the turned form is critical. To work out

"Wind Eye #1," Baltic birch and acrylic, 12" h. x 8" dia.

the design I use full-size drawings: top and front views, and often a template showing the shape of the finished vessel with the location of important features. The template is helpful later in centering the blank before turning. These drawings will allow me—before I start cutting—to decide on the proportions of the various parts: the thicknesses of the layers, the size of the wedges, the angle of the layers, etc. With these issues decided, I can judge the overall balance of the piece. I use the drawings to plan out each building block needed to construct the blank.

Wood selection

It is important to match all pieces of each species of wood for color, figure, and grain orientation. This step contributes greatly to a unified appearance in the completed vessel. This is not the place to use up odds and ends of scrap. I usually look for straight-grained wood that is flat-sawn rather than quarter-sawn, because the figure will usually match better and complement the form. The wood must be thoroughly dry (approximately 6 to 8 percent moisture content) to avoid differential shrinkage after the blank has been put together.

There are many woods to choose from. Locally available wood may work fine, as long as it's dry. Common domestic woods can work very well: maple is good with any contrasting dark wood, and cherry has a beautiful color that gets richer with age. Ebon-x™ is a domestic walnut that has been given a beautiful uniform black color through a non-toxic chemical treatment process. Lesser-known imported hardwoods from renewable sources are becoming available. Many of the familiar exotics have beautiful colors, but some of them don't glue well with ordinary adhesives. If working with an unfamiliar species, test first.

All the woods used together should be similar in density. Differences in density can cause problems in turning, and may also contribute to stability problems, over time, in the completed vessel. If I am planning open spaces, however, I will incorporate softer species, such as pine for wedges, to make cutting them out after turning easier. All the woods used together should have similar gluing properties.

The veneer used should be dry, too, and match the density of the other woods in the blank. White and black veneers are most useful for their color contrast with other woods. Maple veneer up to $^1/_{16}$ inch in thickness is commercially available from several sources. If I need $^1/_{16}$-inch thick black veneer, I ebonize walnut veneer by soaking it in a solution of vinegar and iron filings; the commercially available dyed material is too soft to use for laminating.

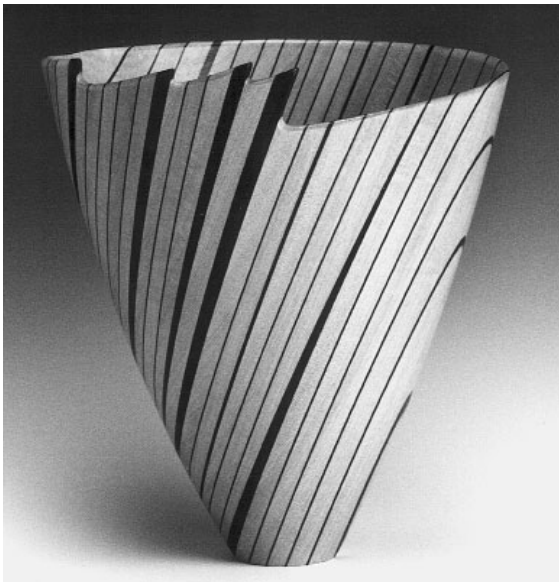
Blank construction

After selecting the wood, I resaw the layers to the thicknesses called for in my drawings. I use a new, 3-tpi hook-tooth blade on my Delta bandsaw, plugged into a surge protector. Then I run everything through the planer to bring it to final thickness and provide the optimal surface for gluing. I leave all the boards long (4 to 5 feet or so) until the next step. If the design calls for long, thin wedges, I saw these on the bandsaw and send them through the planer in pairs.

After planing, I cut the matching boards to length to make each of the blocks needed. I also cut the veneer layers needed. If the vessel is small, I keep two or three blocks together for easier handling.

Before gluing, I dust off all the pieces, match the grain orientation, put the veneer layers in between, and mark the top clearly. I orient the grain in each layer so that the rings are concentric—it gives the completed vessel a much better appearance, and helps create a sense of unity in the vessel. I like the idea of it, too—reassembling the tree. After it's turned, the whole vessel will move together with seasonal humidity changes.

It is important to have very tight



Virginia Dotson

"Sunlight #4," ivorywood and Ebon-x™, 9" h. x 8" dia. White House Collection of American Crafts.

"Shadows #6," wenge and maple, 4" h. by 11" dia.

glue joints in laminated work. I use plastic resin glue because of the light tan color, the almost invisibly thin glue line, and the long working time. I mix up the glue powder with water (5:2 by volume). I apply it to both surfaces of each joint, using a roller or brush. Then I realign the layers, set the block up on my clamping jig (which simply supports the layers to keep them from shifting) and apply the clamps. I use the heaviest Jorgensen clamps with a 5-inch reach, and place them about every 3 inches. I use cauls on each side of the block to distribute the pressure, and put a second row of clamps upside down along the top of the blank, to equalize the pull. It is not possible to apply too much pressure by hand to hardwoods. If you've ever seen a glue-up for stack-laminated furniture, that's what this glue-up looks like. I let this set for at least 24 hours.

This process will produce the first set of blocks—the building blocks. Depending on the design, several more gluing steps may be necessary—adding wedges, recutting, and regluing some of the blocks—each step setting at least 24 hours.

This method of laminating produces a solid blank, not a shell. Since the rings are oriented as in a tree and the blank will move in response to changing moisture content, I wrap it up in plastic until I'm ready to turn it. For a thin-walled vessel, I rough-turn the blank before wrapping it up, and set it aside for a few days.

Turning and finishing

I trim the blank as well as possible before turning. The template helps to locate the center and the areas that can be trimmed off. I mount the blank on a waste block using green Hot Stuff, for strength. Sometimes it is possible to separate a cone for a smaller vessel out of the center of the blank. Before rough-turning, I look to see if the pattern is worthwhile.

In turning, every variety of wood is a different material and has to be handled appropriately. A laminated blank puts several species together. In addition, wood that is oriented differently will turn differently. I usually start first with a bowl gouge and see how the blank is behaving. Sometimes a gouge will peel off layers or take off large chunks (especially on diagonal blanks). If this happens I change to a heavy scraper. Use the tool that works best.

While shaping the exterior, I stop the lathe frequently and check the design to see if something is developing that is better than the drawing. If not, I turn the exterior according to plan, leaving the base fat to keep the mounting strong. Then I move the tailstock away and rough out the inside. If the blank moves at this point, I retrim the outside, sand it, and finish-turn the inside.

Before sanding the inside, I protect any light-colored wood from contamination by dark-colored sawdust by scraping it clean, dusting it off, then sealing the pores with a thin coat of shellac or Deft lacquer.

Last, I turn down the base on the outside, checking the design frequently if I have a wedge or important line that needs to be just outside the foot. If the vessel is symmetrical, I place it in a reversing jig and turn the foot. If not, I shape the foot with a small disc sander. I use a small, fine-toothed Japanese detail saw (it looks like a miniature keyhole saw) to saw out any negative areas or to reshape the rim. Carving knives also help in detailing.

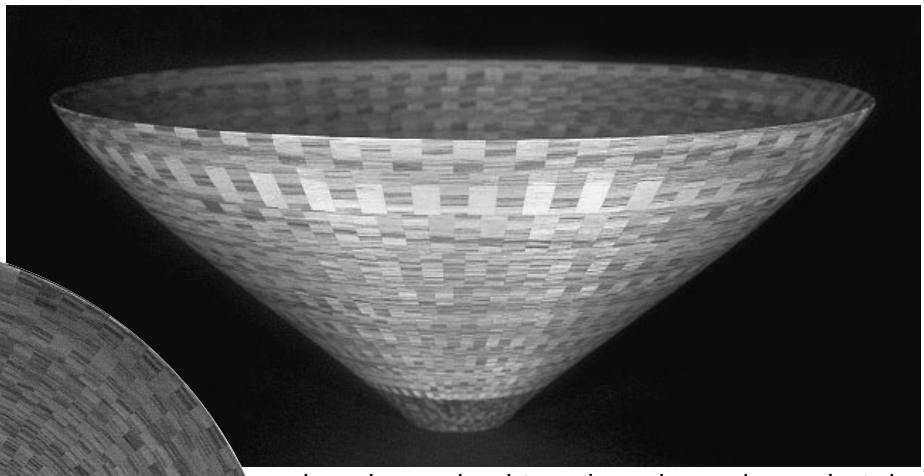
Before finishing, I dust off the piece with an air gun, to keep the colors clean. I use a Tung oil varnish such as Waterlox on most woods. After rubbing down the final coat (usually the third) with steel wool, I wax the piece. On Baltic birch I spray on three coats of water-based lacquer and rub it down.

Virginia Dotson lives and works in Scottsdale, AZ. *Special thanks to Chuck Rhoads who provided material from a recent workshop Dotson gave at Yavapai College in Prescott. Photos: Abrams Photo/graphics, except where noted.*

REDISCOVERING POLYCHROME

A little journey for the mind

MICHAEL SHULER

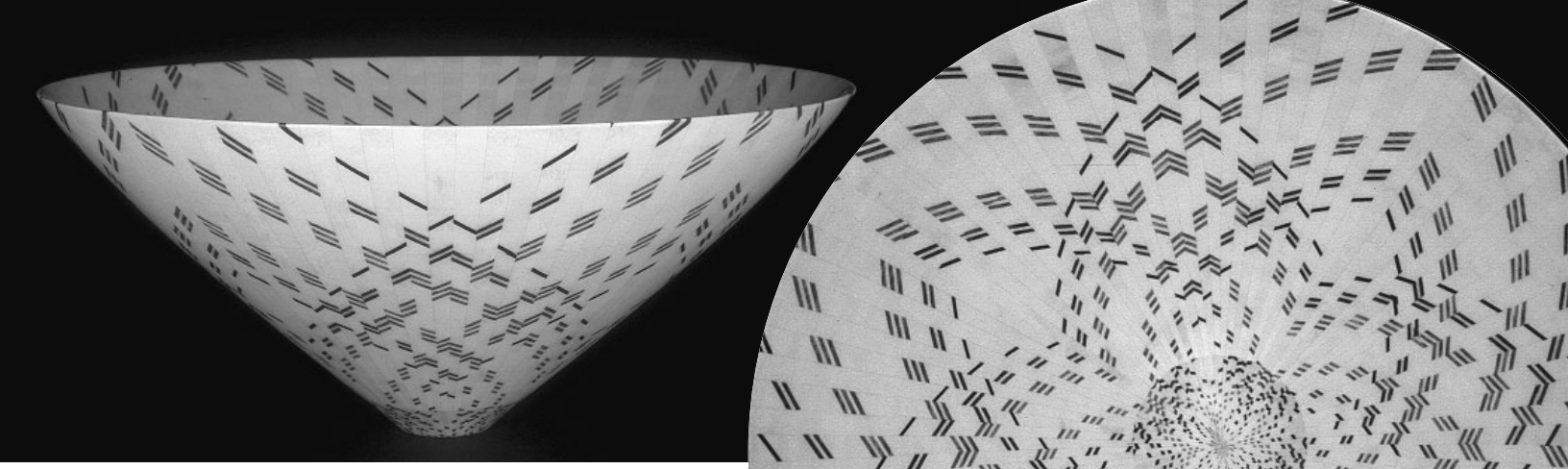


This "Phase I" bowl (Brazilian tulipwood, 12" dia.) displays the segmented and reorganized grain pattern of a single board.

THE CONCEPT FOR THE WORK YOU SEE pictured here dates back to early 1985, when I began looking for a way to construct segmented vessels from a single piece of wood—not a hard thing to do ordinarily. But I did not want to destroy the figure of the wood by cutting it up into tiny pieces. Rather, the figure needed to be incorporated into the finished piece. The process I developed keeps the figure intact, actually doubling the impact of it by alternating wedge-shaped segments taken from opposite sides of the board, which are glued up into a disk, bandsawn into tapered rings, and stacked into a conical turning blank. (I wrote on my methods in *Fine Woodworking*, No. 76, pp. 72–75.) This technique causes the figure of the wood to travel around and around with the shape of the vessel, relieving me of the tension I feel when I see a turned object with the grain of the wood doing one thing while the form of the object is doing another. Segmenting and reassembling in this way, the wood gives a sense of motion to the object. It carries the eye around and down, sometimes lending a sense of great depth as the wedges in the bottom taper to nothing in the bottom center. The interior view bears an odd resemblance to the human eye, the body of the bowl representing the iris and the bottom the pupil, in a psychedelic sort of way.

I like to use colorful species for this work, pieces of wood that have strong figure and contrasting hues. I've completed over 600 pieces using this approach, which has become Phase I. Approximately 200 of these are what I call my "signature" pieces, being about 12 inches in diameter and 5 inches high, and mostly consisting of either 832 or 936 segments. Surprisingly, the repetition has not been boring. The process is so difficult it keeps the adrenaline flowing.

The exterior shape, the profile, as with most turned objects, has been one of the most intriguing aspects. Only a couple have been the usual convex bowl shape, and one early one flared out along a concave line. All the rest have been the long gentle S-curve. These pieces really make me stretch to find the curves that are just right. I used to try simply to get the maximum curvature out of the $^3/_8$-inch-thick sides that formed the rough conical blanks. Now I sacrifice some of that in the course of finding the cleanest, most graceful line. Sometimes, in the middle of turning, I stand back and look at it and it won't look right and I can't see what is wrong. But I can run my hand over it and find by feel the areas that need a little more work. The undulation of the S-shape seems to join best with the movement of the figure through the rings. The base needs to



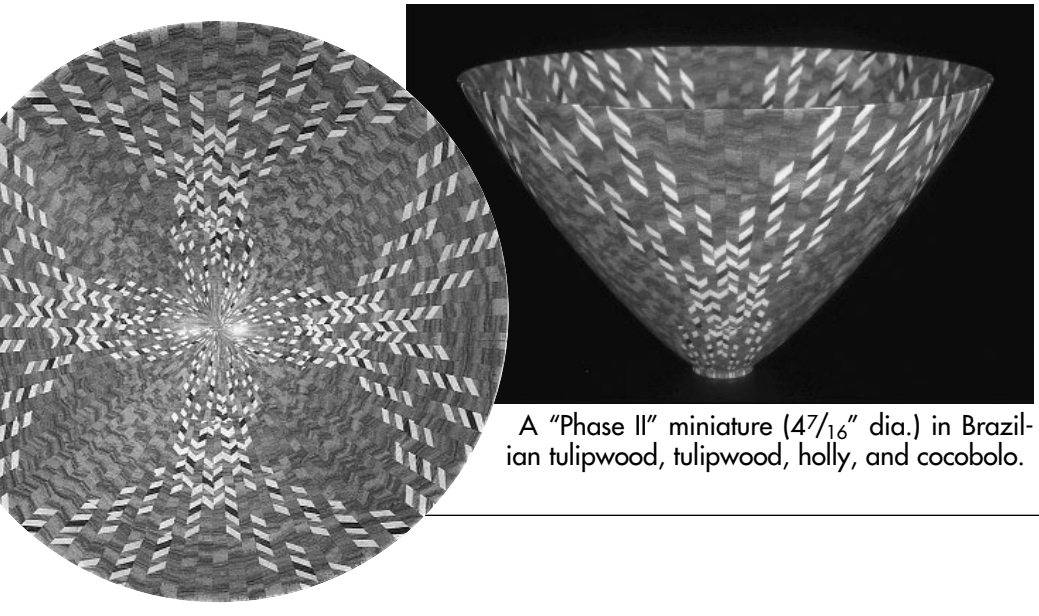
A "Phase II" bowl (12" dia.) from a laminated board of holly, Brazilian tulipwood, cocobolo, and Gabon ebony.

be very small, causing as little contact as possible between the object and the surface it rests on. *Pirouette* is the word that has always come to mind, which is what these pieces seem to be doing sometimes, frozen in space and time. I want them to dance a little. They need to be thin and light; it adds to the ethereal qualities when they are held.

