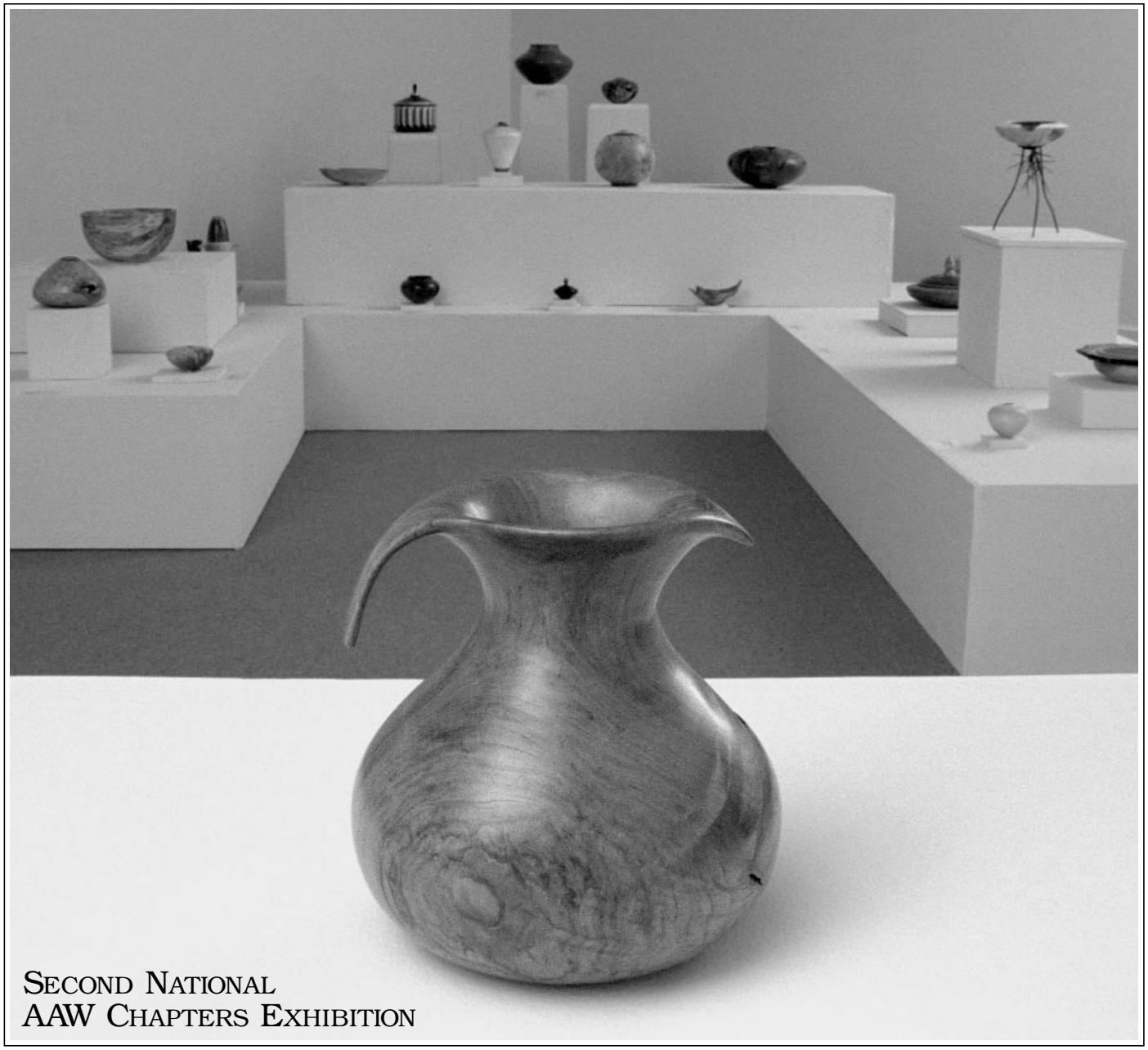
■ Lindquist Retrospective ■ Segmented Turnings ■ Avoiding Catches ■ Chatterwork ■

American Woodturner

The Journal of the American Association of Woodturners March 1996 $5.00 Vol. 11, No. 1



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

"Growth through Sharing"

Something new and different for our 10th Anniversary Symposium at Greensboro is in the works—an invitational show that celebrates our growth these past ten years, especially as it has been furthered by the outstanding contributions of demonstrators in our field. The title of the exhibit is "Growth through Sharing."

This is how it was organized. A Board-appointed committee selected fifteen woodturners who have challenged, inspired, and/or directed the field of woodturning through the content of their work and have demonstrated a willingness to share and teach what they bring to the field. The fifteen were asked to name two woodturners (and one alternative) whose work he or she felt represents the best and most promising in our field. With one piece from each participant (alternatives included and repeats eliminated), the show will feature forty-six pieces.

The show opens on June 21, the evening before the symposium, at the Guilford College Art Gallery (about 10 minutes from the Koury Center) and runs through July 31. An opening reception is planned and a catalog, too. The idea of this show excites me because it celebrates those who have helped us grow so far so fast, and it pushes younger turners to the front.

Another first at Greensboro will be a room dedicated as a Special Exhibition area. Chapters are invited to reserve a table for a display of their work. Some chapters will be showing the results of recent contests. Rodger Jacobs and Steve Loar are organizing a "Forced Association" challenge (see page 37). It all sounds like fun!

Talking about firsts, our tenth anniversary calendar is a great first for AAW. The color photographs and the celebration of our craft are outstanding. The twelve turners featured were selected from the 1985 exhibition at Arrowmont where the AAW was formed. I predict this calendar will be a collector's item. But it's already March, and we want to be sure you get to use it this year, so we've lowered the price (see the ad, below). Sharing this calendar with friends is a great way to let people know what we do.

Our January board meeting in San Antonio, TX, allowed the Board to select the site for our 1997 conference: the San Antonio Municipal Auditorium. It is a great facility and seems almost tailor-made for our functions.

The chapter and membership committee will be very active this year. With Bill Stephenson as chair, they are working on some ideas that will improve Board support of the Chapters. Board members are planning to visit chapters on occasion to do demonstrations and/or discussions on matters of common interest—what I call "The Personal Touch." You will hear more on this as it develops.

During the meeting we reviewed our impressive membership growth, from 2,405 in 1990 to 5,757 at the end of last year. Our conference attendance has grown from 243 in 1987 to 531 in 1995. These numbers give us cause to look into the future and see how the AAW might continue to grow. I forsee a number of new initiatives:

- An Executive Director to oversee the increasing day-to-day operation and help us plan for the future.
- A Conference Manager to handle the tasks of increasingly large symposiums
- A Woodturning School operated by the AAW.
- An improved and expanded Scholarship Grant Program.
- A Museum of Woodturning managed by AAW.
- A Permanent Gallery maintained by the AAW.
- A Traveling Gallery to help educate the public on what we do. We realize the number of artistic woodturners are growing much faster than our market is developing.

These ideas will all be reviewed and discussed for realism, practicality, and timing at our mid-year meeting. The Board welcomes your thoughts on these and other ideas for our growth.

—Charles Alvis, President of the American Association of Woodturners

American Woodturner

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

Vol. 11, No. 1 March 1996

On the cover: *A view of the Second Biennial National Exhibition of the AAW Chapters, currently at the Fitchburg Art Museum in northern Massachusetts. In the foreground is "Early Texas Pitcher" by Richard Jenkins (TX). At left, members of the hosting Central New England Woodturners chapter examine Gary Johnson's (MO) "Reversible Hollow Form" and Stephen D'Arc's (CA) "From the Forest Floor." For more on the show, see the article beginning on page 12. Photos by Rick Mastelli.*

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Round your coverage, please

We congratulate the editor and the AAW for the many improvements you have initiated in this journal. Even so, we are surprised at how narrow a range of products and services are reviewed in each issue. We hope that you will publish these notes about new but little-known items for turners.

Hollowing worms open new vistas. Turn only the outside of a bowl, then place the 300 or so worms you receive ($12.50 + S&H) on the upper surface. As the worms hollow the interior of the bowl, they also produce attractive tracks on the surface and through the walls. You control the bowl's final wall thickness by how long you let the worms work; we've made some bowls that are more hole than wall. To finish your bowl, drive the worms out of the wood by placing the bowl near a radio or CD playing heavy metal rock music. You can even re-use the worms! Available from Vermes, Inc.; specify hardwood or soft, end grain or face grain.

Mold-A-Bowl kits are for turners who haven't yet purchased a lathe, but want to practice. Each kit includes shavings, glue, embossers (to produce wood grain patterns on the completed bowls), and a variety of reusable molds in different shapes. An optional hydraulic press is available, but we find a car's bumper jack just as good. Only open forms available at this time, but vessel molds are on the way.

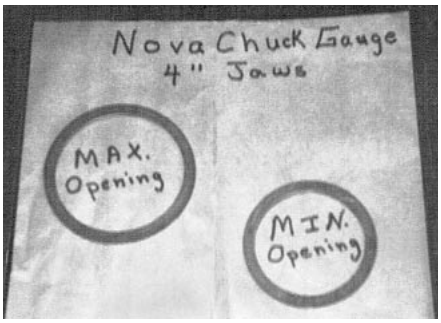
From **Simu-Surf** comes a line of one-step simulated finishes. Each spray can contains enough finish for dozens of turnings in realistic faux finishes including Counterfeit Cocobolo, Practically Padauk, Almost Apple, Vaguely Pink Ivory, Mock Maple, and many others. A series of masks for producing birds-eye and fiddleback graining is being developed. The perfect way to complete your Mold-A-Bowl projects.