In the beginning I had high hopes of being able to move quickly into new design phases. The very difficult part of the process is the tablesaw work, which requires cutting to be done to impossibly small tolerances through long repetitions of cuts. Phase I, as represented on the facing page, could absorb minute inaccuracies. Phase II, as represented on this page, could not. Fine-tuning of the table saw and blade, along with myriad other nuances, was necessary. These efforts to develop the process also pushed me to focus more on form, as I was describing earlier. The net effect was to cause me to settle in with the designs I was already working on and to develop them to their fullest before moving on. That is proving to be a great benefit in the new phases. It has taken seven years to develop the necessary freedom.

The significant change in Phase II is a departure from the reliance on dramatic wood figure in a single piece of wood to a reliance on contrasting species—polychrome, the very thing I was avoiding so strenuously in the first place. The old reliance was on the varying colors within single species. Since these came from the same tree, they would necessarily blend with or complement each other perfectly. Now, with various species, the colors and textures have to be chosen and mixed very carefully. Having a large background of fairly even texture and color helps. It seems to do two different things at the same time: It provides strong cohesion through the entire object, dominating it from any one view, and it also underlays the polychrome patterns, supporting them while they do their work. The only statement I am looking for is one of simple beauty. Food for the spirit. I want to provide a little journey for the mind when you look down into one of these bowls.

Eventually they won't be vessels anymore. They will become sculptures of combined turnings, built one inside the other, increasing in scale over time. So many things can be done in the realm of art, so many things to say that can be much better said visually than verbally. I like my objects to speak for themselves. Sometimes I don't know what they are saying. Often others are the only ones who hear.



A "Phase II" miniature ($4\frac{7}{16}$" dia.) in Brazilian tulipwood, tulipwood, holly, and cocobolo.

Mike Shuler, of Santa Cruz, CA, will demonstrate his techniques at the AAW Symposium in July at UC Davis.

TWO MORE APPROACHES TO GLUED-UP TURNING

JACK AARSVOLD ON LOW-GRADE PLYWOOD

No attention to the techniques of laminating woods would be complete without looking at a unique approach; turning low-grade industrial plywood. I have been turning plywood for several years and have always attempted to obtain the best wood with no voids and even plys. As we know, that kind of plywood is not always possible to find and if you can find a good batch, it is often cost prohibitive to use.

One day, a few months ago, David Ellsworth and I were walking through a gallery where we saw a pottery sculpture that resembled a piece I was contemplating. After a few minutes of discussion, we decided that it would be interesting to turn a piece in that style (1500 BC Greek) but instead of attempting to fill voids, sand, and finish with a plastic coating, that I would finish the piece to look like it had just come off the gouge.

I decided to get this look by using exterior-grade plywood. A trip to my local supplier disclosed that even amongst the construction grades, there are many choices. I picked a BCX 5-ply $^3/_4$-inch because it seemed to be of consistent quality and the price was within my budget.

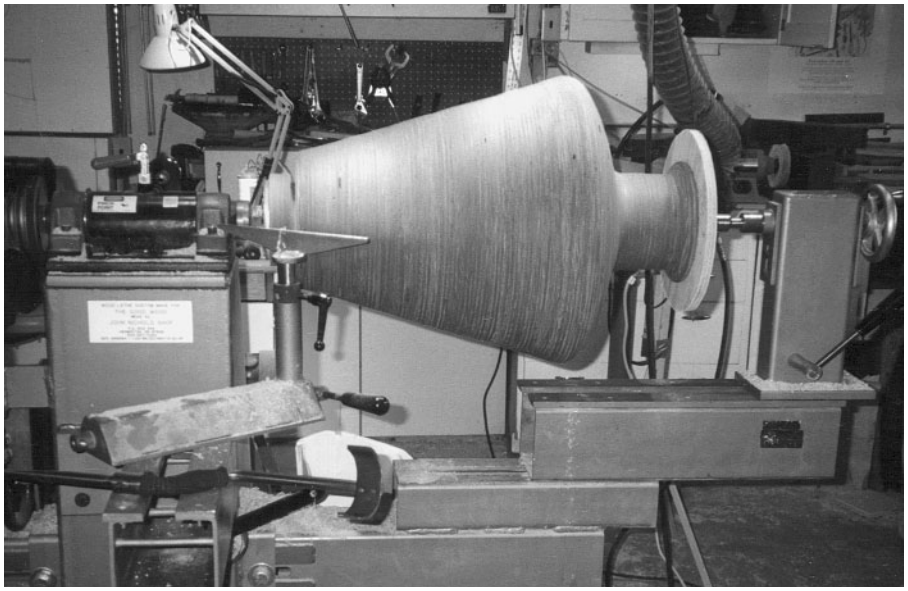
There are some inherent dangers to turning plywood, and I found that using an exterior grade magnifies these problems. My two main concerns have been the dust generated and the undependability of the laminations. All turning produces dust, but plywood is particularly bad because of the type of wood and the glue used in the manufacturing process. I use a dust-collection system and an air-filter helmet every time I turn the lathe on. The other problem is that because of the method of construction, some plys will be very weak but not noticeably so until turned at high speed, when they will separate. If you notice a vibration when you touch your tool to the piece, shut down immediately and inspect for cracks. You can usually see them by pushing against the edge furthest away from the headstock. If you ever have a 50-pound piece of plywood land in your lap, you will ensure that it never happens again.

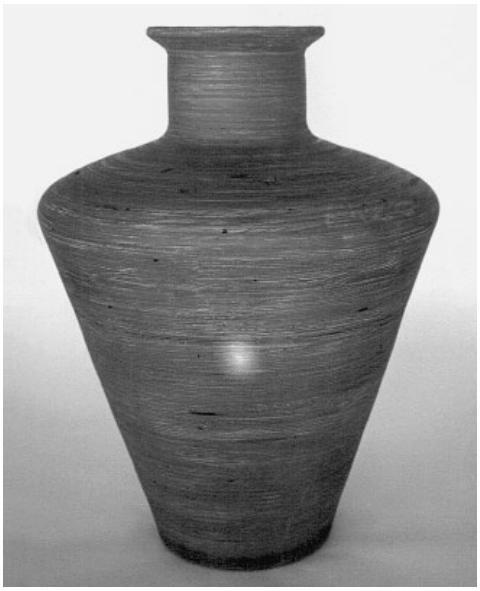
I do my gluing on the lathe, clamping between headstock and tailstock. To keep the glue from sticking to the lathe, I lay a sheet of waxed paper where the glue will drip. I use Titebond II glue, as it sets up fairly fast and is easy to work with. On the other hand, I am not a fan of Titebond's characteristic yellow color, and I have experimented with dying the glue to produce enhanced gluelines. It is easier to bring them out in black or red than to try to hide them. Also, because plywood is a series of lines, the accent seems quite natural.

The dye I use is Instant Coloring. A 2-ounce bottle can be purchased at most big hardware stores for about $4. If that is not available, I would go to a paint store and ask for a water-soluble dye that will mix with the glue and not destroy its integrity. It doesn't take very much.

I use the Stewart System tools for most of my plywood turning. I have a $^1/_4$-inch cutting tool tipped with diamond which requires no sharpening. It can be aggressive, so you must take care. For inside work, I put the Stewart tools in a 5-foot boring bar and use two tool rests.

Jack Aarsvold turns full-time in Mesa, AZ.





Exterior-grade plywood vase, 30" tall, on the author's Nichol's lathe, left, and finished with an oil-based weathering stain. right. The piece was lightly sanded only to remove splinters.

RAY ALLEN ON SEGMENTED JOINERY

Segmented turning is a lot like construction. You need a blueprint before you begin, so you know what you're making, its dimensions, and the relationship between its parts. It needs to be drawn to actual size and shape. This is your chance to make sure the form itself is good, even before you work out the details of the segmented design. If the form isn't good, throw it away and start over again.

Curley box elder, zircote, citrus, satinwood, bloodwood, dyed veneer, 10" dia. x 8 1/2" tall.

The success of the piece will depend on all the things that make any other turning successful: good form; smooth, flowing lines; thin wall thickness; and finished on the inside as well as the outside (if you can see it, you can get to it for sanding and finishing). The added elements of segmented design and construction will enhance or destroy an otherwise good turning. Most important is that all the joints fit as if the pieces grew there. Here's where attitude makes the difference. I say that there is no such thing as "Oh shucks, it's good enough." I was asked by another segmented turner how I got my joints to fit so well. My answer was, if they don't fit, I don't put them together. If you feel this is a little strong, then maybe you shouldn't be doing segmented work. You need to get into the right frame of mind, or you will not be successful.

Next, you need good tools: a good table saw, disk sander (12 inches is best), and, of course, a lathe. The principle of segmenting is the same whether the piece is 2 or 24 inches in diameter. Small pieces are harder to make because of the very small tolerances, and big pieces are more time-consuming because there's more stock to manage. The size that seems to be the easiest is the 6-to-10-inch diameter. The math is the same for straight-edged segments: 360° ÷ number of segments ÷ 2 = the angle for each side of a segment. For curved segments, you need a pin router and male and female patterns.

As for wood density, it does not seem to make any difference. I put soft maple with purple heart and lot of other combinations. The only problem is when your tool work is less than very good, requiring you to start sanding with something coarser than 220-grit. The soft wood will abrade more quickly and you will see and feel the unevenness in the surface.

When I encounter the segmented work of others, the first thing I look at is the joints. Do they fit? If they do not fit, I go no further. If they are good, then I look at the complete turning, its form, wall thickness, finish, inside finish, underside. Finally I step back and consider how the design and wood colors work.

Segmented turning has been my life for the last six years. I have put heart, body, and soul into it. I learn every time I make a piece. If I ever get to the point that I can't learn from someone else, I will quit.

Ray Allen is a retired carpenter who now turns segmented forms in Yuma, AZ.

Quilted maple, walnut, purpleheart, ebony, maple, bone, dyed and maple veneer, 18" dia. x 7 1/2" tall.

INTRODUCTION TO CHUCKING

Keeping it sweet and simple

PETER M. SMITH

ONE OF THE FIRST CHALLENGES FOR the turner who wants to make bowls is attaching the block of wood to the lathe. Once the bowl has been shaped, another major challenge is how to finish off the bottom. When people pick up a finished bowl, they invariably turn it over and examine the bottom. Instinctively they realize that's where the bowl must be held on the lathe and they want to figure it out. Good technique means the foot or bottom will be as well finished as the rest of the bowl, and there should be no detracting indication of how the bowl was attached, or chucked, to the lathe.

Of course, in between the first and second challenge, there are plenty of other challenges, but I would like to concentrate on chucking methods here, based on my own experience. I'll address basic chucks first, and then reverse chucks

Basic Chucks

There are several chucks on the market in the $200 range available for most lathes. These are usually multi-purpose affairs with expanding and contracting jaws. I bought one, and after paying another $50 to have it properly tapped for my headstock spindle, I used it once or twice only. It now sits on the shelf waiting for the special case, which never seems to come, where its complexity is needed. While I am sure these chucks are good and serviceable, I prefer the KISS approach—Keep It Sweet and Simple. I have found that two chucks are all that are needed: a screw chuck and a faceplate.

The screw chuck—A good screw chuck will securely hold large blocks of wood. The basic design is straightforward: Usually it's a $^3/_4$-inch-long screw extending from a small faceplate. A matching hole is drilled in the wood and the wood screwed onto the chuck. I have seen designs for home-made units where hardware-store lag screws are used, centered through wooden faceplates. However, the critical success factor for this chuck is the design of the screw, and here one product is pre-eminent. Glaser Engineering's screw is designed with a shallow pitch and large flanges that grip the wood almost without fail. Glaser makes two sizes of screw—one with a $^3/_8$-inch outside diameter, the other with a $^1/_2$-inch outside diameter. Both fit his chuck body; the complete unit is the Glaser Screw Chuck (about $100 from supply houses). I use the $^1/_2$-inch o.d. screw, and so I drill a $^3/_8$-inch hole in the face of the woodblock (approximately 1 inch deep) and spin the block onto the screw chuck. Some persuasion may be necessary, depending on the hardness of the wood. Once the block is tight, this screw will hold wet woods of large diameter, which are really heavy. (For safety considerations, see the sidebar on the facing page.)

When the outside of the bowl has been shaped, a $^3/_4$-inch-deep hole can be drilled into the foot, and the block reversed on the chuck. The design of the bowl should allow for 1 inch of waste at the foot, which will be parted off. I fitted a $^3/_8$-inch long-bore drill with an old tool handle, but I've also held a regular drill with a vise-grip. You have to be careful not to drill too deep, or the drill hole will go through the eventual bottom of the bowl, which is not recommended.

Immediately one benefit of the single screw hole can be seen—the reversed block should be almost perfectly centered. Work can now begin on the inside.