For novice turners who want to impress their more advanced colleagues, come two novel products: **Designer Shavings** and **Designer Tool Decals.** The shavings come in a variety of woods, including most exotic species, and in two sizes: super-long-and-wide (produced by hogging out with Irish-grind tools) and super-fine (long but barely visible shavings as from the finest finishing cuts). Sprinkle these around your shop, especially to cover over the piles of short chips you usually produce. The designer decals are personalized, with each one reading *Made in Sheffield expressly for_____*. Put these on your ancient Sears chisels and impress your friends.
—Gary Zeff and Abe Flexer, Boulder, CO

Nova chuck gauge revisited

The tip from T Sam Lerwill regarding the Nova go/no-go gauge (December 1995) was a good one. I use a Nova chuck a lot and over the last few years the best I've been able to do is to develop a set of tables that give max/min measurements of the various size jaw attachments. But, even with the tables I have occasional mismeasurements. I use dovetails as often as I use tenons on my pieces, so Lerwill's tip solved only half my problem, since I also need the max/min *expansion* measurements for each set of jaws.

Therefore, I turned a series of rings out of lauan exactly replicating the max/min dimensions of each set of jaws. The face of the ring is exactly the jaw thickness, so I can also use them, as Lerwill suggests, for tenons. *—Joe Hillsman, Lusby, MD*



Perspective on the art

I read with interest the article "Turning Plus…" in the March 1995 issue. Yes, some woodturnings are pieces of art. But not all work from woodturning artists is necessarily art, no matter how creative it may be. This is true for any art form.

The growth of the various art forms is linked to history; it represents an intellectual evolution. If we allow some over-simplification, then the Gothic period can be seen as an homage to God, the Renaissance period as an homage to the human genius, the Baroque period as an expression of spiritual ecstasy and conceit, etc. This vision of society, we do not (yet) find in the art of woodturning. There are remarkable and beautiful realizations, there is technical stuntwork, there is lonely genius, but there is yet no vision, no link to intellectual evolution. There are individual pieces of art and individual artists, but no current.

Maybe I expect too much too soon. Maybe woodturning is something apart, that will develop on its own. But as an art form, it seems to be missing something essential.
—D. Ellegiers, Gavere-Vurste, Belgium

From the WTC

On behalf of the Wood Turning Center, I want to congratulate the AAW on its 10th year. We are confident that both organizations will continue to serve the turning field for many years to come. In the spirit of this mutual commitment, I'd like to share with readers of this journal an overview of recent and current WTC activities and programs, fulfilling our mission of preservation, education, and promotion. I think you'll be encouraged, as we are, with how many ways the turning field is developing.

Several of our activities during the past year have been enhanced by working with various AAW Chapters, such as the Bucks Woodturners at their Mini-Symposium II last June and other chapters at venues for the *Challenge V* exhibition. Turning is strengthened by our cooperation and mutual support.

Preservation

•WTC maintains an *Artist Profile Data Base*, including computer data, hard-copy documents, and more than 15,000 slides and photographs.

•WTC has documented its own exhibits and has worked with the Arrowmont School of Arts and Crafts and Arizona State University Art Museum on documenting theirs.

•The Museum of Ornamental Turners, Ltd. (U.S.A.) gave to the WTC its complete Ogden's *Bibliography of the Art of Turning and Lathe* and *Machine Tool History and Pedigree of Holtzapffel Lathes* along with their newsletters.

•The WTC has developed and maintains a bibliography of books and articles about turners, turning techniques, and exhibitions.

•*Turning Points*, the WTC's quarterly publication, has been expanded.

•Planned for publication next year are papers and transcripts from the *1993 World Turning Conference* and a source book of the WTC Collection.

Education

•Turning workshops have been held at exhibits and elsewhere, often with cooperation of local AAW Chapters, for students, parents and teachers.

•In 1995 the WTC in collaboration with the Point Breeze Performing Arts Center initiated a pilot program at the St. Thomas School in Philadelphia to teach lathe-turning to low-income and/or emotionally challenged children, teens, and adults. In 1996, this community-outreach program will be expanded to other schools; turning teachers are always needed.

•In 1996, the second *International Turning Exchange* program (the story of the first appears in *American Woodturner*, Dec. '95) will include individuals from the U.S., France, and Australia. Residents will attend *Conservation & Collaboration*, a Canadian Conference arranged by the Saskatchewan Craft Council and Michael Hosaluk (and supported by a grant from the AAW). We're accepting applications for the 1997 and 1998 programs through August 31, 1996.

•The *1997 World Turning Conference—Turning Towards the 21st Century* will provide an international forum for scholarship and dialogue. (Presentation proposals welcome.)

Promotion

•Since the first *North America Turned Objects Show* in 1981, the WTC has organized more than ten exhibitions, including five *Challenge* shows. To date, WTC exhibitions have traveled to over forty museums throughout the U.S. *Challenge V–International Lathe-Turned Objects Exhibition* will be viewed by over 100,000 people before its conclusion early in 1997.

•In 1995, at the conclusion of the *ITE* program, the WTC sponsored the symposium *allTURNatives: Form & Spirit*, aimed at helping artists to tap into their personal creativity and collectors to gain greater understanding of the artistic process. In 1996, the *ITE* symposium will be *allTURNatives: Creating, Critiquing, Collecting.*

•The ITE programs (1995–96) include an exhibit of the resident turners' work at the Berman Museum of Art, Ursinus College (Collegeville, PA) and in 1996 may travel to several other venues.

•In 1997, the WTC is planning a traveling exhibition called *Curators Focus: Turning in Context*, an in-depth look at turners and their work to be documented in a catalog. (We're accepting entries for this exhibition through June 30, 1996.)

•For 1998, the WTC is working on a collaborative exhibit and conference with Arrowmont School of Arts and Crafts. In addition, the Center expects to promote an exhibit and conference outside the U.S.

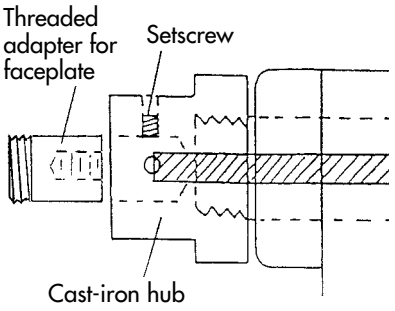
•The WTC is engaging in a proactive membership drive and encourages all who read this to join us and share your ideas and talents.

The WTC wishes the AAW members a successful 1996.

—Bruce Kaiser, WTC President

Unfinished business

In my article on the bowl lathe (AW, December 1995) I showed a design for the locking rod, which I have since found to be inadequate. For a big workpiece, the setscrews simply don't have enough holding power, and allow the threaded adapter to work out enough that it protrudes through the faceplate, preventing the work from seating properly on it. The redesigned setup is shown in the accompanying sketch. I enlarged



the adapter diameter to 1 inch, and eliminated the nut on the end of the locking rod, by center-tapping the threaded adapter. Now the adapter is held seated by the threaded rod, and the set screws serve only to keep the adapter from rotating in the hub. The design has withstood vigorous testing and I'm now satisfied.

—Phil Drinker, Belmont, MA

Erratum

The bowl pictured in the Gallery (page 54) of the December issue, the one purchased by the University of Arkansas, was made by Mike Kornblum, Mountain Home, AK.

On Collecting, Two Years Into It

We began collecting turned wood two years ago, predisposed to the passion. We have a large collection of antique kitchen utensils. It gives us something special to learn about and to share. We love to travel and, with a collection, there is always an excuse to browse through galleries and old "junque" shops. It's like having a hobby, except that you get to do it together. We considered collecting Federal period furniture, but the cost of the better pieces was prohibitive

We have always loved wood. It is warm to the touch, and the natural beauty and uniqueness of each piece entices us. We were at the Brandywine Craft Show in Wilmington, Labor Day 1993. We always go to craft shows in the hopes of getting unusual and personal presents for our families. We walked past Tom Frey's booth and spotted a lovely, graceful cherry burl turning. It was $75, which we thought was too expensive. We spoke with Tom, who explained what went into the piece, the dangers of a winged turning revolving at 1200 rpm, and we were intrigued. We walked on to do the shopping we had planned.

At the end of the day we had a little money left and went back to look at Tom's turning again. We both thought it was beautiful. Susan, who claims Neil is impossible to buy a present for, decided that this should be Neil's Hanukkah present. And so we bought our first piece, enthralled with its beauty and artistry, amazed at how skillfully the burl had been coaxed from the tree, struck by how the natural beauty complemented the form, and impressed with how friendly and patient Tom was.

John Sherman owns Creations Fine Woodworking Gallery in Wilmington. He is now on the Board of the Wood Turning Center. We went to the store and began visiting at least weekly, often riding our tandem bike there on a Saturday. John was patient, too, but more importantly, he was eager to teach and to share his knowledge and love of the field. He encouraged us to collect, discussing the quality of pieces, what to look for, and how to form a collection. A wealth of information, galleries play a valuable role promoting turners. Tension between direct sales and galleries is the subject of some debate. We've found that objects cost about the same in either venue. Galleries need to be supported if the field is to advance. Places like Creations, Sansar (Washington D.C.), del Mano (Los Angeles), and Connell (Atlanta) educate and provide immeasurable guidance to new collectors.

Thus began our journey into the world of turned wood. In two years we have collected about two hundred pieces, met the majority of the turners represented in the collection, and helped organize the AllTURNatives conference at the Berman Museum in 1995. In addition, Susan has joined the board of the Wood Turning Center. Seventy-five dollars doesn't seem like a lot of money anymore. We try to promote collecting whenever possible. We use turned wood as gifts, have an open invitation to anyone interested in seeing the collection, have visited with other collectors and artists in their homes, and with our medical backgrounds have become "advisor-consultants" to turners with medical problems. The best promotion may be wearing Johannes Michelson's hats, which we always do. Even on the streets of Manhattan people will stop us to talk about the wood.

There are many reasons for collecting turned wood. The most important is the opportunity to meet so many wonderful people. Never before have we found a group of artists so available to the average collector. In the "flat-art" world, artists often use agents, and only the largest collectors ever get a glimpse of the person behind the work. The turning world is more like a big family. Anywhere we travel, we look up turners and collectors. We have always been welcomed with open arms and open hearts. We have made numerous friends in this way.

Because of the relative youth of the field it is possible to "master" it. Being doctors, we enjoy the cerebral aspects of the turning world. Whenever collectors visit one another they play the "who made it?" game. Woodturning is easy to learn and isn't intimidating the way other art forms can be. We just saw the White House Craft Collection in New York, and the ability of the public to relate to the work was astounding. It was the first time we have been in an art museum where people were happy, talking in a normal tone and discussing with strangers the marvelous work displayed. Maybe the real distinction between craft and art is that people can understand craft in a natural manner and aren't intimidated as they are with art.

We have sought advice from some of the major collectors: Irv Lipton, Jane and Arthur Mason, Lucy Scardino and Peter Lamb, and Fleur and Charles Bressler. They each have very different collections and different ideas about collecting. Though our philosophies overlap to some degree, we have developed our own rules for collecting:

1. Buy only what you really love. There is a huge amount of work available. Lots of pieces catch your eye, but ask yourself before you buy if you really want to look it everyday, can you live with it? Corollary: don't buy as an investment. Many of our pieces will increase in value—some already have. But this is a happy bonus and not the reason to collect. The secondary market hasn't yet developed and there are a lot better places to make money.

2. Can you afford the piece? Never borrow money to buy art. If you want a piece and can't afford it, just wait. Never worry if a piece goes to another collector. There will always be others.

3. Form is critical. But the interplay of the form and the wood is what makes a piece work. Lots of beautiful burls are spoiled by poor form. Objects that display movement are especially attractive to us. How a piece sits is critical. The foot of the piece should meet the table in an unobtrusive manner and may be used to provide "lift" to a vessel, making it appear lighter. A focal point in a piece is often desirable. Examples include a special swirl in the burl, the incorporation of sapwood, inlay, or even the use of negative space, simple forms can be elegant. We look for turners who work with nature to release her bounty.

4. Is a piece balanced? Does the graining match the size? Does it feel right in your hand? Wood is meant to be touched and handled. If it doesn't feel right in your hand then it probably isn't right. What does the piece look like upside down? Many of the most balanced pieces can be turned upside down and look just as good. Also, you may choose to display a piece in a different way than that intended by the artist. If that makes you happy, do it.

5. Never worry about where the piece will go. The most fun is moving turnings around the house and our offices. This allows a constantly changing display. It is amazing how different a piece will look in different settings. The more different places you see the same piece the more you will understand it. But always try to light the piece well.

6. Objects should be beautiful. The main reason for collecting is to enhance our lives. Being surrounded by beauty is wonderful. Some pieces may have a story and a few may have a message. Too many artists seem compelled to deliver a message in each work. This is probably a carryover from the art world: If it doesn't have a meaning it can't be art. Give it up. Having things you enjoy and that give you happiness is reason enough.

7. Some pieces will carry a message. By having the chance to know the artist, this becomes special. We never appreciated Todd Hoyer's work until he and his daughter, Cody, stayed with us. It was shortly after this that we purchased our first Todd Hoyer.

8. Start with representative work of the major turners. In time, consider more unique pieces by the same artist if the spirit moves you. Following the work of a particular artist can be especially rewarding and educational. We love one-of-a-kind pieces but only because we know the artist's classic forms.

9. For turners, your job is to enhance the natural beauty of the wood. Don't force it to be something it isn't. It is said that the great scrimshaw carvers would carry the raw material in their pockets for months, fondling it constantly until the form that it had to be became clear to them.

10. Pieces you can use are the best. There is a lot of talk about "food-safe" finishes. We have always interpreted this differently from the rest of the field—not as "safe for food if eaten" but as "safe to serve food on without damaging the wood." Nothing is better at a party then using our large Don Meier and Stoney Lamar salad bowls. Everyone asks about them, which gives us a chance to talk about wood. We have "made" three other collectors this way. When art is useable, it becomes part of the fabric of everyday living. What could be better!

—Susan and Neil Kaye, Wilmington, DE

AAW, THEN & NOW

AS WE BEGIN THIS TENTH ANNIVERSARY year of the AAW, it is appropriate to look around, as well as back, to see the context for this dynamic organization. In any endeavor, whether it's turning, organizing, or nuclear fusion, critical mass has to be reached. There comes a moment when things fall into place, the answer is apparent. Critical mass was reached with the formation of the AAW ten years ago in Gatlinburg, TN, at a conference at the Arrowmont School of Arts and Crafts. But preparatory events had been taking place for years before.

Woodturning's growth as a popular hobby and professional art form began quietly in the years following World War II. Those who began exploring the artistic potential of the turned bowl were not many; they were pioneers with names like James Prestini, Bob Stocksdale, Melvin Lindquist, and Rude Osolnik. But the lathe's economy, ease of use, and self-contained versatility attracted many others.

By the mid 1970s, woodturning had begun to appear in galleries and craft shows, and woodworking magazines covered the techniques and exciting new work of this old craft now recharged with a sense of quality and innovation. Woodturning was taking a uniquely contemporary shape, and the enthusiasm was pushing beyond the isolation of basement and garage workshops. Woodturners wanted to share their work, their ideas, and their questions.

Albert LeCoff, along with his brother Alan, and Palmer Sharpless were visionaries of the organization woodturners were ready for. From 1976–1981 these three put on ten symposia that captured and shaped the energy of contemporary woodturning. Sharpless was head of the woodworking department at the George School where the symposia were staged, and Albert LeCoff was

AAW, THEN & NOW (CONTINUED)

director of the Amaranth Gallery and Workshop in Philadelphia. The symposia that they inaugurated attracted some of the country's best turners, including David Ellsworth, Frank Cummings, Stephen Hogbin, Alan Stirt, and Leo Doyle, and spawned the careers of many others.

The brochure for the first symposium, "Woodturning, Philosophy and Practice," billed it as an opportunity "for woodturners to get together, share ideas, and learn from each other." As all have since, it spanned a broad range, covering both technical and aesthetic issues and satisfying new and experienced turners alike. It included demonstrations, slide presentations, and panel discussions. It even included an Instant Gallery, though it wasn't called that, featuring work from instructors and novice turners, all displayed on the same tables. An intense three days, even the evening hours from 7 to 11 were scheduled for hands-on opportunities. There were twenty-five lathes, fifty attendees, and five volunteer leaders. Registration for the three days, including two lunches and all materials, was only $25.

The idea of "rotations," allowing smaller group encounters, was not incorporated until the second symposium. With five presenters, all participants were divided into five groups, and every group rotated through sessions with each presenter. "I wanted everybody to see everything, not just what they wanted to see," says Albert. "I wanted them to be hit with something new when they weren't looking." There was always room for the unexpected; anyone who had something to share could find a time and place to do it. Indeed, these early symposia were full of surprise appearances that led to highlighters at subsequent get-togethers. Del Stubbs, for instance, showed up at the seventh symposium as a participant; his diffident offer to demonstrate how his homemade tools worked blew everybody away and set new woodturning standards.

The initial gathering prompted an inch-long paragraph in *Fine Woodworking* magazine, which included Sharpless's address. He received 350 inquiries for the next symposium, which at the time didn't exist.

The tenth symposium warranted something special. Albert brought together twenty-five presenters and arranged a woodturning exhibition to open at Bucks County Community Gallery the weekend of the conference. Juried by Rude Osolnik and David Ellsworth, and traveling later to two gallery venues in Philadelphia, "The Turned Object Show" was the first major exhibition of lathe-turned work in the U.S.

By the time of the last of the LeCoff/Sharpless symposia, two other vital woodturning institutions had taken root. In 1979 Dale Nish organized the first woodturning symposium at Brigham Young University in Provo, UT. Continuing through today (this year's is scheduled for June 6–8), the Utah Woodturning Symposium has become an annual event of international proportions, attracting such notable demonstrators as Mel and Mark Lindquist, Alan and Stuart Batty, Hans Weissflog, Bonnie Klein, Ray Key, and Virginia Dotson, with regular appearances by Richard Raffan, Clead Christiansen, and, of course, Dale Nish.

Also taking shape in the late 1970s was the woodturning program at the Arrowmont School of Arts and Crafts in Gatlinburg, TN. Founded in 1912 as a settlement school for impoverished children in the Smoky Mountains, Arrowmont became affiliated with the University of Tennessee's College of Liberal Arts, Department of Art in 1978 and incorporated as a non-profit craft school in 1989. Arrowmont has set the national standard for woodturning education, serving beginning, intermediate, and advanced craftspeople and artists through various programs. Last year, the school launched a building project that includes a woodturning studio with fourteen lathe stations (see page 50 for an update on this project).

Sandy Blain, Arrowmont's director, is committed to the field and has fostered several woodturning conferences at the school, including the one that saw the conception of the AAW.

It was 1985, and Arrowmont was just about the only institution in the country where it was possible to teach or study woodturning. Sandy Blain and David Ellsworth, who was regularly teaching at Arrowmont, recognized the need to highlight the state of current work in a national show. They engaged Mark Lindquist and Renwick Gallery Director Michael Monroe to help jury what became the 1985 exhibition, "Woodturning: Vision and Concept."