We can extend the approach even

Figure 1: Screw chuck

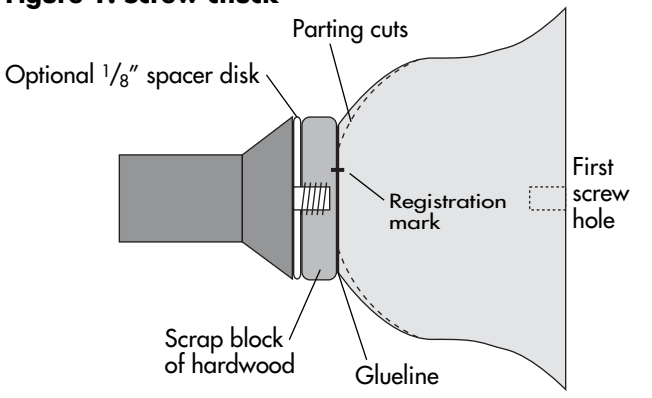


Figure 2: Faceplate

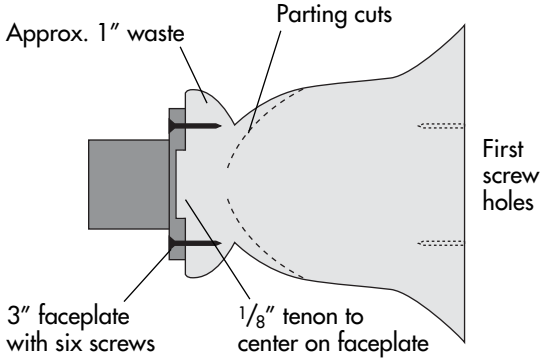


Figure 3: Jam chuck

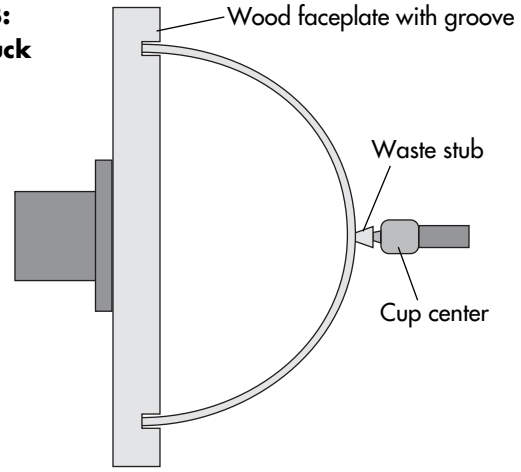
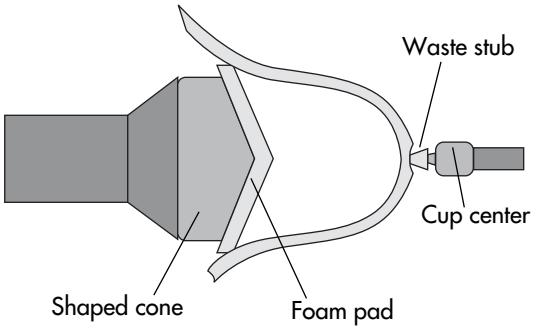


Figure 4: Jam chuck for irregular-edged work



more by using scrap blocks of hardwood glued to the (flattened) bottom of the bowl via cyanoacrylate glue, and drilling the hole in this after starting a hole with a narrow gouge (Figure 1). This is useful if the design requires using the full block of wood. Hardwood scraps are necessary; plywood separates and fiberboard crumbles. The scrap is turned to a circle and eventually parted off.

Another tip here is to use a $^1/_8$-inch plywood disk on the chuck to shorten the screw penetration into the wood. This is particularly useful for small pieces. If the wood is soft, a few drops of thin cyanoacrylate will harden up the drill hole.

Mark the position of the scrap relative to the bowl with a pencil or black marker, in case the bowl breaks off after a catch, or when it dries and warps.

Which brings us to another major advantage of the single-screw chuck: Once the bowl has dried for three or more months and stopped warping, and you now need to remount, true up, and finish it, the single hole is there for you, centered and ready.

The faceplate—For large blocks which even the Glaser screw will not hold, a face-plate and screws will be required. Large faceplates are not necessary except for starting on really big blanks (greater than 20 inches in diameter). It's hard to get a large enough flat surface on raw blanks, and a large faceplate limits access when used on the bottom of a bowl. A 3-inch faceplate is best, but it should be drilled for six screws. And the type of screws is important—sheet-metal screws with a uniform shank and square-drive pan head are my preference. Drywall screws are tempting because they are sharp and easy; however they are also brittle and will shear under stress, so they should not be used. Six $1^1/_4$-inch screws which penetrate 1 inch into the wood will hold most blocks other than decayed, punky wood, which can be hardened with cyanoacrylate. When the faceplate is used for the initial shaping, it is attached to the face of the block; and then it is attached to the bottom of the bowl, either to the wood itself (Figure 2), or to the scrap block if required by the design. It is sometimes necessary to drill pilot holes in the scrap block.

It is helpful to raise a $^1/_8$-inch-long tenon on the bottom of the blank, its width equal to the inside diameter of the faceplate. This will assist in centering the faceplate.

Safety Considerations

- Blocks of wet wood are heavy and uneven. Use the tailstock with revolving center to keep the wood up against the chuck, especially with the single screw, but also with the faceplate, until the block is true.
- Start with very slow revolutions; a variable-speed DC motor makes a great difference here.
- Always were a face shield (not just goggles). Stand aside from the plane of rotation.
- Be able to stop your lathe as soon as there is a problem—use a foot switch or a switch placed near the tailstock.

Reverse Chucks

There are several approaches to completing the foot of the bowl. I will discuss three: the jam chuck, the vacuum chuck, and the ring chuck. Each requires investment in time and money before it can be used, but this investment has to be made if the job is to be done right.

The jam chuck—This is the simplest device for reverse chucking: it is a wooden disk with a groove turned into it to match the diameter of the bowl. The bowl is reversed onto the disk and held in the groove by a snug fit, the groove serving also to center the bowl. The tailstock is brought up to help keep the piece in place. At low revolutions and with light cuts, the foot is shaped, leaving a small stub at the tailstock point (Figure 3). This stub will finally be chiseled off and the spot sanded to blend in.

The wooden disk can be held via faceplate or screw chuck. It can be any material—plywood is fine. One jam chuck disk is used per bowl, so you end up with a pile of disks of various diameters, but they can be reused with smaller-diameter bowls.

Figure 5: Vacuum chuck

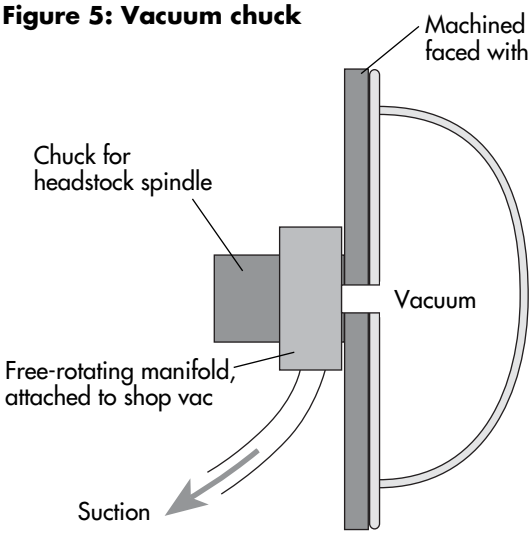
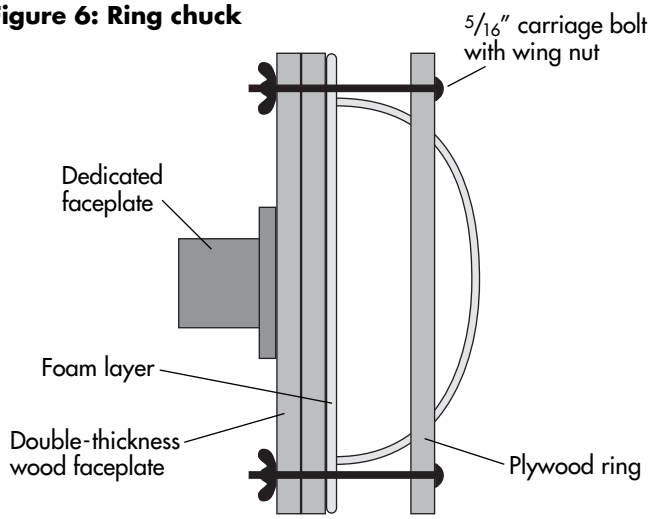


Figure 6: Ring chuck



The tailstock support also works for irregular- or natural-edged bowls, when a foam-padded cone is used inside the bowl to jam against (Figure 4, page 17). The cone is readily made from scrap wood to match the unique size and shape of the bowl; at its simplest it is the waste block left behind when the bowl is parted off.

This approach is pretty straightforward and works well, except that you have to find large disks of scrap wood and cut the groove to match, and fuss with the little stub at the end. By comparison, the vacuum chuck is more attractive.

The vacuum chuck—This is an advance over the basic jam chuck: atmospheric pressure holds the bowl against the faceplate, thus obviating the need for a groove (since the workpiece can be easily centered) and the tailstock (since air pressure is strong enough to hold it in place in most cases).

There are two types of vacuum chuck: One uses a suction tube centered in a wooden faceplate and fed through the headstock spindle. It uses a small vacuum pump. The other uses a shop-vac attached to a rotating collar behind a metal, engineered faceplate faced with a foam pad (Figure 5). The former fitting can be obtained from Packard Woodworks (704/859-6762) for $50; the latter from Craft Supplies USA (800/551-8876) for $160. I chose the shop-vac unit since shop-vacs are easily found (KISS again), and although I have not been using it for long, I like it despite the noise. For the right shape of bowl, the suction is tight and allows fast, effective finishing of the complete bowl foot. For larger bowls and odd shapes, or designs with uneven edges, this chuck is not so suitable, and I sometimes resort to using the tailstock for reinforcement. I intend to build, as needed, special-purpose wooden enhancements to the suction plate to deal with more complex shapes such as vases, although in these cases I find I can just as well use the tailstock and avoid the din of the shop-vac.

The ring chuck—Tried and true, the homemade ring chuck consists of a faceplate disk and a wooden ring which holds the bowl to the plate via bolts and wing nuts (Figure 6). Various lengths of bolts, and various diameter rings, are made to accommodate any bowl of diameter less than that of the faceplate.

Readily constructed in an afternoon out of plywood, the faceplate is double-thick and covered with thin foam rubber. The rings are of the same diameter as the faceplate, and have three matching holes for the 5/8-inch carriage bolts; register marks on each ring ensure the bolt holes line up. The inner diameter of the rings varies from narrow to wide; three or four can be made and the inner edges rounded over with a router to prevent marring the bowl.

The reversed bowl is held in place via the appropriate ring and length of bolt. The closer the ring can be to the faceplate, the more secure the bowl is against being bumped out of true. The bowl is then centered carefully (bring up the tailstock to register it) before tightening the bolts. I have seen designs where a stepped cone is added to the center of the faceplate to provide for rapid centering. When the lathe is turned on (at low revs, I hasten to add), the foot is wholly available for finishing. Again, light cuts with small gouges are recommended.

Summary

For the primary attachment of wood to a lathe, you can get by in most cases with the Glaser chuck, some scrap hardwood disks, and the ubiquitous, invaluable cyanoacrylate glue. To finish the bottom of a bowl, the bowl is held against a large home-made faceplate by the tailstock, suction, or a ring, the latter two leaving the foot completely clear for proper attention.

Peter Smith manages computer applications and turns in Princeton, NJ.

GLUE FACEPLATE

Easy and reusable

CHARLES BROWNOLD

The finished faceplates, the pin wrench, and a turning block ready to be glued to the faceplate. Photo: Daniel Ng.

SOME TIME AGO JACK WILLIAMS, A Nor-Cal Woodturners member, showed me a shop-made faceplate consisting of a standard steel hex nut epoxied into a hardwood block. Since then I have expanded on this simple and clever idea and have been using it almost exclusively for my bowl and platter turning. There are many advantages—it costs little; it allows you to turn the inside and outside and to finish in one set-up (except for reverse-turning the bottom); it does not tie up chucks or metal faceplates; it does not restrict you to the fixed base-diameter required by expanding or contracting chucks; and it allows you to have many turnings in progress.

You will need standard steel hex nuts to fit your lathe headstock. They are available in both right- and left-hand threads from large hardware stores and mill supply companies (look in the Yellow Pages under "Bolts and Nuts"). A 1-inch x 8-tpi RH nut costs approximately 90 cents. If the manufactured faceplate for your lathe is counterbored to fit over the back of the headstock threads, you will need a spacer washer behind the standard nuts.

The size faceplate is determined by the size of the foot or base of your turning. The following dimensions make a faceplate for a wide range of turnings: Start with two hardwood blocks at least $3/4$ inch thick by $3\,1/2$ inches square. I've used oak, maple, and walnut. Drill a $1/4$-inch hole in the center of each block and insert a small piece of $1/4$-inch dowel to keep the blocks aligned. Glue and clamp them together with the grain at right angles. When the glue is set, cut off the corners of the block on the bandsaw. Mount the block on a screw-center faceplate with a $1/4$-inch plywood spacer disk behind the block. This spacer allows you to turn a hole in the face of the block to fit the depth of the hex nut without hitting the screw of the screw-center faceplate. The hole should be deep enough to almost completely contain the nut for a snug fit. The hole wall should be left rough so the epoxy can get a good grip.

Before epoxying the nut in place, drill two shallow $3/16$-inch holes on each of the six faces of the nut to give the epoxy additional grip. It's a good idea to degrease the nut with a solvent. To prevent the epoxy from getting into the threads, seal off both faces of the nut with duct tape. Finally, cover the screw-center faceplate hole at the bottom of the nut recess with a piece of duct tape.

Avoid five-minute epoxies; you will need time to fill the spaces between the hex-nut surfaces and your turned hole. Apply epoxy to the six nut surfaces to fill in the $3/16$-inch holes. Fill the wood block hole about one-third full with epoxy. Push the nut into the hole. The epoxy will flow up around the nut. If the space between the nut and wood is not completely filled, add additional epoxy.

When the epoxy is set, remove the tape from the top of the nut and cut out the tape at the bottom. If part of the $1/4$-inch aligning dowel is still in place, drill it out. This hole acts as a vent for excess glue. Thread the faceplate onto your lathe, true up the face and back surfaces and turn the diameter to about $3\,3/8$ inch. In order to remove the faceplate from the headstock with a pin wrench, drill the block with three $1/4$-inch holes, $3/4$ inch deep, radially 120 degrees apart. Position the holes so that none is in line with the grain. Countersink each hole slightly. Make a pin wrench from a 4-inch long by $3/4$-inch-diameter hardwood dowel and a 3-inch-long $1/4$-20 hex-head bolt. Drill one end axially 1 inch deep with a $7/32$-inch drill, thread the bolt into the hole, and cut off the head.

Now the faceplate is ready to use and reuse! I turn a tenon on my blanks a little larger than the final dimension of the foot of the bowl or platter. Use a screw-center faceplate to hold bowl blanks, and hot-melt adhesive or double-sided tape for platters. The face of the tenon should be flat or slightly depressed. I turn a mating rebate in my wood faceplate to match the tenon on the blank. The bottom of the rebate should be flat or slightly depressed. This ensures that the blank will not rock on the faceplate and will turn concentrically. Apply wood glue to the faceplate recess and clamp the blank to it using a clamping jig. (See "Clamping Jig," *AW*, 8:2, p. 33.) Clamp the combination with the faceplate on top. Excess glue will be pushed up the $1/4$-inch hole that was used to align the blocks but will not get into the threads.

I do not use a paper parting surface. When the turning is finished, I part off the item just behind the foot. It's also a good idea to redrill the glue vent hole after each use.

When I am working on a turning, I sometimes turn away part of the faceplate near the bottom of the bowl or platter to gain access for turning.

I use the faceplate several times before it is necessary to reface it with a new block of hardwood. Use the same procedure to add the new block as you did when making the faceplate. Don't forget to drill out the aligning dowel.