The show's opening coincided with a three-day symposium (the first since the LeCoff/Sharpless last), drawing more than 200 woodturners. "With all the meeting and greeting of old friends and new," wrote David Ellsworth later in the premier issue of *American Woodturner,* "it soon became clear that what had brought us to Tennessee was more than just a lust for tools and techniques. It was a thirst for the process of learning. Several hundred turned objects were on view in both formal and informal [Instant Gallery] display—as if the energies of the past decade were brought before us in a moment…If there was a single thought on everyone's mind, it must have been, 'where do we go from here?'"

At this symposium Dick Gerard, who would later serve as the AAW's treasurer, submitted a survey calling for the formation of an association.

PERSPECTIVES

AAW, THEN & NOW (CONTINUED)

The first brainstorming session took place after hours, among a group of the symposium participants. The next day an invitation to serve the organization went out to the rest of the participants. A vote was taken, an ad hoc board of directors was formed, and the work began on framing a charter. By April of 1986 the American Association of Woodturners was formally named and incorporated as a non-profit organization. The journal began later that year, along with the first local chapters. The first AAW symposium was held in October of the following year.

Meanwhile, Albert LeCoff, after serving on the AAW steering committee and briefly as its vice president, founded a second, complementary organization—the Wood Turning Center—dedicated to education, preservation, and promotion of turning. The Center has a collection of over 300 lathe-turned objects and a research library with over 15,000 slides, photographs, books and documents dealing with the history of woodturning. (For more on current WTC activities, see the letter from Bruce Kaiser on pages 2–3.)

And the field continues to grow. Mini-symposia in Arizona, Georgia, Maryland, Missouri, North Carolina, Ohio, Pennsylvania, Tennessee, and Texas all supported by the AAW, complement the AAW national symposia and the annual Utah Symposium. Schools such as the John C. Campbell Folk School in North Carolina, the Appalachian Center for Crafts in Tennessee, and the Sawmill Center for the Crafts in Pennsylvania, regularly feature woodturning workshops and thus complement the growing program at Arrowmont. And turned wood objects now appear in museum collections and in major shows at galleries such as the Banaker in San Francisco, the Joanne Rapp in Scottsdale, the Sansar in Washington, and the del Mano in Los Angeles.

Critical mass accounts for more than the formation of the AAW; it is responsible for the explosion in woodturning interest and activities, the effects of which continue to build.

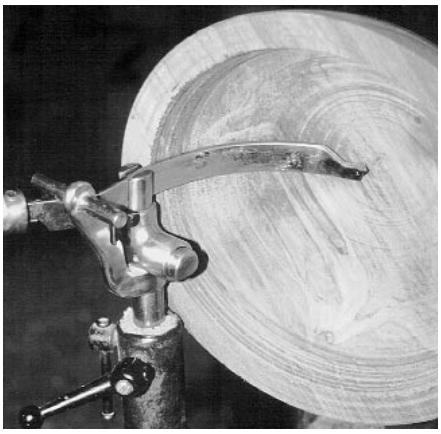
—Connie Mississippi and Rick Mastelli

PRODUCT REVIEW

Kel McNaughton Centre Saver, *Kelton Industries Ltd., PO Box 58870, Greenmount, Auckland, New Zealand (Phone/fax 64 9 408 5862). $266, includes one straight and three different curved blades, a quick-change tubular handle, and shipping.*

MY FIRST HANDS-ON EXPERIENCE WITH the Kel McNaughton tool came while I was demonstrating at a woodworking festival in Melbourne. I was impressed with the results I had seen—stacks of nested bowls—at a previous conference, but I had not had a chance to see the tool work. I expressed an interest in trying it, and in Melbourne I had only just been shown how to set it up when a crowd gathered to watch me demonstrate. I slipped the curved cutting blade through the pivoting gate and eased cautiously into my first parting cut. My tension immediately disappeared, as I discovered how safely and easily the tool operates. In that one day demonstrating I turned out 140 roughed-out bowls.

The heart of the system is a unique tool post incorporating a pivoting gate and a cross brace that keeps the tool blade from rolling over or digging into the cut. Anyone who has attempted deep partings to separate bowl blanks knows of the extreme downward force on the cutting tip of a normal handheld parting tool. This system absorbs all those forces, making the deepest of partings easy, safe, and comfortable. In fact, you can use the tool one-handed by simply holding the handle upwards while pushing the tool into the cut. I have found the blade cuts and clears better, especially on harder and more fibrous woods, if you move the blade slightly from side to side to widen the cut.



The Kel McNaughton system is unique in that the tool post offers freedom to choose any angle of entry. So with the straight and three differently curved blades, you can cut an infinite variety of bowl parting shapes. It is possible to get three or four blanks from 4- to 5-inch-thick stock, and even more from thicker sections. The widest possible curved cut is approximately 12 inches in diameter; with the straight blade a 14-inch-diameter cut is easy.

My one and only criticism of the system was the original round shape of the cutting tip, which was difficult to sharpen. But this and several other features have been improved, making this tool an excellent investment for any woodturner, professional or amateur. *—Stephen Hughes, Aspendale Gardens, Victoria, Australia*

PRELUDE TO TURNING TEN

ABOUT SIXTY-FIVE RABID WOODTURNING enthusiasts from North Carolina and Virginia descended on Mitchell Community College in Statesville, NC, on October 28 and 29, 1995, for the first Carolina Woodturning Mini-Symposium. This event was a great way to lead into this year's 10th annual AAW symposium in Greensboro.

The event began to take shape months before with an initial tour of the facilities. Gary Johnson, the facilities manager at the school and a woodturner, was excited about the chance to be host. A number of us from the two local AAW chapters (North Carolina Woodturners and Triangle Woodturners of N.C.) came together at subsequent meetings to make the idea a reality. It really gelled when Rhodes Batson submitted a proposal to the AAW educational committee and we were awarded a $500 grant for the event. We located lodging at a historic hotel that we felt would add charm to our get-together.

We aimed our mini-symposium at beginning to intermediate turners, and we created a framework to help focus and shape all presentations for maximum effect. We planned five rotations of two sessions with no overlap of topics. We decided to use all local instructors, not only to keep costs low but to take advantage of our great local resources. The broad subject areas included basic bowl turning, hollow turning, spindle turning, free form, and design, each topic to be handled at various levels, from beginning to advanced.

The presenters were requested to include various points in their presentations, no matter the topic, from wood selection and mounting strategies to tool and finishing choices. This was a very successful system since the turners in attendance received information that they could immediately put to good use.

We had an excellent group of presenters. Terry Brown of Durham and the TWNC is the consummate professional furniture maker and spindle turner. Melinda Fawver of Asheville (formerly of California) and the NCW, who is a nationally known turner and carver, opened a number of eyes to design issues. Bill Johnston, a charter member of both NCW and TWNC, with an insatiable curiosity of lathe-turned forms, has mastered using roots and burls for open vessels as well as hollow forms. Don Olsen, who came to us via New Jersey and Chicago and is now active in the NCW, has perfected the hollow form turned from the bottom. Phil Pratt, co-founder (with Darrell Rhudy) of the TWNC and now Secretary of the AAW, and Herb Quarles of the NCW are both full-time professional turners with a lot to share. Bill Hyatt, a law professor at Western Carolina University and part-time turner, does fine Christmas tree ornaments and spalted maple turnings I have especially admired. He is a member of the NCW. Several of these turners will be featured demonstrators at the Greensboro symposium this June.

The member's gallery in the lobby of the classroom building was quite impressive. Since I am a member of both groups and attend meetings where the member's galleries are presented, I have the advantage of knowing the work of each group. I found it interesting to see the wonder on people's faces when they discovered work from the sister chapter.

The mini-symposium was a great success, and we have been asked back to Mitchell Community College. We accomplished all our goals, kept the price affordable, and learned a great deal that we will put to good use in June at Turning Ten.

—Roger Austin, President, Triangle Woodturners of North Carolina

"CROMWELL"

OFFICIALLY, THE SHOW IS CALLED "THE New England Woodcarving and Wildlife Art Expo." Being held each year at the Radisson Hotel in Cromwell, CT, the name is shortened, in typical New England fashion, to "The Cromwell Show," or, more simply, "Cromwell." Practically speaking, it is doubtful that most show participants even know the show's official title.

The main event, as the official title implies, is bird carving. Sponsored by the Valley Shore Waterfowlers (a group of duck hunters), the two-day event benefits wildlife habitat and conservation projects. Toward this end, the grand ballroom of the hotel is jammed full of carved birds, ducks, and fish, from artistic interpretations to absolutely lifelike renditions to working decoys (that are tested in tanks of water as part of the competition). Surrounding the area carved out for the competition, are a trade show for carving suppliers, booths for artists selling wildlife art in a variety of media (painting, photography, duck stamps, wood carving, and more), and smaller satellite competitions in general woodcarving, photography, painting, and woodturning.

The woodturning show is run by the three local chapters of the AAW: the Nutmeg Woodturners League, the Central Connecticut Woodturners, and the Central New England Woodturners. The show consists of a juried competition and continuous woodturning demonstrations by members of the participating clubs.

Judging this year was in the following classes: Novice, Closed Form, Natural Edge, Functional, Spindle, Open Form (Large and Small), Miniature, and Other Points of View (anything that did not clearly fit into one of the above categories). In addition to awarding ribbons for first, second, third and honorable mention for each class, overall first, second,

and third best in show earn rosettes and cash prizes.

Sixteen turners submitted fifty-seven pieces for the competition. While the size of the show has been growing steadily in recent years, attendance was down somewhat this year, due in part, we think, to the torrential rains Saturday morning that had the local radio stations urging everyone to stay off the roads.

Pieces are judged for both technical and artistic merit. Sanding swirls are a definite no-no. Pretty wood will take a ribbon, but only if the shape of the piece complements the wood's figure and the finishing is done well, bottom included. As always, the three judges had to work hard to choose the best from an assortment of very fine pieces.

While the competition lures collectors from all over Connecticut and the New York city area, ongoing woodturning demonstrations help bring new turners to the clubs. In fact, Jim Kephart, a principal organizer of the woodturning event for the past several years, would never have joined any of the local clubs except that his wife (a woodcarver) dragged him out to see the show six years ago. After meeting a few of the woodturners (and being drafted to judge the woodturning), he decided to attend a few club meetings. Now he is active in all three sponsoring clubs and vice president of two.

This year's demonstrations featured four lathes: Kephart made mushrooms on his Carbatec, numerous turners showed their stuff on a larger Record lathe supplied by Harris Equipment Corp., John Lorch demonstrated the power of the foot with his turn-of-the-century treadle lathe, and Ron Mirabile demonstrated making fishing lures on his modified Klein Design lathe. As always, whenever anybody made chips, a crowd gathered to watch.

—Anneliese Fox, South Windsor, CT

Cascade Top Competition

At our May 1995 meeting the Cascade Woodturners president, Don Kemper, announced a spinning top competition and appointed me to organize it. We quickly developed some simple rules:

1. Entrant must be a member of Cascade Woodturners.
2. The top must be made on the lathe by the member.
3. There are no limits on the design, size, or shape. Ingenuity counts.
4. The top must be spun by hand or simple mechanical means (string, etc.) Electrical or gas motors are not allowed.
5. The basic component must be wood.

Each top would be shown by its creator at the September meeting. A secret ballot would determine the winner. Each member would vote for the top he/she thought best on any criteria the member chose to use. The winner would walk away with a $50 gift certificate donated by Craft Supplies of Provo, UT.

We met on September 21 at Myles Gilmer's wood business (where most of us went home richer in wood and poorer in the pocketbook). We had a nice selection of tops. Our youngest member, Steve Becraft, had a top of maple with the circular handle attached. Rita Sochosky had three miniature cocobolo tops between $1/4$ and $1/2$ inch in diameter. My fingers were too big to spin them. Dick Milligar had an old-style throwing top of walnut and carved maple. Lloyd Walsh had a large finger-spun top of cascara. Glen Burki had a nicely decorated pull-string top of bubinga and hard maple. Ed Drabik and Norm Parker had tops that appeared to be inverted. They had a 3-inch ball on top of a long point, with the top spinning on the long point. Norm added an American flag stuck in the top of the top that spun with the top. Very patriotic. I made my pull-string top out of lignum vitae heartwood I begged from Swede Pearson. (It'll spin a long time, eight minutes.)

The minimum of rules maximized the variety of designs. After all the tops were spun, the vote was taken. Don Kemper presented the winner, Glen Burki, with the $50 gift certificate. As with earlier contests we have held, the competition contributed to a good meeting.

—Dale Larson, Gresham, OR

A minimum of rules contributed to a variety of designs at the Cascade Woodturners top competition.

FOR THEIR OUTSTANDING CONTRIBUTIONS in 1995, winners of the third Annual Turners Tips Contest—Bill Stephenson, Loveland, OH; William G. Kissel, Yankton, SD; and Mike Kornblum, Mountain Home, AR—have each received a thank-you turning. Congratulations! Please join in and add your own tips to this year's contest. Send them to Robert Rosand, RD1, Box 30, Bloomsburg, PA 17815.

Filling hairline cracks

When I want to fill those hairline drying cracks in my nearly finished turning, I reach for 320-grit sandpaper and my bottle of cyanoacrylate adhesive. A light sanding across the crack fills it with wood dust. Now it's time to put a drop of adhesive on the crack. I've found that the smallest hole in the nozzles on the plastic bottles gives me too much adhesive. Instead of applying the adhesive directly, I take a small piece of paper towel, twist it between my fingers to make a toothpicklike tool. Apply a drop of adhesive to this (not over your work) and use it to carefully paint adhesive over the crack. One or two repeats of this procedure will fill small cracks. Larger voids may require prepacking with very small turning chips followed by adhesive. This system used very carefully avoids staining the wood surrounding the crack.

—Charles Brownold, Davis, CA

Remember emery

Collect used emery boards. They are very convenient for applying glue on small projects. Reuse them. The glue stiffens the board with each use.

—Leonard Klima, Sacramento, CA

Chalk this one up to 3M

Power sanding has become the salvation of those of us with less-than-perfect tool control. Unfortunately, the prepared sanding disks can be expensive. Recently, while sanding a particularly resinous green cherry bowl, that expense became clear as I was forced to discard clogged disks after only a few minutes of contact with the wood. I recalled a 3M promotion where the company rep explained the advantages of their new "white" abrasive paper developed for the fiberglass industry. It seems the paper is coated with a zinc lubricant compound that sheds resin buildup and inhibits clogging. I produced a similar effect with regular blackboard chalk. Just touch the side of a chalk stick to a new, rotating disc before it makes contact with the work. You'll be amazed how much longer your disks last before clogging.

—John Lorch, Bolton, CT

Prevent stuck faceplates

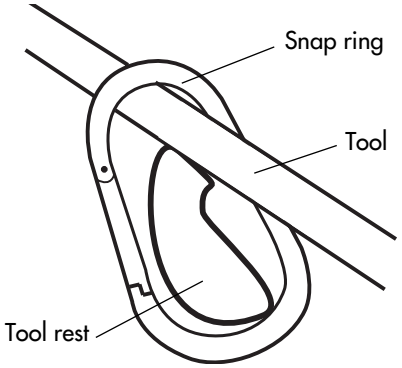
Bottle cap rings, the security section that separates from the top when you open a new bottle, can be used as a washer between your faceplate and your headstock shoulder. It ensures easy removal of the faceplate after working tightens it up. I have a Sears Craftsman with a $^3/_4$-inch x 16 tpi spindle, which is the same size as the safety ring on a 16-oz. pop bottle. Larger sizes, as from aspirin and other medicine bottles, can be used for larger-diameter (Delta or General) spindles.

—Lyle Terrell, New Orleans, LA

Support for the "Raffan cut"

End-grain hollowing with the "Raffan cut," wherein the gouge travels from the center out to the upper edge of the work, is very effective for small bowls, goblets, and cups. (See the video *Turning Wood with Richard Raffan,* The Taunton Press, 1986.) When turning pieces much over 2 inches, the turner may tend to use the shoulder of the bowl as a support. This can cause problems such as chipping the supporting wood.

It is possible, however, to support the tool without using the wood shoulder of the bowl. A "snap link" fitted to the tool rest will provide straightforward assist. Snap links, available in hardware stores, are spring-load connectors for chains, strapping, and other ties. Using one around the tool rest and against the tool-rest center, narrow end up, can provide a secure, stable, almost vertical, support. It is also possible to use this as an assist when cutting on the inner left side of facegrain bowls.



To find the correct size snap link it may be best to take the tool rest into your local store for a fitting. A snap link for a $^3/_{16}$-inch chain fits most light-duty tool rests. Try a snap link for a $^3/_8$-inch chain on a heavy-duty tool rest.

—Robert C. Opdahl, Hurley, NY

The cheaper the better

To replace expensive cyanoacrylate glue "super solvent," even better than alcohol is acetone. It works as well or better than the commercial stuff, and costs $3 a quart at Wal-Mart. Be sure to ventilate!

—William G. Kissel, Yankton, SD

Float your oil to forestall gelling

Finishing materials formulated using tung oil, once opened, tend to gel rapidly, even if you pour the contents into smaller jars. Here's my remedy: After you've finished applying a coat, displace the used volume with water, filling the jar to the top, and put the lid on tightly. The finishing material is immiscible,

lighter than water, and floats to the top. The interface does get scruffy looking, but there is no effect on the finish or on the results you can achieve with it. Obviously, it is a good idea to avoid tipping the jar to pour. I use paper towels for applying the finish, just dipping them into the top of the jar.

—Phil Drinker, Belmont, MA

Working with the grain

Most chain saws are sharpened at angles to maximize the efficiency of cutting across the grain. Special "rip" chains are also available for cutting with the grain. Few of us care to go to the added expense of an additional chain nor the extra time of taking the saw apart to change the chain simply because the wood grain is running a different direction. While cutting bowl blanks from a log, consider the time-tested technique of using a wedge or a froe to rive the wood in the direction of the grain. Most domestic woods can be easily split, those with interlocking grain, such as sweetgum or elm, being exceptions. With the log rived in half, take up the chain saw again to cut the bowl blank nearer to round across the grain.

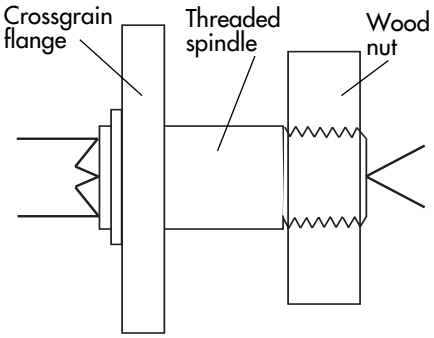
When preparing wood for spindle turning, especially chair parts or handles, rived wood will have greater strength than sawn wood, for the grain will retain its integrity.

You will also find, perhaps with a little practice, that the wedge and froe are faster, besides not clogging with shavings or running out of fuel.

—Bill Stephenson, Loveland, OH

Wood grinding-wheel arbor

A wood grinding-wheel arbor for the lathe can be made using a Beall or Klein threading jig. Attach a crossgrain flange to a spindle and thread the spindle, along with a matching nut to lock the grinding wheel onto the spindle. The setup



runs between centers and can be installed or removed in seconds. Since it is at the same height as spindle turning, you hold the same angles.