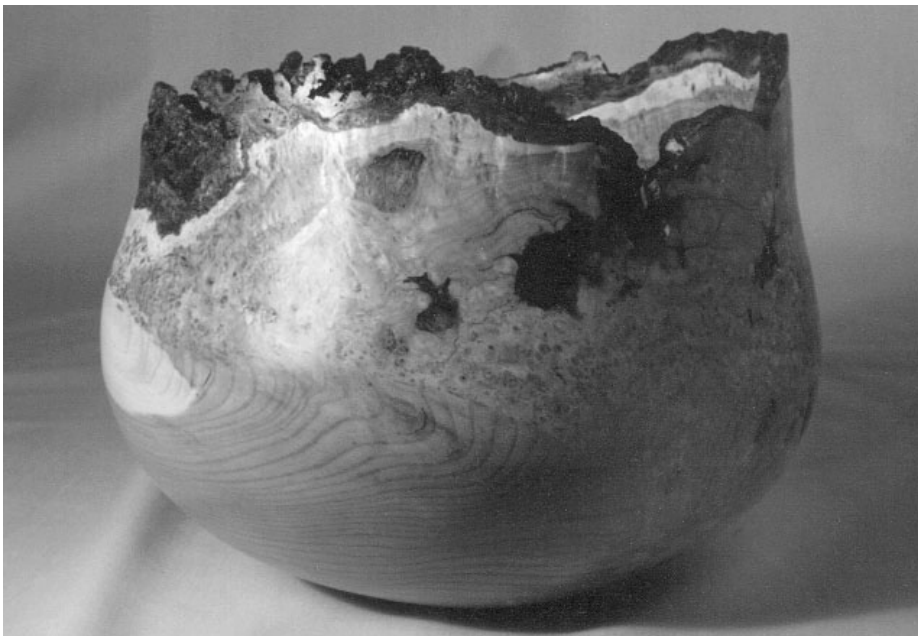
Charles Brownold turns in Davis, CA.

GREEN OR DRY?

Three alternative approaches

LYLE JAMIESON

TWO OF THE MOST OFTEN ASKED questions by woodturners or turning enthusiasts are where do you get your wood and how do you keep it from checking, cracking, and splitting? The answers for woodturners are not easy. Unlike other woodworkers, turners usually start with freshly cut wood. In contrast to cabinetry and carpentry, larger, thicker pieces of wood are necessary for turning. Most kiln-dried wood in lumber yards is not the size or species desired. Trees with flaws, crotches, and burls and hard-to-find varieties are usually relegated to the firewood pile, but these are the most valuable for woodturning because of the unusual color or grain patterns. To purchase exotic woods from distant lands is very expensive and except for an occasional special project unnecessary.



"Castle," 8" dia., cherry burl from the upper peninsula of Michigan. It was turned green, incorporating the natural edge of the burl.

Trees are coming down all around, everyday, if you keep your eyes and ears (listen for the chainsaws) open. New roads and homes are always underway; electric, cable, and telephone companies are expanding service. City and local government workers are trimming and thinning damaged or diseased trees. Most of this wood is on its way to the fire pit or landfill. That's just what you want: wood that others are discarding and glad to give away for the asking. It's the greatest to turn!

"Seascape," 12" dia., beech crotch. The tree was cut down during a business expansion. The wood was turned green, left thick, dried, and turned again.

So you have found this great curly maple tree the city has cut down and they would love for you to haul some of it away for them. Now how do you handle it? Wood handling is a vital factor in turning successfully.

There are three ways to handle wood for turning. First, you could take it home and turn it green. Second, you could partially turn it and set it aside to dry slowly for returning to a final piece at a later time. Third, you could allow the block to dry completely before turning. Now let's explore these options.

Green turning works well because the wood turns much easier when wet. Shavings flow off your tool like butter. As with most turning, it is important to use very sharp tools. A

Left, maple burl, 10″ high, from wood salvaged during the clearing for a new subdivision. It was turned green, all in one session. Above, Russian olive, 6″ dia., from firewood. The pith is included and the resultant checks are filled with brass shavings and cyanoacrylate glue.

dull tool on wet wood will tear or fuzz the end grain. When turning green wood you must be able to live with and even enjoy the fact that your finished turning will change shape as it drys. So the round bowl will become slightly oval, because as moisture leaves the wood, it shrinks more across the grain than along the grain. Very attractive effects can be achieved, especially when creating a natural-edged piece, such as the piece I made from cherry burl, pictured at the top of the facing page. The grain also shrinks inconsistently, leaving a pebbled effect to the piece. Shrinkage also accentuates a defect or knot, because it drys differently than the surrounding wood.

There are dangers or drawbacks to turning green. Shape is restricted somewhat, for example, "Seascape" made from a beech crotch had to be turned from dry wood (see photo, facing page). To capture the feathering grain of the crotch a shallow finished form was called for. Turned green, it would surely have warped and ended up significantly oval in shape. The warping of a shallow form is not usually desirable in a plate, platter, or shallow bowl. It distracts from the smooth flow of the flat surface. Using green wood for deep hollow turnings has less effect on the overall shapes, yet gives each piece a personality of its own. The photo above left shows an example of a tall, deep, hollow turning that was turned green and allowed to dry afterwards.

Another danger in working with green wood is cracking and checking. The key to avoiding this (no guarantee) is to turn it fairly thin and by all means uniformly so, especially the bottom of a bowl. A uniform thickness will allow the wood to give a little and warp without cracking. Thick areas will dry more slowly than thin, creating stresses that can break the piece apart.

Also, when planning the orientation of your work from the block of wood, always remove the pith. The pith is very unstable and will surely crack, even if turned thin. It will also bulge out of shape as it dries. Some turners have used the pith and accentuated the cracks, filling them with a contrasting wood-dust and cyanoacrylate glue. The Russian olive piece, above, was turned green with the pith right in the center of the wall. It was inspired by James Poppell's Treaty Oak work demonstrated at the last year's AAW Symposium in Colorado. I inlaid the brass shavings in the carved shape of a cedar bough to conceal the pith cracks. This looks very attractive, but the pith will always cause problems when turning green wood. Unless you want the challenge, it is best to cut it out before you turn.

Now, you can't turn all the newly acquired wood all at once. So let's explore a second option for creating

Beech, 11" dia., from wood salvaged from the clearing for a subdivision. The wood was rough-turned green, dried, and re-turned to final shape and thickness when dry.

great turnings without cracks and checks.

Mount your turning blank green. This mounting takes no special handling; you could use any chuck or you could glue the green blank to a scrap block with cyanoacrylate, then screw that scrap block to your faceplate. (Green wood will hold just fine.) Turn the wood roughly to your desired shape, but this time leave a thick wall and bottom, $^3/_4$ to 1 inch thick. Still, try to maintain a uniform wall thickness. Take the blank from the lathe and remove the glue block or chuck.

Now it has to dry *slowly*. If the piece dries too quickly, the wood at the surfaces will want to shrink while the wood in the center of the walls will remain the same size. The tension will be relieved by cracking or checking of the surface. You must retard the drying so that moisture from the center of the walls can migrate to the surface, allowing the wood to dry and shrink uniformly. Using paste wax helps clog the wood pores and slows down drying, but that's usually not enough. Some turners use paper bags, others use plastic bags, turning the bag inside out every day or so to control the release of moisture. A favorite trick of many is to use the recently turned wet shavings from the turning. Sweep them up immediately, while they are still wet and put them in a cardboard box stuffed all around and inside the thick-turned piece. Close the box up and store for a few months. This allows the shavings and turned object to dry very slowly.

The trick is to find the right drying rate. If kept too wet, the wood will mold, but if dried too fast, it will crack. Check it now and then. When the shavings are completely dry, take the turned piece out into the air and let it dry a little longer, exposed, maybe another month or two. Now when it has air-dried completely, it is ready to re-mount and turn to the finished wall thickness. Note: do not leave the old glue block on and try to re-mount as you did when the wood was green. The shrinking green wood will weaken the glue joint and it will break off easily. Mount a new glue block to your dried piece. In most cases you will be turning an oval shaped dry piece back to round. The beech piece pictured above was warped too far out of round to turn and keep it the original diameter. An interesting effect was created by leaving the outside warped and turning the center with a shadow-edge lip and smooth, flat bottom. The underside was left warped with an elevated foot. This piece required hand sanding and finishing off of the lathe, but the results were worth the extra effort.

The third option is to try to dry the entire log or turning blank. This takes a long time (about one year per inch of thickness) and very often the large piece will check and crack as it dries. Cut the tree in lengths a little longer than you plan to use. It is best to split or saw the log lengthwise with the grain. This accomplishes two things: it puts the pith on the outside edge of your workpiece so there is little waste to discard, and it relieves some of the stress created as the wood shrinks in drying. This will help prevent the deep cracks that ruin a piece for turning. Next, seal up the end grain with a wax-based liquid sealer (available from Craft Supplies USA, 800/551-8876). This will slow the drying so that you can store the wood long enough to get back and use option one or two above, if you decide not to wait for it to dry.

If you've experienced cracking problems, perhaps these tips will encourage you to give it another try.

Lyle Jamieson, president of the Northwest Michigan Woodturners, has been turning since he was sixteen years old.

MINI-KILN

Dry your stock and avoid cracking

ROBERT ROSAND

OVER THE YEARS, I HAVE HAD MY share of projects cracking and warping because of high moisture content. If you look at the mitered joints on my kitchen cabinets, you will see that they have shrunk a bit. They function, but they are a testament to my carelessness and lack of knowledge in the past. I've also had a number of pens crack along their entire length, as well as a few very labor-intensive laminated pieces that now may grace only my own shelves. Trashing pen blanks and laminated work is not my idea of fun. I had to figure out how to avoid drying-related damage.

My solution was twofold. First, rather than guessing about moisture content, I purchased a moisture meter. Craft Supplies, Woodcraft, and others sell them for around $100. I no longer work with pen blanks or laminate segments with a moisture content higher than 6 percent. The second part of my solution was to build a drying unit. Before doing this I read old copies of *Fine Woodworking* and R. Bruce Hoadley's book, *Understanding Wood.* The concepts were helpful, but their application dealt mainly with larger commercial units, calling for dry bulbs, wet bulbs, heating coils, ventilators and so on, all to ensure that relatively large pieces of wood would not dry unevenly. All I wanted was to dry little bits of wood! I wanted something cheap, effective, and simple.

The unit I came up with consists of a box in which to dry the wood, a clip-on 7-inch fan, a heating source (two light bulbs), some old shelves from a refrigerator, a thermometer, and a humidistat (which I never pay attention to). In an earlier version I used a dehumidifier, but found that it increased the temperature far above what I desired and did not help to dry the wood any better or faster.

The drying chamber is nothing more than 2-inch rigid insulation board glued together with construction adhesive (Liquid Nails) and some old pieces of $^3/_4$-inch pine. It measures about 3 feet long by $2^1/_2$ feet high by about 2 feet deep. I used the rigid insulation board because I was building my house at the time and had some extra on hand. If I had had batt insulation and old 2×4s, I would have used that. The point is to improvise. You could probably use an old styrofoam cooler if you needed to dry only pen stock.

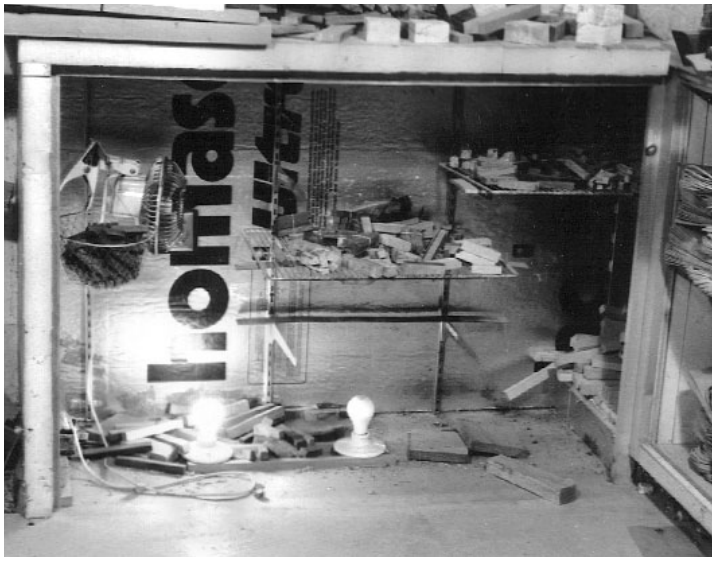
For a heat source, I rigged two porcelain light fixtures in the drying unit. You may use two 60-watt bulbs or a 60 and a 40 or two 40s, depending on how warm you want the air to be. Mine stays between 90 and 100 degrees. Coincidentally, on page 104 of *Understanding Wood* Hoadley discusses a small drying chamber with a temperature of 92 degrees. In an environment like my shop's (68 degrees and 65 percent RH) this increase drops the relative humidity to 30 percent and yields an equilibrium moisture content for wood of about 6 percent. By dumb luck, I had hit on the proper formula. You could add a thermostat that would turn the bulbs on and off to maintain a constant temperature, but my unit seems to self-regulate—heat loss through the insulation balances the heat generated by the bulbs.

The shelving is nothing more than the adjustable units you can purchase at any hardware store with old refrigerator shelves placed on them. An alternative method might be to use stiff wire cloth or hanging wire baskets. The important thing here is not to impede air flow.

Finally, I use a small "personal fan" to circulate the air. This can be either the free-standing or clip-on style.

I used to spot-check the moisture content of the stock every few days, but now I just leave the thing alone until I need some wood. I check each piece for 6 percent moisture content before using it.

This drying unit cost me a total of about $10. It is very effective for drying pen stock, stock for laminations, or anything that fits into the unit. It dries my wood and allows me to concentrate on turning.



Author's drying chamber (the front panel removed) is ideal for small stock such as pen blanks and lamination segments.

Bob Rosand is a production turner in Bloomsburg, PA

SPINDLES FROM ROTARY PLANES

Almost traditional English country chairmaking

JACK HILL

"DEEP IN THE QUIET OF A WOOD, on a crisp December morning, the sound of a chairmaker's axe cleaving logs heralds the beginning of a chair which by next winter will seat someone by a bright warm fireside. With care and good fortune it will last for a century and more, its wood mellowing with age and polish, the figure of its grain continuing to tell of its living, woodland days. It is this sense of continuity, from the growing tree out there among last year's fallen leaves, through the shaping and assembly of individual pieces to make a whole, a finished, functional yet beautiful piece of furniture, which brings to chair making such a feeling of satisfaction and close involvement with the trees than with most other forms of wood working."

My interest in chairmaking arose out of a wider interest in the countryside and in country woodcrafts in general. The opening paragraph above began the chapter on chair making in my first book, *Practical Country Crafts,* published in 1979. I chose to make chairs because of the challenge that they present; to many woodworkers chairmaking is a complicated business—all those compound angles, curved components, awkward joints, and little that is square in cabinetmakers' terms. And I was, and still am, intrigued by the engineering aspects of chairmaking; no other domestic article of wood is subjected to the stresses and strains that the average chair endures throughout its life. And successful chairmaking is primarily dependent upon correct choice of material, its proper conversion, and upon honest and sound construction.

The chairs I make are "country" in origin; they hark back to the sturdy yet often elegant chairs made by hand by woodland and village craftsmen on both sides of the Atlantic from the late 18th to the early 20th century. In my work I follow mainly traditional methods, rationally augmenting these with modern means to save time and effort only when this does not debase the finished article.

Ladderback chair, its round components (except for the front rail) made with rounders.

The earliest country chairmakers were mostly rural woodturners who developed their methods out of other, existing woodland crafts. Paramount to this was their use of mature and coppiced wood (that is, from periodically harvested stands) and their way of working it green, first by splitting it (cleaving) along the grain, then by rough-shaping with the hewing axe and drawknife, and finally by turning, usually on a pole lathe. Green wood cleaves readily and turns easily, and its use here exemplifies the view of these early workers toward economy of effort.

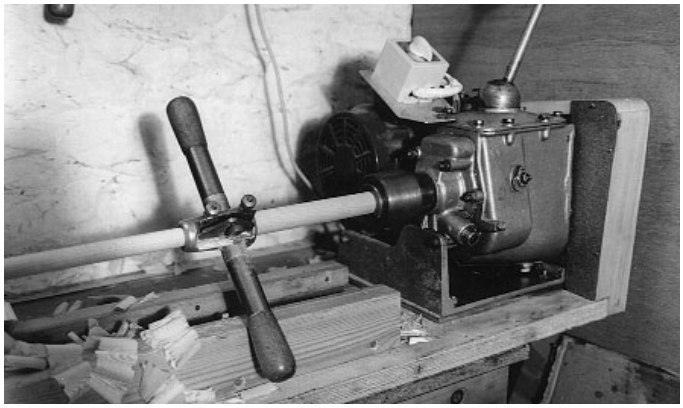
Few early chairs remain today, and those that do are comparatively crude. In due course, however, makers refined their methods and learned how to make chairs that stayed together, the individual components in opposition and in unison, under tension or compression, contributing to the overall strength and stability of the whole. I unashamedly emulate these old ways of working and with one exception have never seen reason to do things differently.

I choose ash (*Fraxinus excelsior*) as the most suitable wood for chair components on account of its strength and resilience and for its good bending properties. I use elm (*Ulmus procera*) for Windsor chair seats. I continue to cleave most of my material while it is green, and I rough-shape with the drawknife while sitting astride the ever-useful shaving horse. By cleaving and not sawing, the fibrous strength of the wood is retained in even the most slender components. Furthermore, the reduction in physical effort when working green wood has to be experienced to be appreciated.

But I don't turn on a pole lathe. I have done so in the past and I still have one which I can set up for demonstrations. Instead, I work with two electrically powered machines; one a more-or-less conventional lathe using the usual woodturning tools, the other a homemade device utilizing a small automobile transmission with which I use some rather unconventional tools. This last arrangement is my contribution to the idea of economy of effort.

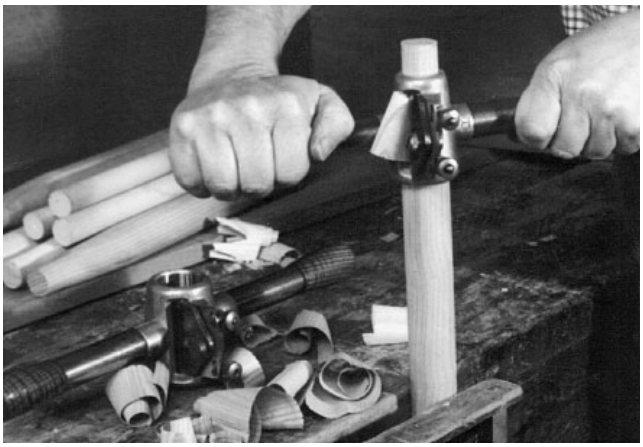
I won't bore you with a blow-by-blow account of my more-or-less conventional lathe turning except to say that I use a short-bed machine with a tailstock, which takes about 20 inches between centers, and that I have a tool rest of the same length.

Tapering tool (left), and a set of chairmakers rounders.



The rounding machine, powered through an automobile transmission, with (normally) hand-held rounder in place.

Author uses the tapering tool to shape a back spindle.



The rounder accurately sizes a chair-spindle tenon.

I use this machine primarily for hand-turning legs for Windsor chairs. I turn overall shapes, following largely traditional styles, to finished size, but I leave tenon areas oversize to be accurately reduced later. I stack green-turned legs to dry thoroughly before use; those made from seasoned material can be used immediately.

The homemade device, which I call a rounding machine, consists of a four-speed gear box from a small car, belt-driven from a $^3/_4$-hp electric motor. This is mounted on a cast aluminum cradle and a wooden bedway. Its purpose is to provide easily variable and reversible low speeds at high torque. The speeds range from 100 to 350 rpm in four steps, quickly selected by means of the gear shift; reverse at each step is obtained by electrically reversing the motor.

I use this machine to make components for post-and-rung chairs and also the stretchers and slender back sticks for Windsor chairs. With it I use the specialist tools known as rotary planes, or more simply, "rounders." These tools were developed by the man with whom I served my second apprenticeship, the late Fred Lambert, a one-time college lecturer in Worcester, England. Fred based his ideas for these tools on the old-style wooden rounders, simple hand-held devices used in a number of rural woodland crafts to make handles for all manner of tools and farm implements, the rungs for wooden ladders, spokes for cart wheels, and so on. He developed a series of tools in different sizes made in cast aluminum and brass. They make it easy to consistently produce accurately sized spindles in several diameters and of almost any length. Another tool based on a similar principle adjusts to produce infinite tapers from the rounders' produce, ideal for chair rungs and spindles. The rounders also accurately size the tenons which are so much a part of country chairmaking. They can be used entirely by hand if required, without the rounding machine. And the tools leave a good, smooth finish, reducing and even eliminating the need for abrasives.

I use these tools, and I teach courses in their use because, for me, they solve all the problems associated with turning long and relatively thin components between centers on a conventional lathe. In combination with accurately drilled sockets they are excellent for making well-fitting tenons without all that stopping and checking and starting again—important concerns in making chair work both economic and enjoyable.

Jack Hill, of Sussex, England, has been working wood and teaching and writing about it for many years. He will demonstrate the tools and techniques described here and offer a slide show on the English chairmaking tradition at July's AAW Symposium at UC Davis.

WAYS TO HAVE A BALL

Turning, decorating, and hollowing spheres

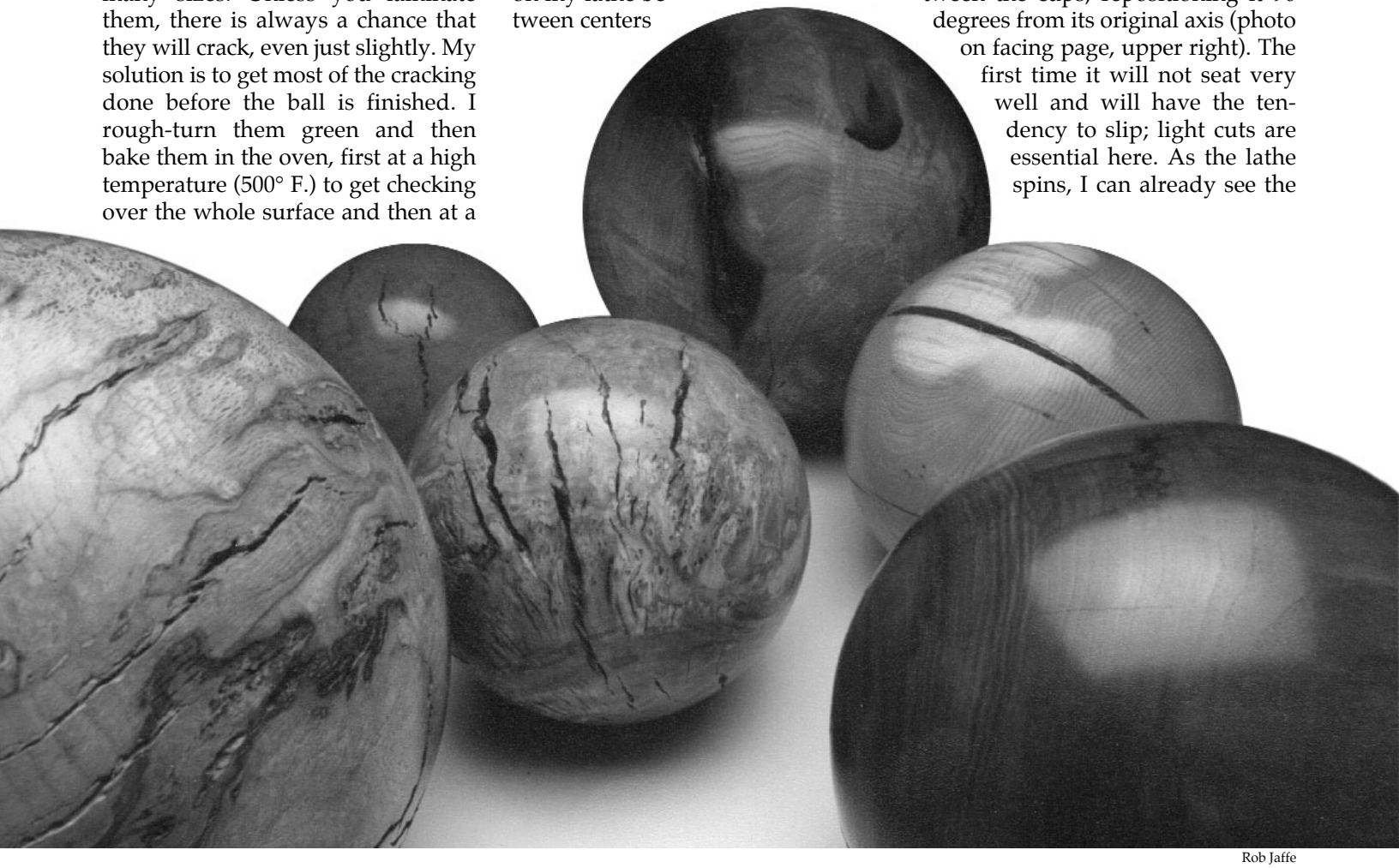
CHRISTIAN BURCHARD

SOMETHING ABOUT BALLS SEEMS TO make them universally fascinating. After all, we live on one, we encounter them night and day whenever we look up at the sky, we play with them, we see the world through them. Wooden balls have been used for ages in games and as toys. Just to hold a wooden ball made from beautiful wood with lots of character evokes a smile in many people.

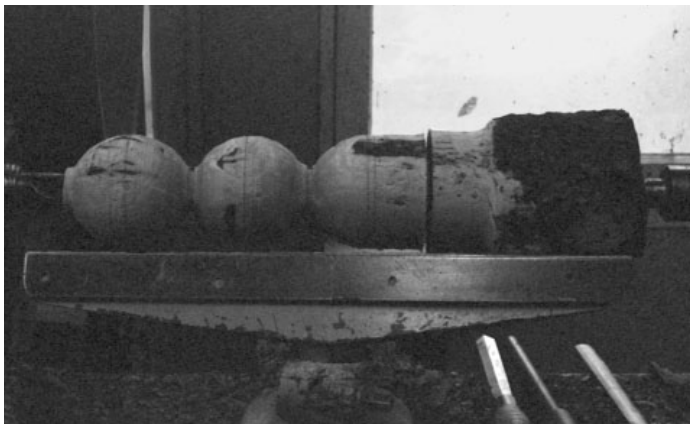
I got hooked on balls a few years back with an order for a rosewood sphere from a customer who was collecting Italian stone balls. He wanted them perfect. They cracked. I have made hundreds since then in many sizes. Unless you laminate them, there is always a chance that they will crack, even just slightly. My solution is to get most of the cracking done before the ball is finished. I rough-turn them green and then bake them in the oven, first at a high temperature (500° F.) to get checking over the whole surface and then at a lower temperature (150° F.) to dry them out thoroughly. Then I leave them out in the sun for a few months before final turning. Should they crack a bit more later on, you wouldn't notice. Beginning with a piece of dry wood, of course, can be interesting, too, especially if the heart is in it.

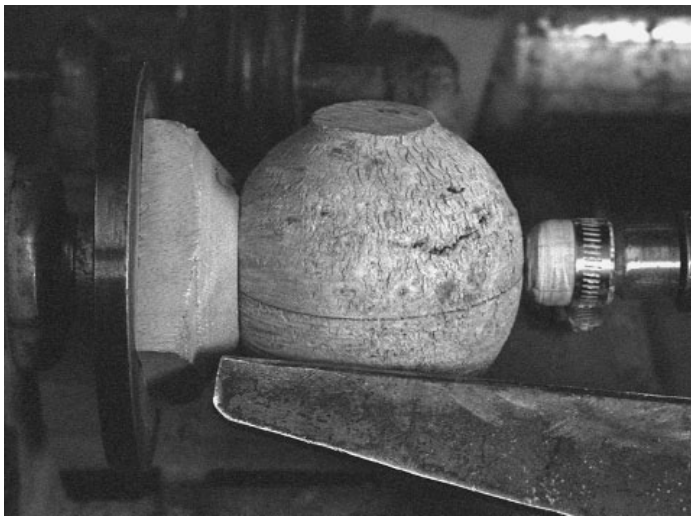
Sometimes I rough out lots of balls along the length of a single spindle between centers, approximating each shape by eye as close as I can (photo on facing page, upper left). I separate the spheres on the bandsaw using a V-shaped carriage. After drying them, I remount them on my lathe between centers as follows: I turn a cup into the end-grain of a block of hardwood, about half the diameter of the ball itself—too small a cup will not give enough support, too large a cup will not give enough turning space. Then I take a 1½-inch piece of 1¼-inch dowel stock, drill a ½-inch-deep hole in one end, the same diameter as my live center, and turn a shallow cup into the other end. Some strong packing tape or a hose clamp (watch your fingers) will keep it from splitting apart. I slip this over my live center and now have two cups that can hold a sphere between them.

I place the roughly turned ball between the cups, repositioning it 90 degrees from its original axis (photo on facing page, upper right). The first time it will not seat very well and will have the tendency to slip; light cuts are essential here. As the lathe spins, I can already see the



Rob Jaffe





Spheres can be roughed out in a series along a spindle, above, which is then bandsawn apart. Each individual sphere is then turned between wooden cup centers, right.

outlines of the ball. The shadow indicates the material to be removed. I use a gouge to do this, taking a combination of scraping and shearing cuts, as I encounter all possible grain directions. When the shape looks about right, I run my finger over the surface to tell me whether there are any rough spots left. Then I draw a pencil line right in the center. I rotate the ball another 90 degrees and continue. A sphere can be said to have three axes, and it needs to be turned over and over again on these axes until it is totally round. Some balls get there surprisingly quickly; others seem to resist forever.

To help seat the ball firmly, I rotate it by hand between the two cups before turning the lathe on. Sometimes I give the spinning ball a few light whacks with the tool handle. Just a little sawdust between cup and ball can throw the ball out of round.

To finish the ball, I start sanding with 80 grit sanding disks and progress up to 400 grit. I apply a light coat of oil and then buff with various compounds, finishing with some carnauba wax on a felt wheel.