—Lyle Terrell, New Orleans, LA

Elephant man

When sanding longer spindles on the lathe, suspend a lightweight, 4-inch-diameter hose connected to your dust collector from around your neck so that its inlet winds up somewhere between your waist and your chest. A guitar strap or equivalent plus some ingenuity to suit your setup will work fine to hold it comfortably in place. Airborne dust coming off the workpiece, which would otherwise go straight into your face and elsewhere in your shop, is drawn instead immediately downward, away and into your dust collector where it ought to be. By suspending the hose from your neck it moves with you as you work along the length of the workpiece yet leaves your hands free to do other things (like generate the dust!).

—Mark Salusbury, Markham, ON

Stronghold chuck shims

I discovered the One-Way Stronghold Chuck at the 1994 AAW Symposium—what a godsend! Seating the wastepiece fully into the jaws requires a full $1/2$ inch of material. In those cases where I don't want to waste that much of the turning blank, I use a $1/4$- or $5/16$-inch-thick turned disc as a shim inside the chuck face to reduce the waste to only $1/4$ inch or even $3/16$ inch. That still provides plenty of grip for small-to-medium-size turnings. I am sure similar disks could be used with most brands of chucks.

—Darrell L. Rhudy, Raleigh, NC

Upgrading your tailstock center

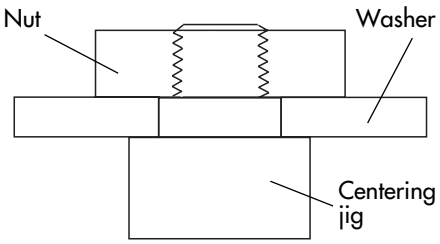
Most ball-bearing tailstock centers were designed for turning kiln-dried spindles and many come with only the cone-shaped center points, a carry-over from metal lathes. Cough up the extra bucks for a good live center that comes with interchangeable tips, including two sizes of cup inserts. These cup-shaped tips won't split the wood under pressure from the tailstock the way cone-shaped tips will. They cost about $80, but they'll save the wood from flying off the lathe. And should the bearings wear out, they can be repacked.

—David Ellsworth, Quakertown, PA

Centering shop-made faceplates

If Martin Meyer (*American Woodturner*, September 1995, page 2) would like to go back to the nut-and-large-washer faceplates, he should have a machinist make a centering jig, which is simply a threaded spindle with a concentric shoulder to match your nut and washer.

Drill holes in the washer first, then set the washer and nut on the center-



ing jig. Clamp the bottom of the jig in a vise and spot-weld the nut to the washer. With the centering jig, all faceplates will be the same and true. I use lots of them for my $3/4$-inch x 16 tpi Sears lathe.

—Carl Swanson, Appleton, WI

FITCHBURG REVISITED

Second Biennial National AAW Chapters Exhibition

RICK MASTELLI

I SPENT SUPER BOWL SUNDAY ATTENDing the opening of the Second Biennial National Exhibition of the AAW Chapters at the Fitchburg Art Museum in northern Massachusetts. And while it is fair to say that only a few of the bowls were *super,* the show was a winner. Typical of work within the AAW, it evidenced a great deal of enthusiasm and pride. It spanned the range from simple, open-form bowls, rich with well-displayed wood figure, to painstakingly constructed segmented projects. Most of it was faceplate work, from platters to hollow forms, though there were a number of spindle-turned ornaments and end-grain goblets as well as a few sculptural assemblages. There was plenty of carving and some rather sophisticated coloring and texturing effects.

Compared with the first Fitchburg show (see *American Woodturner,* March 1994), the work overall was more mature. It was better focused, had more poise than that of the last, which encompassed a greater variety of scale, shape, and style. Extravagant attempts often precede the acquisition of the control necessary to pull them off. Evidently, the two years since the first show have involved some settling down, a growth in confidence as well as competence.

Self-juried by the AAW chapters, the exhibition, now an on-going series, yields the best mainstream work in the field. Perhaps leaving room for their less prominent colleagues, few nationally known turners participate. Tom Kamila of the Central New England Woodturners (CNEW) conceived and organized the exhibition as a way for burgeoning local talent to gain wider exposure. Twenty-four chapters accepted the challenge this time to choose one piece for every ten of their members. The jurying process varied from consensus to a series of ballots. The result was 120 pieces (about thirty more than the first show) sent to Fitchburg from all over the country. Each participant paid a $15 entry fee to cover the cost of return shipping. Members of the CNEW (most notably Amie LaFosse and CNEW president, Phil Bowman) unpacked, recorded, and prepared the pieces for installation.

From the museum's point of view, the show has a lot of appeal. Director Peter Timms points enthusiastically to the 1994 exhibition as one of the most popular in the museum's history, attracting some three thousand visitors. Opening day of the current show drew several hundred, and five pieces were sold, a record. The show is a breeze to stage, given all the help from the local chapter, and it's inexpensive. Already a second venue in Atlanta, GA, has been arranged for the fall, and the prospects for a summer site in the midwest are very good.

I had the opportunity to talk with many woodturners during the preview pot-luck dinner that the museum hosted for the CNEW the night before the opening, and with the general public on opening day. Local woodturners were thrilled with the chance to see so much good work from all over the country. Bowman handed out slips of paper and asked each of us to write down our four favorite pieces. The exercise precipitated dozens of studious conversations, as we leaned over one

One of two 1,500-sq.-ft. rooms, above, that housed 120 turnings from AAW chapters all over the country. At right, two members from the hosting CNEW chapter study one of the more sophisticated pieces in the show, Betty Scarpino's (IN) turned, carved, bleached, and textured walnut plate, "Four Connections."



Three pieces, typical of the sure sense of form and detailing evidenced throughout the Fitchburg show: Bill Stephenson's (OH) "Catalpa Chieftan," left, is a big (16¼" dia.), gentle piece with all the stately demeanor its title suggests. Tom Clark's (MI) "Cherrywood Vessel," center (13" dia.), with spalted maple and walnut detailing, does justice to the Southwest pottery forms that inspired it. And Bill Haskell's (CA) "Ascension," right (6" dia.), celebrates the pewterlike coloring of an aged madrone burl.

another's shoulders and shared perspectives. We all learned something about how many ways there are to see and appreciate work into which so much care has gone. The general public was captivated, too, and full of questions. "That's really one piece of wood?" I would be asked over and over, and I got to explain the way trees grow, spalt, get laminated, turned inside-out, textured, and colored. Planned later in the show's run are two coordinated events at the museum: lathe demonstrations by members of the CNEW and a walk-through critique with Michelle Holzapfel. Thus a show like this becomes a focal point for all kinds of woodturning education and promotion. The public loves turned wood, and they want to learn more about it.

The show's impact grows out of the quietness and surety of the work itself. Perhaps this is attributable to the jurying process, dispersed, as it was, among peers. Grassroot values would seem to include understatement and fundamental achievements. Displaying special pieces of wood through simple, unassuming forms, for instance, is a theme running through this show. Not only form but texture and detailing are made to serve in subtle ways. Even the titles evidence an economy of statement akin to poetry: "Midnight Surf," a blackwood acacia bowl by Susan Hardenbrook (OH), calls attention to the irregular line between sapwood at the rim and the heartwood below it that moves around the bowl looking like the edge of a miniature sea. The title "From the Forest Floor," (pictured on page 1) by Stephen D'Arc (CA), speaks not only of the oak leaves carved in the top of a large hollow form, but of the rich, dark figure of the madrone burl it is made of. Herbert Medsger (CA) used form and title both in his "Solar Burst" to focus attention on the graphic energy of a piece of spalted birch. And "Catalpa Chieftan" by Bill Stephenson (OH) projects power and dignity through gentle lines and a soft, natural texture.

There are technical tours de force, including a reversible hollow form by Gary Johnson (MO) that comprises 1,538 segments (pictured on page 1), and an "Inside-Out Vase" by James Neff (PA). In both these pieces, tasty proportion and crisp detailing prevail without being overwhelmed



Extraordinary figure was displayed in suitably restrained forms: at left John Lorch's (CT) spalted maple bowl (13" dia.) and Herbert Medsger's (CA) spalted birch "Solar Burst" (10" dia.). Technical tours de force also evidenced tasty proportions and crisp detailing: above, James Neff's (PA) cherry "Inside-Out Vase" (8"high).

The top of Richard Jenkins' (TX) "Early Texas Pitcher" (pictured in full, 8¾" high, on the front cover of this magazine) displays exceptional sensitivity to the transitions of form: from handle to spout, from outside to in.

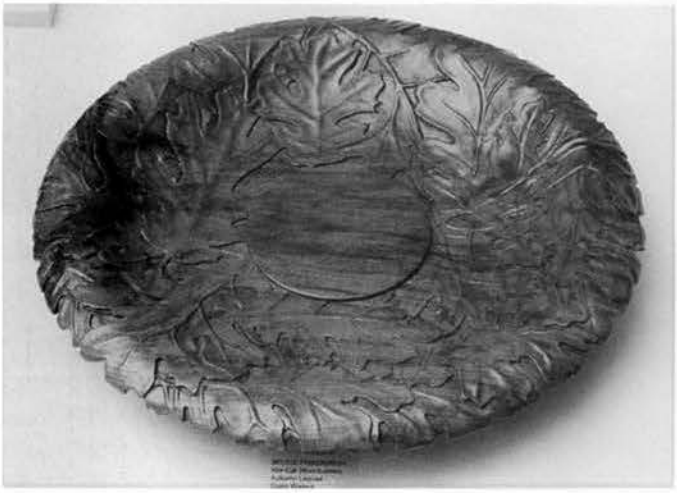
by their virtuoso workmanship. Even simple, open bowls were done well. John Lorch (CT) and Leonard J. Barry (MD) did right by intense pieces of spalted maple, and Norm Hinman (CA) turned a wonderfully light bowl of cascara, satisfyingly thin, without turning it into a potato chip.

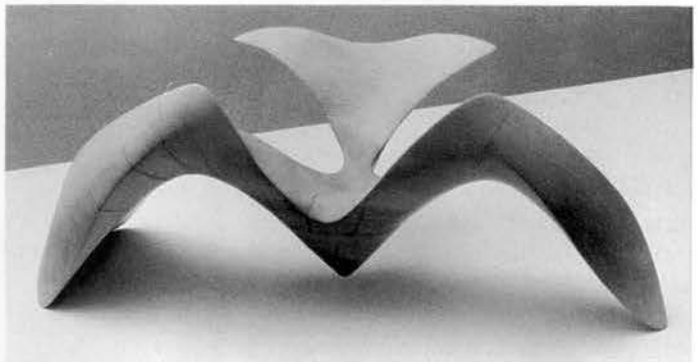
It was gratifying to see work in this show inspired by project articles published in earlier issues of this journal: Peter Smith's spice box (September 1994) and Rodger Jacobs' three-legged bowls (March 1995) both served as models for competent and imaginative renditions.

My favorite piece was no showboat, but you can't miss it on the front cover of this magazine. "East Texas Pitcher," by Richard Jenkins (TX), struck me as entirely attractive. (I encountered it first without seeing the side that includes a void; later still I came to appreciate that, too.) What impressed me was its serene embrace of opposites—weight and grace, energy and poise, warmth and iconic strength, in short, it is a beautifully balanced piece. The mass of its rotund bottom is offset by the asymmetrical accents of its handle and spout. The edges are defined with surety, yet with an ease that allows the outside of the form to flow through them to the inside. Rarely will you see a piece whose outside is better integrated with its inside than in this piece by means of this top edge. Balance is also struck by the softness of its wax finish matching the richness of its deep, red, cherry color. It all seems so comfortable with itself. Beyond that, it captures its function without being functional. It seems made of the very liquid it ideally might hold and pour.

Another thing: So much carving we see in woodturning is applied to a turned surface, as decoration, as embellishment. Carving also serves sculptural effects; sometimes the carving predominates, and you can hardly locate the lathe-turned forms that may have generated it. In this piece the carving and the turning are totally integrated. If "Best of Show" were to go to the most fully integrated, pacifically composed piece, I'd vote for Jenkins' pitcher.

Rick Mastelli is editor of American Woodturner. *Photos by the author. The show runs through March 24 at the Fitchburg Art Museum (508/345-4207) and will be at Atlanta's Spurill Art Center (770/394-4019), September 20–November 1. If your chapter did not participate in this show, there's always next time. The Fitchburg Art Museum is already committed to a third show in 1998.*





Carving ranged from bas-relief, as in Bruce Friederich's (CA) 20"-dia. claro walnut platter (right), "Autumn Leaves,"to imaginative sculptural forms, as in Augustine Della Vecchia's (CT) "Mark Twain's Maple," 20" long (above).

"Revolutions in Wood"

A view of the Mark Lindquist retrospective

DAVID ELLSWORTH

A RETROSPECTIVE EXHIBITION IS MORE than an opportunity to see the development and coherency of an individual's life-long work. It is an opportunity, too, to reassess the entire context of this work and to understand how the artist may have helped shape that context, even as he was influenced by it. From a maker's point of view, a retrospective represents a great personal honor and achievement, especially when the body of work will travel to a number of museums, including the Renwick Gallery of the National Museum of American Art in Washington, D.C., and when the show catalog is a rich, impressive, essential publication. Such is the case with "Revolutions in Wood," the first retrospective exhibition of woodturner and sculptor Mark Lindquist.

With forty-two pieces, the show covers the several stages of Mark's career from 1969 through 1995. It is a broad range of work that includes bowls, vessels, covered jars, and totemic sculpture. The exhibition catalog contains twelve black-and-white and twenty-six color photographs, a strong text by Robert Hobbs, and a complete chronology of Mark's personal and professional history.

In observing the pieces, one is immediately struck by the breadth in imagery supported by a distinctive design-style. The work reflects a very personal vision, a vision reinforced by the philosophies of Zen Buddhism and the sculptures of Constantin Brancusi. Mark has always straddled the line between craft and art, yet it is clear that his overriding aesthetic—the root of the content of his work—has always been purely sculptural. What is not immediately apparent is that it has also been Mark's pioneering advances in tool design and machine technology—adapting a radial-arm saw to fit the tool-rest carriage of a metal lathe and then replacing that saw with a chainsaw to carve wood, for instance—that would help lead him through his creative efforts.

At the age of 45, Mark's approach balances visual idealism and conceptual truth. There are moments when the nature or condition of the material itself has inspired the idea being explored (Photo 1), while other works show a mature design style in search of the right material (Photo 2). Neither of these methods of work is uncommon among artists in other crafts, particularly those working in clay and glass, where the plasticity of the material lends itself to a rapid digestion of one's ideas. But it is far more difficult in wood, where each object must be explored to its conclusion before its strengths or weaknesses can be realized. Ultimately, it is through making that idealism and truth join hands, where one begins to measure, object-by-object, an understanding of value through time.

The result of these personal explorations is that over the past quarter century Mark has contributed to the field of contemporary crafts a rich vocabulary of images and concepts that has influenced and inspired an entire generation of woodturners throughout the Western world. Primary among these have been his use of spalted wood as a decorative motif; natural topped burl bowls (Photo 3); bowls with carved and incised surfaces; bowls emerging from bowls (and bowl blanks); and totems (Photo 4). Mark's work is most distinguished by a combination of powerful forms and a rich variety of surface treatments. Whether sanded, shaped, etched, carved, or cut with the chain saw, these surfaces are not simply applied as decorative features to enhance existing forms. Instead, they have been thoughtfully integrated into the forms and, thus, are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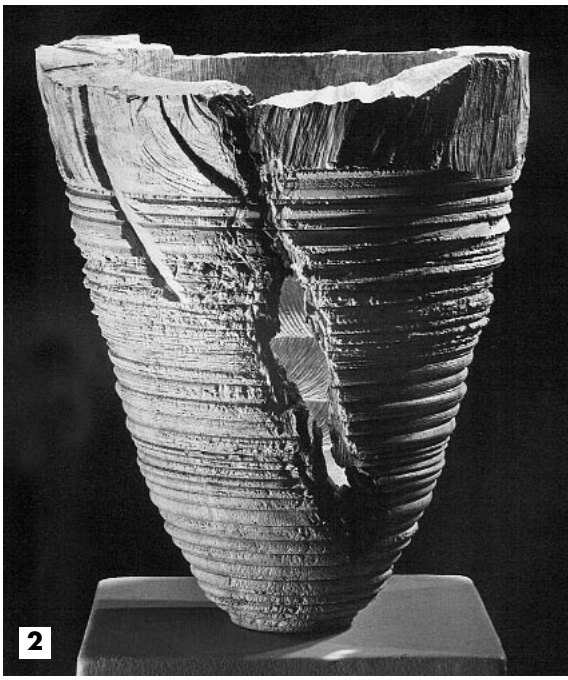
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Above: "Natural Fault Covered Jar," 1975, cherry burl, 3¼" high, collection of Joshua Lindquist. Right: "Ascending Bowl #5," 1981, spalted maple, 18" high, collection of Mr. and Mrs. Richard Winneg.

Above: "Spalted Elm Natural Top Bowl," 1981, spalted elm burl, 16" high, collection of Arrowmont School of Arts and Crafts. Right: "Mongaku," 1989, cherry, polychrome, 75" high.

inseparable from them (Photos 5, 6).

Common to other pioneers, Mark's personal journey has not always received a positive audience. During the early 1970s, traditional woodturners laid harsh judgements on anyone who dared violate the surface of their precious material—much less with body grinders and a chain saw. And leaving a bark inclusion in a salad bowl of spalted maple as early as 1970 (photo 7) certainly did not endear him to the mainstream woodturning community.

Most of the criticism came from those who didn't have a clue as to what he was doing, or why. The reaction challenged the core of his philosophy and his purpose as an artist. Looking back, we see how incomplete was the working vocabulary within the existing language for turned objects that would have helped validate his efforts. For Mark, his work *was* this new vocabulary, and he preferred to speak to his detractors through his objects. His father, Melvin, on the other hand, well noted for his inimitable humor as well as his turnings, spoke far more directly, once remarking, "Mark would hollow out a bowl with his teeth if he had to."

Adding fuel to the fire were the prices Mark was asking for his turnings, far higher than those of other nationally recognized turners of the era. But, again, Mark was not working within the traditions of a craft-consciousness that favored function or serviceability at accessible prices. Instead, he was confident in his foundation as an artist and so charged art prices for art objects. Ultimately, this confidence would contribute to a new awareness of the image of woodturning to such a level that a sculpted bowl could now be considered as "art" and, therefore, as an investment. It was a groundbreaking, gutsy move that would draw the attention of a whole new segment of the buying public, namely, the collector. It also helped set the stage for the prices that all woodturners receive for their turnings today, regardless of what style of work they produce.

Consider that Mark came into crafts from the fine arts when the world of craft was engrossed in a movement toward self-discovery, which typified life in general in our post-1960s society. The creative juices were flowing from artists and craftspeople in all media with an explorative, sometimes explosive dynamism. In addition, the concept of craft-as-art was being challenged, and makers struggled to achieve a level of credibility. Craftspeople and artists migrated toward the independent life of the "studio craft" movement (often in protest of the political constraints of academic art) and everyone, it seemed, was questioning an emerging new "philosophy of craft" — the reason for making — as introduced through the East-meets-West influences of authors Bernard Leach (England) and Soetsu Yanagi (Japan).