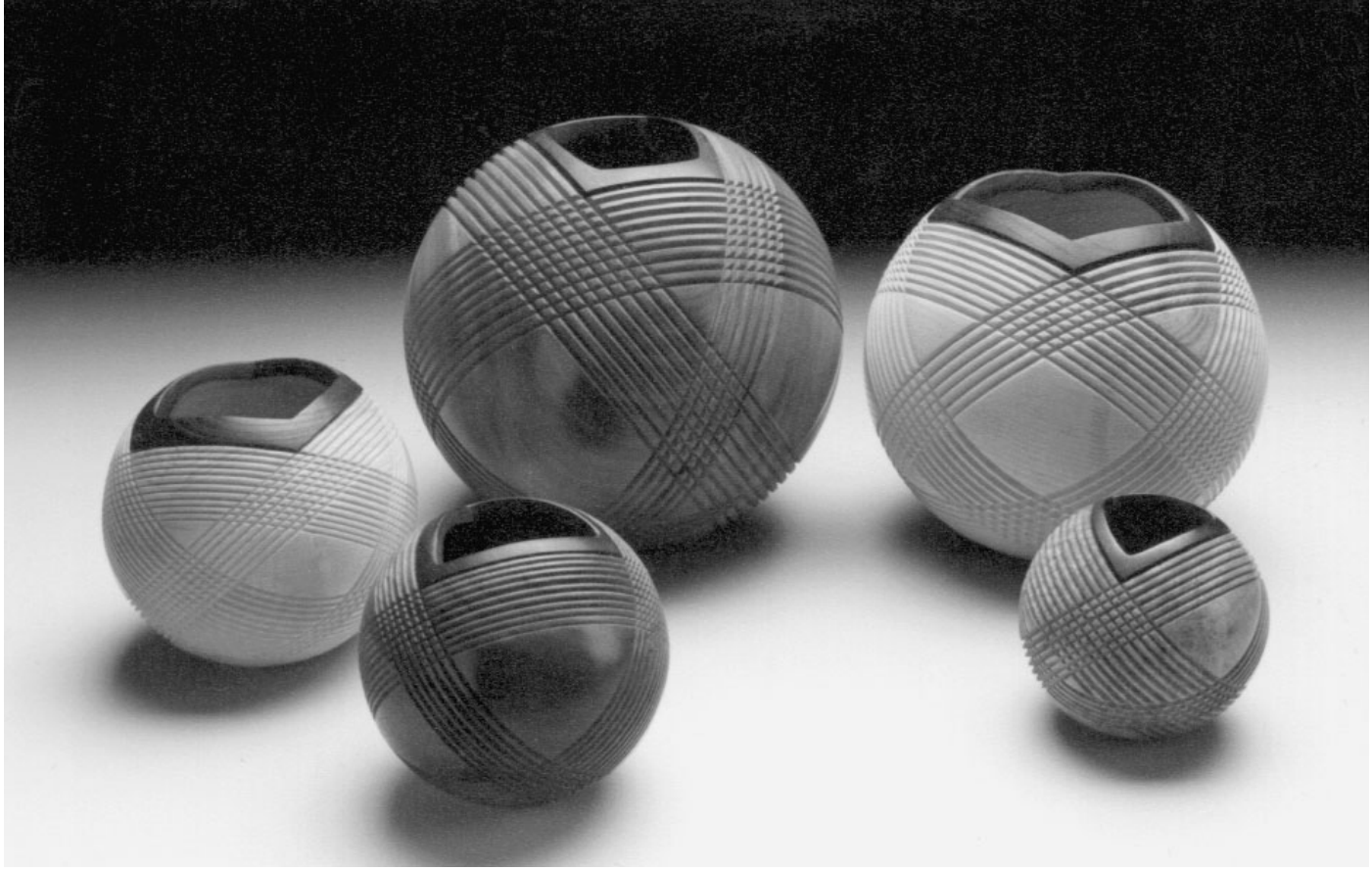
After making a few of these, I felt that there was a lot more that the sphere shape had to offer. One possibility is to offset the cup on the faceplate. That gets exciting! After all, the ball is held there only by pressure. The other interesting thing about the spheres is that they can be placed every which way into a jam chuck. Each position can offer a new angle of approach to texturing or hollowing. And of course that jam chuck can be mounted off center again.

I've postponed exploring the off-center stuff, and have come up with the following process: I place the finished ball—this one dry, with no cracks at all, and unsanded so as not to bring it out of round even slightly—between the cups. With a pencil I lay out four intersecting bands of grooves so that they would outline a square opening. Should the ball be just a little off center, which would result in uneven grooves, I can tap the cup lightly to center the ball. I cut these grooves with the skew; a spearpoint cutter, though stronger, results in too rough a surface. I stay with an even depth and spacing and then change the axis to make another band. Where these grooves intersect, a fine diamond pattern is created, as found on Italian bocce balls (photo below). The cuts have to be made slowly and gently so as not to damage this pattern. It's hard on the long point of the skew, and it needs frequent honing. In some woods the tip will burn right off.

To hollow the ball, I prepare a jam chuck made from green waste-wood. The moisture helps to hold the ball firmly (photo at bottom of next page). After the block is screwed to the lathe and trued, I turn a hollow into the wood a little smaller in diameter than that of the ball and a little deeper than half the ball's diameter. With the help of a rubber mallet (so as not to damage the patterned surface) I pound the ball into

For decoration, the author lays out sets of grooves, repositioning the blank between the cup centers to cut them with a skew.

Rob Jaffe



Author's "Old Earth Series" in mahogany, ash, koa, and maple burl turns balls into vessels, 4" to 7" in diameter.

the chuck. It takes a little adjusting until it seats firmly; the ball will disappear about halfway into the chuck. I make sure that the grooves are aligned correctly, so that the opening will be centered in them. Using various tools, I hollow the ball. My grooves are mostly about ¼ inch deep, so I leave the walls about ½ inch thick, a little thicker on the bottom, where I will flatten it. Of course I can't use calipers to measure the thickness in the bottom half of the ball, so here I have to go by eye and feel. I make sure that the opening is large enough to allow me to sand the inside with sanding disks. Before I remove the ball, I draw a line on the outside of the ball where it meets the jam chuck as an index for repositioning the ball to turn off the bottom. With a few careful taps from the mallet I remove the ball from the jam chuck, turn it around, and tap it back in. I then turn a small hollow into the bottom for it to sit on. After removing the ball from the chuck, I use a jigsaw to cut a square opening parallel to the grooves. A file and some sandpaper cleans the grooves and the opening, which I then dye black with ink for visual contrast. I sand the surface, taking great care over the grooves. After a couple of coats of finish, I buff the entire surface, without removing the dye.

A jam chuck half the diameter of the sphere allows it to be hollowed.

I have called these pieces the "Old Earth Series" in reverence of our planet, but also because they remind me of old earthen vessels from various cultures.

Christian Burchard turns balls, bowls, and sculptural forms in Ashland, OR. He will be a featured demonstrator at July's AAW Symposium at UC Davis.

Sculptural Bowls

Working on making them work

BRUCE MITCHELL

I HAD MY FIRST EXPERIENCE IN MAKING vessels out of wood in 1969 when I went to work as a technical assistant for the sculptor J.B. Blunk. He frequently included bowl forms in his environmental sculptures, tables, and other commissions I worked on. Many of those pieces were made from large redwood burls in which the natural edges were used as a counterpoint to surfaces that were cut, sanded, and polished. I learned how to use chainsaws, chisels, rasps, and power-sanding machines in the fabrication of those works. As I became more confident with the technical aspects of the work, I acquired a better sense of how Blunk balanced the abstract sculptural elements he created with the organic qualities of the material. That experience helped establish the basis of my own design aesthetic and has been an important influence on the sculptural, lathe-turned vessels I've been making for the last fifteen years.

During the eight years I worked for Blunk I began carving my own bowls and trays by hand. It was incredibly tedious and time-consuming work that taught me a lot about patience and sore knuckles. The results were satisfying enough, but I rarely made more than a maintenance wage when I sold the work at local craft fairs. In 1977 I started teaching myself how to use the lathe as a more efficient means of production and a more practical way of earning a livelihood. I also hoped to discover how to use my background in sculpture to expand on the repertoire of concentric shapes that I was making on the lathe.

Of all the different objects I make both on and off the lathe, the turned and carved bowls are perhaps the most rewarding. Whether functional, decorative, or both they allow me to explore and develop ideas, dreams, and fantasies for their own sake, without the constraints of arbitrary rules. I love how the interplay of line, surface, pattern, and color can animate a sculptural form.

Before I cut a bowl blank out of a log or burl, I try to visualize a form within the raw material that will take advantage of the most dramatic surface features. There's always a surprise or two in how the blank looks after cutting it out that I will factor into the design equation. It's especially gratifying if my chainsaw doesn't hit a dirt pocket or a nice, juicy rock along the way.

In addition to simply making things round, the lathe has become a very convenient holding device that, with the machine shut down, lets me secure the work at any point along its circumference when doing carving or sanding of any kind. Even though the nature of the process allows me great flexibility in the overall design, these pieces are a challenge for me to pull off because the proportions of the turned and carved elements, the use of natural surfaces, and any applied textures must work not only with the shape and dimensions of the bowl but with each other.

To illustrate what I try to accomplish from an aesthetic and technical perspective I'm going to describe the development of four pieces that were made during the last two years. I've included two pieces that in retrospect seem less than completely successful. Critiquing your own work is essential to further progress.

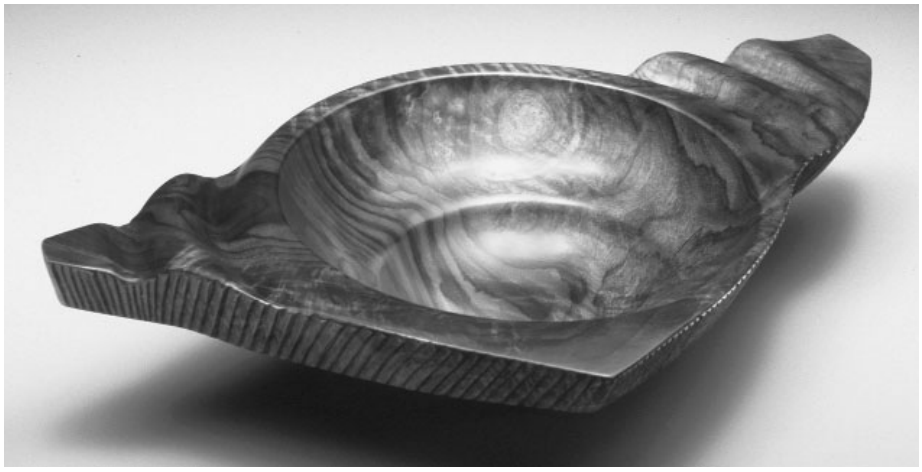
The first is a redwood burl bowl I made in 1993 (photo below) that is approximately 17 inches wide with a smaller, deep central hollow. I like this format because the concentric shape of the lower bowl has a stillness that emphasizes the carved areas above it, like a frame sets off a painting. It gives the piece a nice looking waistline too. I trued up the outside of the blank about a third of the way up and then flared the upper section. I turned the interior to

Redwood burl bowl, 17" wide.

Author shaping with a Lancelot disk.

mimic the exterior silhouette leaving about $1\frac{1}{2}$-inches of wall thickness to give me plenty of latitude with the carving. Natural edges can sometimes interrupt the flow of a line or contour that I want to achieve, so I prefer to incorporate them into a piece when they're appropriate to the design. In this case, there were only two areas of natural edge left after roughing out the blank, so I decided to highlight them at the apex of the wing-like shapes that unfurl along the back. I did all the carving on this bowl with an electric chainsaw (with the lathe spindle locked). I used a 7-inch disk grinder to smooth the planes and contours and power-sanded the piece with 5-inch rubber and foam-backed pads going from 36 to 320 grit. When I attempted to cut the flutes around the exterior with a V-gouge, the burl's soft and chaotic grain structure tended to tear out. So I used the edge of a stiff, 5-inch foam pad with a 150-grit disk chucked in a variable-speed drill. Running the drill at about 200 rpm let me control the cutting of the flutes without overheating the abrasive and scorching the wood. I used the vertical orientation of the flutes to create a strong textural contrast between the upper and lower sections of the piece. This helped to emphasize the flower-like shape of the bowl and suggested an illusion of weightlessness.

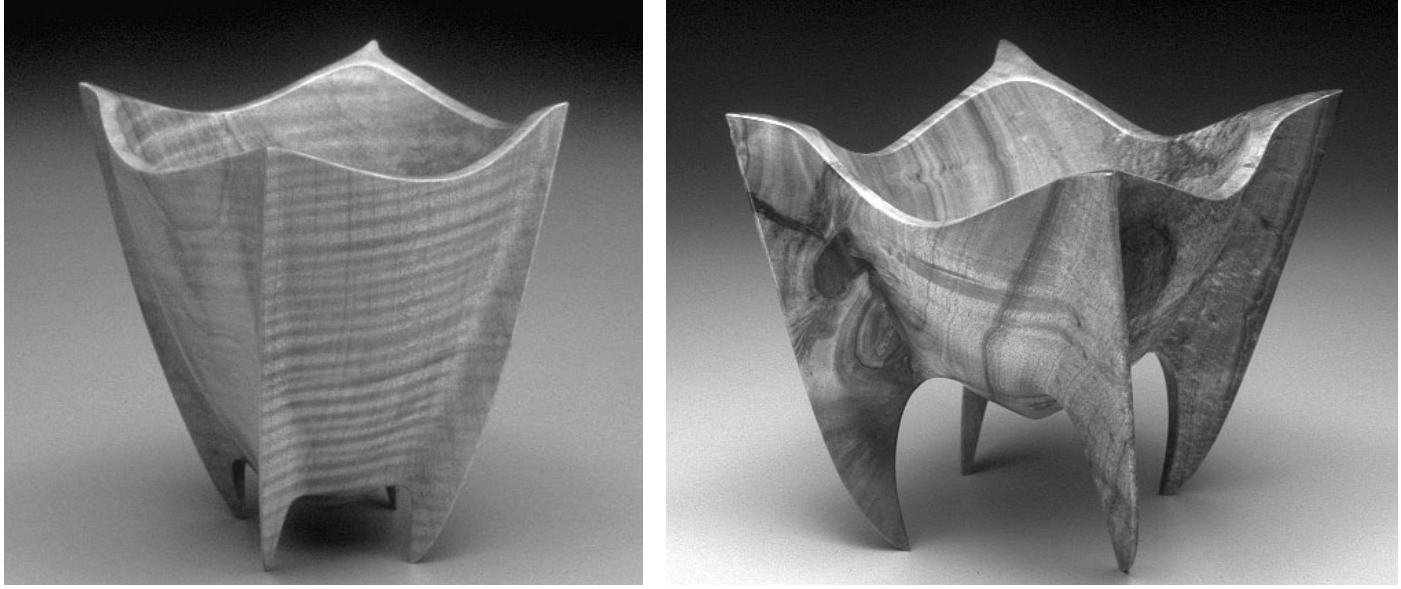
The second piece (photo below) is made of black walnut and is approximately 21 inches wide and about 4 inches high. Because I usually cut the blanks for my sculptural vessels much thicker, dealing with this relatively flat, triangular chunk had me stumped for a week or so. There was a jury deadline coming up for this piece so I finally just put it on the lathe and cut out two experimental grooves on the perimeter to see what would happen. The shape of the grooves reminded me of the concentric ripples that form when a stone is thrown into a lake, so I turned a two-tiered bowl in the middle of the piece to mimic that image and repeat the rippling pattern from one side of the form to the other. The tiered bowls in the middle of the piece act as a visual anchor for the grooved, wing-like forms at either end. If I had been more impulsive and trued up the face of the blank without stopping to see the results of those first, exploratory cuts, I would have missed the opportunity to discover a design solution that took advantage of such an unusually shaped piece of wood. I added a series of flutes around the outside perimeter with a grinder-mounted chainsaw disk (a Lancelot disk) to give the piece a feeling of greater height.



Black walnut bowl, 21" wide.

As satisfying as it was to come up with an interesting idea for this piece, I found a weak link in the design that keeps it from being a total success. The rim of the upper bowl in the middle of the piece is too narrow where it curves along the back side. If I had made the rim at least twice as wide, it would have had the right scale and all the elements of the piece would have coincided into a more unified whole. Even if experimental forms like this don't meet with commercial success, they often provide important technical and inspirational groundwork that can be vital to the success of future pieces.

The third piece (photo facing page, upper left) is from a group of vessels entitled "Fin Spin." With forms like this that are part of an evolving series, the process becomes more streamlined with each piece so I can focus on refining details and assessing the results of design experiments from one piece to the next. This seventh piece in the series was made of western maple in March 1994 and stands about 7 inches high. To make one of these, I turn a recess on the bottom of the blank and then reverse it on the faceplate to rough out the interior. When it's cured, I finish-turn and sand the recessed bottom by fastening it to a clamping jig similar to one Tom Jesionowski illustrated last year in this journal (June 1994, page 35). Prior to finishing the interior, I glue the bottom to a waste block before attaching it to



The seventh and fifteenth pieces in the author's "Fin Spin" series: left, Western maple, 7" high; right, black acacia, 11" high.

the faceplate. Then I can remove the excess material from between the fins with the power-carving disk and not risk the unpleasant experience of carving into the faceplate. On a small piece like this I remove the bulk of the material from between the fins with a $^3/_4$-inch round carbide cutter mounted in a die-grinder. I then power-sand using a combination of 2-, 3-, and 5-inch foam-backed disks and finish off the contours and edges with orbital- and hand-sanding.

One of the images that I've wanted to bring to life in this form is of a playful dervish twirling around a ballroom. But this piece was made early in the series and I didn't have enough experience with the process or the form to fully manifest that character in its personality. The fins would have been a much stronger feature if they stood out more from the body of the vessel. The curving arcs cut between the tops of the fins aren't deep enough to really set them off. And the shortness of the fins below the bottom of the vessel makes it look kind of squat and pinched. Even though this piece didn't achieve the ideal of simplicity and delicate strength I was looking for, it gave me some essential design information to digest for subsequent pieces in the series.

The last piece, "Fin Spin #15" (photo above right), was made in October 1994 from black acacia and is approximately 11 inches tall. This Fin Spin is a real study in contrast to the one in maple. The dimensions of the fins are much more balanced with the proportions of the vessel, giving it the whimsical feeling I wanted and a dynamic sense of movement that makes it come alive. At this point I've become fluent enough with the technical stuff to incorporate any relevant design changes that have been suggested by earlier pieces in the series. One of the important discoveries I made along the way was that by cutting the blank square, I have plenty of material at the corners for making the fins as prominent as necessary. Having four corners to work from also simplifies laying out the fin locations prior to carving.

Despite all the shortcuts I've come up with, there's still a lot of tedious grunt work. For example, the black acacia used in this piece was so hard and abrasive that it took the better part of three days to do the final turning, power-carving, and sanding to finish the piece.

Having fun is the most important part of what I do. But as much as I love to play with material and experiment with forms, I have to produce work that will sell in a variety of venues to pay the bills. So in addition to assessing the aesthetic virtues of a piece as it evolves on the lathe or carving bench, I need to evaluate its commercial potential as well. Pricing the work is difficult enough, but attaining the necessary detachment to perform an honest self-critique is something else, especially when my ego wants to get in the way. Nonetheless, when I ask myself if a piece is really good enough for me to want to buy it, I'm attempting to see the work from the more objective perspective of a collector who won't have the same emotional attachments to the work that I do.

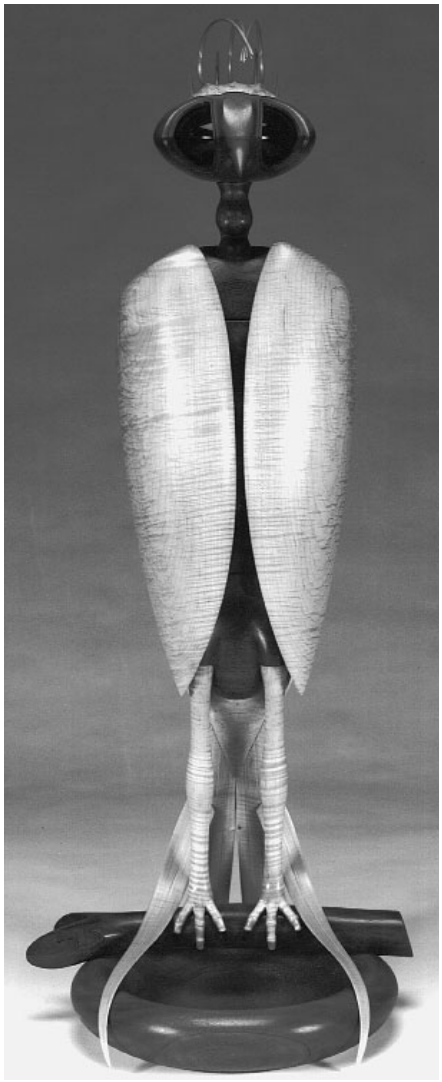
Occasionally, the answers to that question return from galleries and exhibitions to decorate the shelves in my studio and serve as a reminder that there's nothing quite like feedback from the marketplace to see if my design theories have found a responsive audience. Some of those less-than-successful pieces can be given a new, and hopefully more productive identity with the help of a face-lift, while others find new homes at Christmas or whenever I have a studio sale. The few that just aren't good enough to leave the shop in the first place qualify for a flying lesson or get chucked in the wood stove (like Alan Stirt, I heat with wood, too).

I trust my intuition and experience to let me know when everything about a piece has reached a symbiotic balance. If I get lucky and sense when to stop working on a piece before going past the proverbial point of no return, it will have a good chance of being successful.

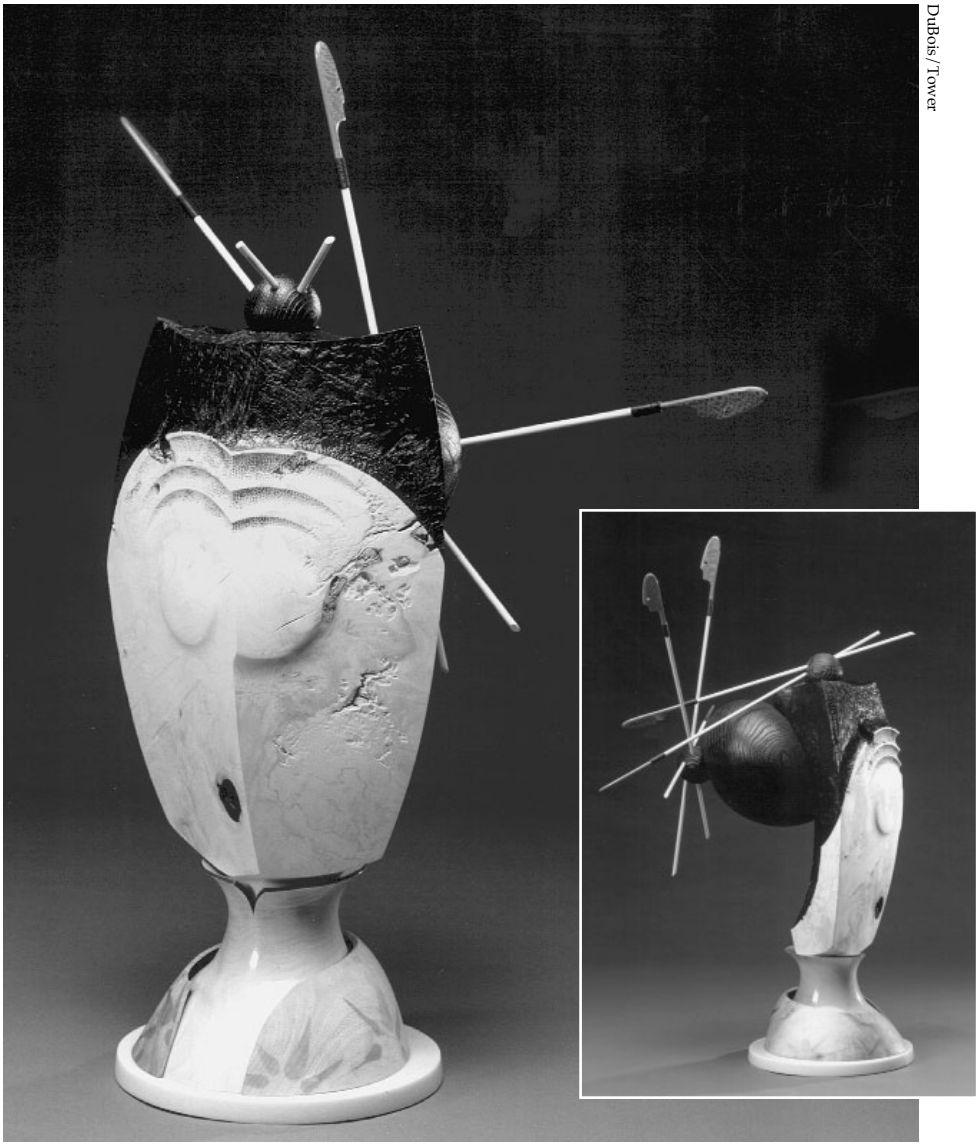
Bruce Mitchell turns sculptural forms in Point Reyes, CA. He will be a featured demonstrator at the AAW Symposium in July at UC Davis.

PHOTOS FROM THE MAILBAG

David Haas



DuBois/Tower



The piece above, "Composition in Black, White & Red: The Indiscretion" (the title is from a Whistler painting, which inspired the colors), is also known as "The Geisha." It utilizes a cast-aside, partially-turned form by Stoney Lamar, originally intended for his "Temple" series. It is 34" high and made of red maple, elm, pine, walnut, sycamore, with dowels, cord, Corian, and paint/dye/ink. The fun in working what I think of as found-object-art is to identify those marks, strokes, and approaches that are the unique signature of the individual. The challenge is then to create a composition that merges their forms with mine to create a seamless "logic" or intent.

—Steve Loar, Warsaw, NY

"Thinking of my Mother-in-law Mariane, and Those Magnificent Mahogany Breasts" is 57" tall and is made of mahogany, curly and bird's-eye maple, ebony, and cherry veneer; the hinges are from $^1/_4$-inch brass square stock. A drawer behind the eyes is turned to close tolerances, as is the five-ply mirror retainer in the hat. I enjoy having the piece around, but it was made on commission. Problem is, I've lost track of the clients!

—Michael Brolly, Hamburg, PA

We were awarded $500 for this collaboration, titled "☲" (after the Chinese I Ching symbol "Ken") in the Earth, Fire, Fibre XX exhibit at the Anchorage Museum of History and Art. It consists of a turned spruce bowl and three willow wands.

—Alma and Buz Blum, Palmer, AK

This was a three-way collaboration: April Wengren made the dragon's nest; Karen Roszel built the dragon's body, which is totally hand-beaded; and I turned the dragon egg, which, if truth be told, was sitting around not selling until we came up with this project. The whole thing is about $2\frac{1}{2}$ feet wide and about 2 feet tall.

—Robert Rosand, Bloomsburg, PA

I have been doing a lot of inlay with turquoise, malachite, coral, and silver on non-Indian shapes.

—Dave Kahn, Laramie, WY

This mahogany piece is 16" wide.

—Isaac Behar, Enterprise, AL

This jewelry box, 22" dia., is of sugar pine and Russian olive twigs, polychromed dark green on a copper base. It was part of a recent show of my work, *Private Visions,* at the San Bernardino University Art Gallery.

—Leo Doyle, Grand Terrace, CA

Ron Kent on Pricing Your Work

Ron Kent, just like the rest of us, loves turning wood. And (like the rest of us) he finds it difficult to set a price on his finished work. He wages a constant battle: wishful thinking vs. practicality; fantasy vs. reality; humility vs. egomania. If he likes a particular piece a lot, he hates to sell it at any realistic price.

In spite of these minor skirmishes, Ron does set prices and does sell his bowls. They sell well, priced from $500 to $4,000.

So, what's his secret? How does he decide on a price? Or, you may ask, how does he get away with the prices he finally decides upon?

If you're looking for a rigid formula, you won't get it here. Rather than formula, Ron is armed with a philosophy. And he is willing—actually eager—to share this philosophy with anyone willing to listen.

Of course, an awful lot of woodturners don't know who Ron is or why they should value his advice, so here are some particulars: Ron Kent, from Hawaii, has received recognition from the finest national and international museums; he makes a middle-executive income from turning 15 to 20 hours a week. He is known primarily for his translucent Norfolk pine pieces in a variety of silhouettes, and he will be a demonstrator at the upcoming AAW Symposium in Davis, CA (see p. 47). In his other life he is a successful stockbroker and financial consultant. Ron is not a good salesman. He hates selling, as such, and is always pleasantly surprised by the prices his work fetches.

About pricing your work, this is what Ron has to say. In a nutshell, it is his philosophy of pricing: "You assign each piece the lowest price at which you really don't care if no one buys it."

To apply Ron's rule, you must honestly decide what your work is worth to you. What is the price below which you wouldn't be comfortable letting it go? You will be assigning value to your finished piece as well as value to the time you spent making that piece. This is how you value the piece. Would someone else—a buyer—be willing to value the piece equally and buy it?

What does "value" mean to you? Does it mean the same to others? The dictionary defines value as "a fair or proper equivalent in money, commodities for something sold or exchanged." In Ron's argument, there are two items to assign value to: 1) your turning and 2) the money someone pays you to purchase it. Your job is to set the value on your turning regardless of how you value the money that will be paid for it. Don't worry about whether or not anyone could actually part with $1,000 (or more or less) for a turning. Let them decide. The truth is that they will value your turning at least as much as you value their money.

After you assign prices to your work and offer the pieces for sale you will begin to learn whether or not the value you have given your work is in line with how others value it. Remember—price your work at what it is worth to you. If you have priced your work at the lowest price at which you really don't care if it sells and it does sell, you'll be pleased.

What if your work does not sell? It won't sell if you have placed a value on it that is not what others are willing to value it at. You now have choices to make. Should you find another occupation and keep woodturning as a hobby? If you lower your prices can you still make a living at it? Maybe your prices should be higher (on the questionable theory that some potential buyers measure value by price tags). Perhaps you can try another style of work or sell through a different location. Ron's answer would be to keep your

Another View of Pricing

I am often asked how I determine the price I place on my work when it is offered for sale. I usually go into a fairly simple explanation involving time and materials. Recently one of our local turners said that he understood the theory but being retired, he didn't know how to honestly put a dollar figure on his time.

One method I have used that seems to be equable is to determine what your absolute basic needs are. Housing, food, insurance, one dog (no cats), transportation, tools, and wood are a few things that come to mind. Total this amount and you have a base figure of your expenses. For this example, let's say that you need $3200 per month. Do not consider other sources of income such as retirement benefits. Next, determine how many hours a month you work turning your precious objects of art. Let's say you put in 40 hours a week or 160 hours a month. Take this figure into your expense total and you will find that you need to charge $20 an hour for your work.

If you keep a fairly accurate record of the amount of time you spend on a piece, then multiply the time spent with your hourly rate and add the cost of your materials (the blank itself, sandpaper, finish) needed to produce the work, you will come up with a realistic pricing structure:

Time (6 hours)	$120.
Materials	$30.
Price	$150.

Keep in mind, this is a general formula and should be modified to suit your own situation.

—Jack Aarsvold, Mesa, AZ

prices at what you value your work then go about the business of increasing the value of your work in the eyes of all those buyers. This requires marketing.

Marketing your work is different from selling it. (Remember, Ron hates selling.) It is important for the buying public to be able to recognize the maker's identity through his or her work. Ron is not suggesting that you merely create an image for yourself and your work. For the majority of craftsmen, it takes years of exposure through shows and galleries for your work to be instantly recognized as "yours." The process can be aided by giving your work away, and there is nothing wrong with directing those gifts into highly visible collections, public or private. For someone who is struggling to make ends meet financially, giving away work may seem foolish, but when thought of as an advertising expense, it makes sense. If your pieces are not selling for what you have valued them, why not give them away?

Plan on it taking several years to establish an identity for you and your work. It may seem like others out there are achieving instant success, but the reality is that most craftsmen work in anonymity for years before their work sells on demand. Honestly believe in the value of your work and work hard to create a market for it. It will sell.

At July's symposium, Ron's sessions will focus on what to do with your turnings after the last coat of finish is dry. He is looking forward to some lively discussions concerning value, pricing, and marketing.

—Betty Scarpino, Indianapolis, IN

An Introduction to Spindle Turning with Terry Telson and Dale Patton. *The Artisan Workshop, 9240 Amarone Way, Sacramento, CA 95829, 1995. VHS, 33 minutes, $19.95.*

"TELL THEM WHAT YOU ARE GOING TO tell them, tell them, then tell them what you told them"; this is one of the ingredients of making a good presentation and may be the real strength of this new video from Terry Telson and Dale Patton.

Intended as a primer for the beginning turner or a technique refresher for someone more advanced, this is the first of two planned videos, the second to cover bowl turning. As a primer, it meets its mark, but more experienced turners will be disappointed on the subject of skills training unless they are looking for real basics.

This "homegrown" production features the two principals, Terry and Dale, demonstrating plus providing the videography and the original music and likely lots more that's not given credit. Though not as polished as a big-budget production, the technical values of this tape are very good, the music soothing, and the presentation entertaining and informative.

The topics covered include a brief introduction to the lathe, tool selection, a word or two on the value of high-speed-steel tools over carbon-steel tools, manual sharpening of the tools selected, safety wear, and the turning of three elements of spindle turning: the bead, the fillet, and the cove.

In a light and friendly way the tape gives enough information to get turning safely (except for the misplaced comment offered in jest about rounding a cylinder using the edge of the tool rest) and shows a basic skill level to aspire to—all without going into such depth as to overwhelm the beginner.

As far as the actual turning goes, the methodology and theory given seem fine and adequate. The real flaw I find in the tape is that the tool skills are not as controlled as we have come to expect from professional video turners; the cuts are sometimes imprecise, and some movements look a bit awkward, no doubt the result of executing the moves at slow speed for the viewers. This detracts slightly from the video's value; perhaps they will use real-time turning and slo–mo editing next time.

As stated, the real strength of this tape is the excellent use of repetition to get the information across. The video medium has been used to its best advantage here by showing the forming of each element several times from different viewpoints so that we can see all of the important moves that a turner must learn in order to be comfortable and in control of the tool and the skill at hand. The camera takes us to the turner's right shoulder, overhead of the lathe bed, and to a closeup of the work; at each location the element is turned start-to-finish for us to analyze and emulate.

At a running time of just over 33 minutes and a price of $19.95, this production offers a relaxed yet concise and revealing presentation of the basic skills of spindle turning. It should find a welcome place in the libraries of many woodturners and wannabes.

—Mark Salusbury, Markham, ON

Shapes for Woodturners by David Weldon. *B.T. Batsford Ltd, London, 1992. Distributed by Trafalgar, 800/423-4525. Hardcover, 127 pp. $34.95.*

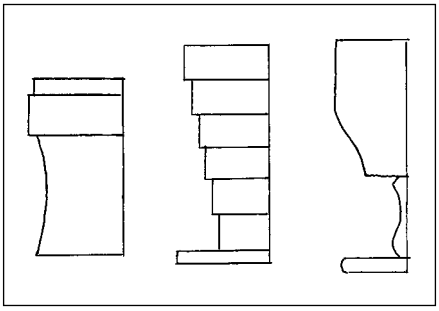
IN THE SEPTEMBER 1994 *AMERICAN Woodturner* I was somewhat adversely critical of John Hunnex's *Woodturning: A Source Book of Shapes* because it makes no perceptible effort to advance turning design knowledge. David Weldon's *Shapes for Woodturners* not only does not advance woodturning design, it pushes it backward.

There are a number of approaches to design. The easiest, most popular, and least worthy is merely to show a variety of designs. This is what Weldon does, over 500 of them. Alas, I am not being strictly accurate, for Weldon gives us only left-hand half-elevations. To see the full form you need an unframed mirror, although this is not mentioned in the text.

The book's 128 pages start with seventeen pages of perfunctory comment on safety, equipment, wood, techniques, and finishing. Two pages give advice on using the shapes and varying their proportions by using a grid. Then onto 100 pages of shapes.

Why do I find Weldon's shapes so poor? While I acknowledge that the appeal of shapes is to an extent subjective, and that my taste is no more the universal benchmark than anyone else's, there is a valid consensus that distinguishes good from not-so-good. When the creator's intents are mainly communicative, the aesthetic consensus may be invalid. But Weldon's intention is obviously and solely to present shapes that are beautiful or delightful or strong. Yet almost without exception he fails. Why?

- His basic shapes are dead. Tension, flow, contrast, and life are absent. Curves have odd kinks and discontinuities. Perhaps he relied too much on combinations of his French curves.
- The ornamental details are weak, indefinite, poorly proportioned and positioned, difficult to turn, and liable to break off.
- In his desire to give us over 500 designs Weldon resorts to excessive and irrelevant detailing, to clusters of beads, hollows, and V-cuts, and to uncomfortable changes in direction.
- Rims and footrims are often sharp



Three of David Weldon's twelve egg-cup designs.

and thin—mean and aggressive rather than powerful.

Many of us know of turners who effortlessly and every time are able to create pieces of real beauty—whether this is directly related to their being genetically artistic I know not. Other turners may be superb turning technicians, but are seemingly incapable of producing anything which delights. While it may not be possible to transform the artistically deprived into Michelangelos or Brancusis, by giving knowledge and by freeing and directing enthusiasm, authors can enable their readers to build on and increase their (the readers') apparently limited artistic abilities and thereby produce far better pieces. Yet Weldon not only fails to attempt this, he advocates shapes that will tend to reverse any ongoing aesthetic progress in those who copy them.

—Mike Darlow

Sculpting Wood: Contemporary Tools & Techniques by Mark Lindquist. *Davis Publications, Worcester, MA, 1986. Hardcover, 292 pp., $24.95.*

IN THE PREFACE OF *SCULPTING WOOD* Dale Nish writes, "Mark Lindquist adds a new dimension to the woodworker's experience." Back around 1988 when I first became aware of Mark Lindquist, if I had heard that statement, I probably would have shrugged my shoulders. In fact, when Lindquist demonstrated his lathe and chainsaw techniques at Arrowmont in 1988, I believe, I wasn't terribly impressed. It was getting late in the weekend and it was time to hit the road, so we left the symposium early. If I had that same opportunity today, I wouldn't be so eager to leave.

Back then I wanted to learn how to turn wood. I wasn't interested in sculpting with a chainsaw or embellishing a bowl with a carving tool. Having mastered the basic techniques that eluded me in the past, I can finally appreciate this book.

Only about one third of it is dedicated to woodturning. Part one deals with the structure of wood, harvesting of timber, the drying process, and distressed, spalted, and burled material. The chapters are relatively short and you won't find any revelations in them, but the information is pointed.

Part two deals with basic tools and techniques. I must confess that I only leafed through this section. Basic power tools, stock preparation, and bandsawn boxes are of minimal interest to me; finishing wood, autobody sanders, and die grinders, on the other hand, are for me choice topics. These tools allow you to go beyond the restraints of the lathe.

Part three is on the chainsaw: harvesting wood and carving vessels with it. Basic maintenance is covered as well as cutting techniques—simple but necessary information. The chapter on harvesting wood will give you an idea of how much work goes into getting a piece of raw wood ready for the lathe. Finding spalted wood and burls and their storage are also discussed.

I was particularly intrigued by the section on chainsaw-carved vessels. The pieces in this section appear not to have been turned at all, but only a little imagination will reveal some of the possibilities of combining lathe techniques with chainsaw carving.

Part four deals specifically with woodturning. The initial pages cover the basic lathe, accessories, and turning tools. Of particular interest is the discussion of user-made tools. The final three chapters deal with turning spalted wood, burls, and vases. I particularly enjoyed reading about the Lindquists' (Mark and his father, Melvin) early trials and tribulations turning spalted wood.

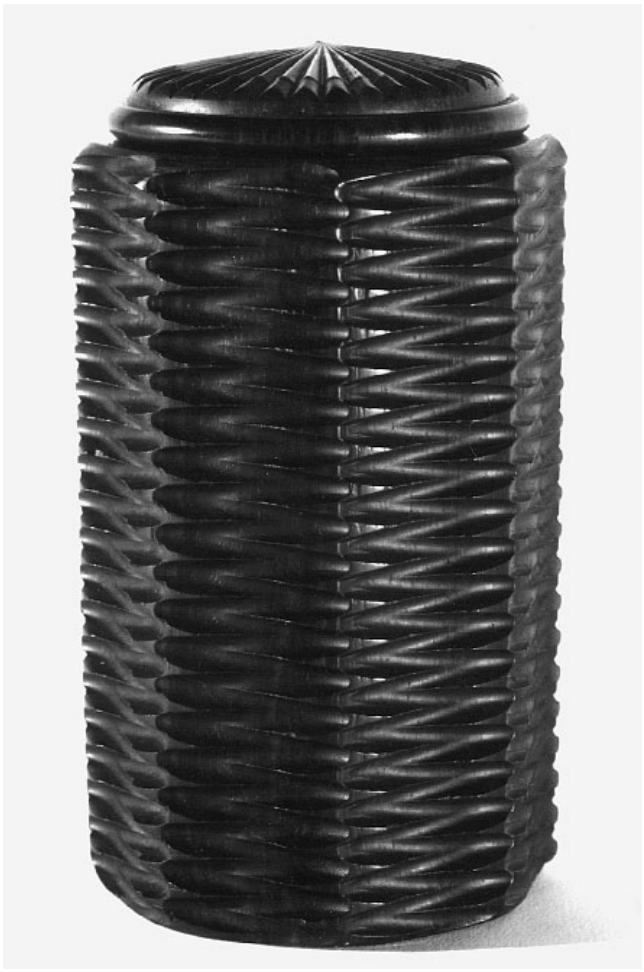
Sculpting Wood not only shows you how the author works, but gives you insights into why he works as he does. Chapter 15, for example, discusses early pioneers in the field of woodturning as a context for Lindquist's search for direction. It includes his apprenticeship with potter Darr Collins. The chapter concludes with a discussion of "translating Oriental Ceramic Ideals into the medium of wood," where Lindquist explains how spalted woods, burls, knots, and other irregularities can be seen to correspond to the flaws that are integral in the aesthetic of Oriental craft.

Finally, the gallery section gives a fine selection of Lindquist's work. The illustrations alone make this an inspiring book that you'll return to often.

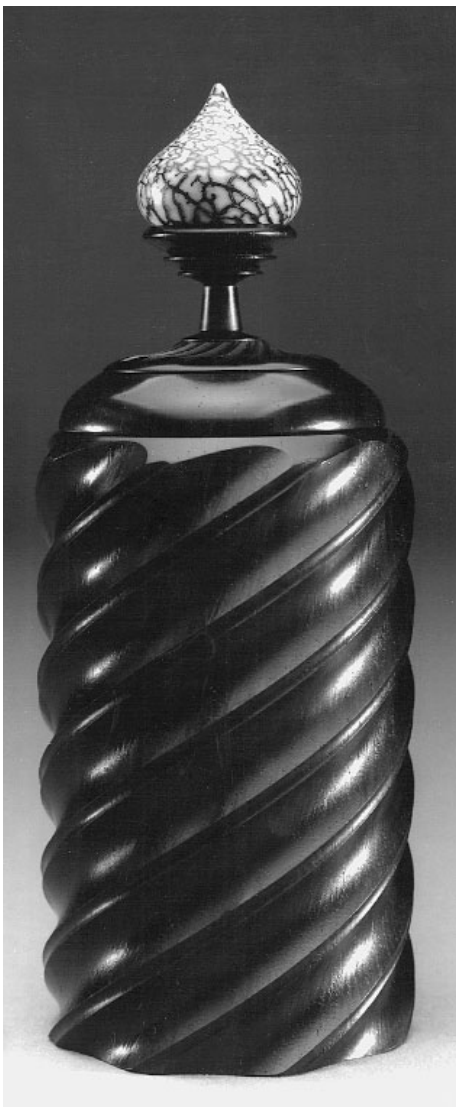
But don't expect a plateful of woodturning. As the title implies, Lindquist does not limit himself to the lathe when creating his pieces. With so many books on the market that exhaust the possibilities of turning, this book goes a step further.

—Robert Rosand

Mark Salusbury, of Markham, Ont., is President of the Canadian Woodturners Association. Mike Darlow is a professional turner, teacher, author, and video producer in Alexandria, NSW, Australia. And Robert Rosand turns professionally in Bloomsburg, PA.



Gorst duPlessis



Richard Sargent

Ornamental turning will be well represented at the AAW Symposium this July 6–8 at the University of California at Davis. A room with a Lawler ornamental lathe will be scheduled for all eleven rotations. Pictured here is the work of two of the demonstrators: Gorst duPlessis, of New Orleans, LA, has been turning for twenty years, the last eight concentrating on ornamental work. His lidded boxes, in the two photos at left, are of African blackwood, cocobolo, and green Dymondwood, ranging in size from $2^1/_2$ to 5 inches tall, each topped with a semi-precious stone or a zaccahaeus nut. At the symposium, duPlessis will discuss reciprocal index work and other ornamental techniques. Like DuPlessis, Jon Sauer, of Daly City, CA, works on a rose-engine lathe as well as an index lathe with rotating cutter. His spiral box (far right) is 7 inches tall, of rosewood, blackwood, and zac nut; the scent bottle (second from right) is 5 inches tall, of blackwood. In his presentations Sauer will discuss index carving and how to convert a metal lathe to an ornamental lathe. For more on the symposium, see the article beginning on page 45.