By the late 1970s, the foundations of technique, design, and content that have become commonplace in craft styles today were either already established or soon to be formed. The next hurdle was to develop a level of creditable identity to the term "craft," that would parallel the fine arts from which so many of the recent influences on craft had been drawn. For all of craft, this meant patience, hard work, and time. For woodturners, it meant developing a broad range of mature styles. This challenge was met through the con-

5

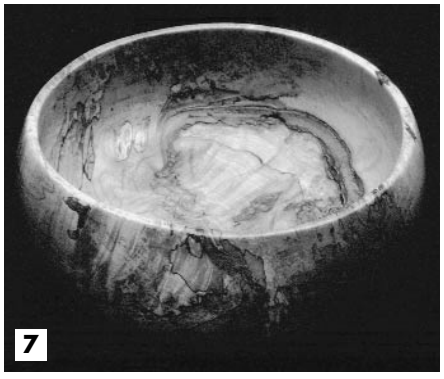
6

Left: "Ascending Captive #1, 1992 maple burl, 30" high, collection of John and Cheryl Ferguson. Above: "Ancient Inner Anagogical Vessel Emerging," 1994, cherry burl, 18" dia., collection of Arthur and Jane Mason.

tributions of many people and, here, Mark was a major player.

It was within this arena that woodturners began to discover themselves, the world of contemporary crafts they had entered into, and Lindquist's philosophy. And what they found was rather shocking. First, while there were numerous turners doing excellent work, there was no cohesive bond between them and no sense of a collective identity that existed in the other media fields. In fact, few turners even knew one another or had seen each other's works except in photographs in the occasional articles appearing in *Fine Woodworking* magazine. Secondly, most turners had little exposure to the broad history of craft that surrounded them. There was no critical language distinguishing a "bowl" from a "vessel" (nor much understanding as to why one would do so) and little exposure to the inner-connectedness of objects in wood, clay, basketry, etc. Moreover, there was a fear of the word "design," and whatever pricing structure that did exist was based solely on a dollar-per-hour, dollar-per-inch mentality. Little wonder, then, that Mark's approach raised so many questions and provided so few answers. Turners were simply looking elsewhere.

Fortunately, this lack of self-awareness would see a major change since the mid-1970s, through greater participation in craft shows, turning workshops, and symposia, and the formation of the American Association of Woodturners, followed by the Wood Turning Center.



7

"Turned Spalted Bowl with Bark Inclusion," 1970, 11" dia.

For me, this retrospective exhibition does more than just acknowledge Mark Lindquist's artwork and his career as a turner and sculptor in wood. It also validates how one person's creative vision *can* contribute to a collective change and, subsequently, how that change can benefit an entire creative field.

EXHIBITION SCHEDULE: *Renwick Gallery of the National Museum of American Art–Smithsonian Institution, Washington, D.C., March 15–July 7, 1996. Virginia Beach Center for the Arts, Virginia Beach, VA, July 28–September 8, 1996. Florida Gulf Coast Arts Center, Belleair, FL, April 25–June 22, 1997. Show catalog available for $25 through the University of Washington Press, P.O. Box 50096, Seattle, WA 98145, or the Wood Turning Center, 215/844-2188.*

David Ellsworth first met Mark Lindquist and his father, Melvin, at the Pacific States Craft Show in San Francisco, CA, in 1977. They have exhibited together on various occasions and remain colleagues and friends.

EIGHT-PIECE RING TURNINGS

Part I: The building blocks of segmented work

WILLIS M. HUNT

SOONER OR LATER, EVERY NEWCOMER to turning tires of practicing on spindles, bowls, and plates for the family and begins looking about for "the next step"—entry into the realm of finished and salable turnings. From many viewpoints, bowls, vases, boxes, plates, and lamps based on an overlapping eight-segment ring construction are ideal for this purpose. There are several sources, including the notable *Creative Woodturning* by Dale Nish, that describe methods for this eight-segment ring turning. Unfortunately, all pass over or omit altogether many of the details necessary for an attractive finished product. What follows—in two parts—is a detailed roadmap that will lead to desirable results. Here in Part I, I cover design, cutting, and assembly of the segments into rings. In Part II (to be published in June) I will cover assembly of the rings into a turning blank and the actual turning.

Why eight segments?

There are a number of layered design systems based on rings or disks glued together to form the stock for turning. Eight-segment ring designs are distinguished by having each ring made up of eight individual, overlapping pieces of the same or different species (Figure 1). We are not dealing here with the more exotic turnings in which each of the segments is built up out of many subpieces, projects that can comprise well over a thousand individual bits. Once the techniques for the eight-segment rings discussed here are mastered, expansion into more complex and higher-count types becomes manageable.

Among the advantages of the eight-segment approach, relatively inexpensive species can be used to good effect. Beech, birch, cherry, mahogany, maple, padauk, and walnut all present broad design alternatives and produce excellent results. In many areas, these are available in clear 4/4 dimension stock. Offcuts from a planing mill that serves the cabinetry trades make good material. Custom cabinetmakers themselves are a good source and can often be pressed into service for special machining as well.

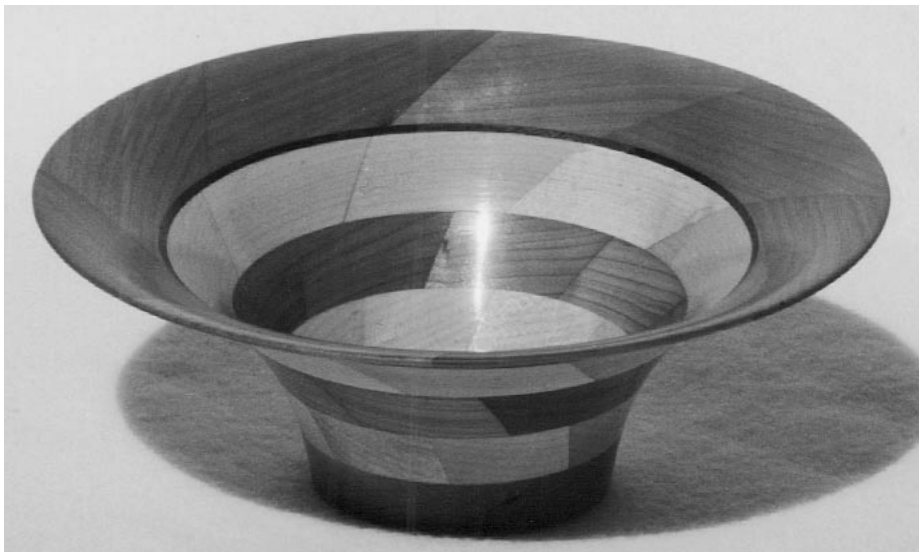


Figure 1: Segmented bowl of cherry, maple, and walnut, 9" dia.

Also advantageous is the grain orientation of eight-segment ring turning. The novice benefits from turning minimal endgrain. High-quality sanding and finishing is fast and easy. Interesting successions of different colors, grain patterns, and highlight reflections are well-displayed. Use of complementary or contrasting species and thin top banding rings adds to the turning's attractiveness. The unique appearance of the segments and rings makes these turnings stand out in shows. And low materials costs, compared to solid turning blocks of equal size, allows pricing for strong salability.

There are further advantages in production: Since the assembled workpiece already follows the general profile of the finished design, problems of significantly unbalanced initial operations are seldom encountered. The relatively lightweight Delta 46-700 lathe has been fully adequate for most of my segmented ring work. For other equipment, only a good table, radial-arm, or miter "chop" saw is essential. Access to jointing, planing, and wide-belt sanding machines is very helpful. But, lacking this, purchased stock finished to standard $^1/_2$- and $^3/_4$-inch thicknesses does nicely.

The downside

Most turners like to get the wood on the lathe as quickly as possible and often change their design ideas as the project progresses. Segmented ring turning requires detailed design before the stock is cut into segments. Once the stock is cut and assembled, design and dimensions are largely fixed. Careful attention to accuracy

Table 1:
45-degree Segment Divisions

C/L radius	Cut length*	Max. o.d.	C/L length
For 1 3/8-inch segment widths			
<1 1/2	2 5/8—Slide to center**		
1 1/2	2 5/8	4 3/4	1 1/4
1 3/4	2 3/4	4 7/8	1 1/2
2	2 7/8	5 1/2	1 3/4
2 1/4	3 1/8	6 1/2	1 7/8
2 1/2	3 1/4	7	2
2 3/4	3 1/2	7 1/2	2 1/4
3	3 3/4	8	2 1/2
3 1/4	4	8 1/2	2 3/4
3 1/2	4 1/8	9 1/8	2 7/8
3 3/4	4 1/4	9 5/8	3 1/8
4	4 1/2	10 1/4	3 1/4
4 1/4	4 5/8	10 3/4	3 1/2
4 1/2	4 7/8	11 1/4	3 3/4
4 3/4	5 1/8	11 3/4	4
For 1 7/8-inch segment widths			
2	3 3/8	6 1/2	1 3/4
2 1/2	3 5/8	7 3/4	2 1/8
3	3 7/8	9	2 3/8
3 1/2	4 1/8	10 1/4	2 7/8
4	4 1/2	11 3/4	3 3/8

* Includes "pull-back" adjustment for true centerline radius.
** See Figure 8.

and standard work practices throughout production are essential. Once you've wrapped your mind around these requirements and set up a system, segmented ring turning is easy and fun. Getting you there is the purpose of all that follows.

Setting up for projects

Before starting for the shop, some basic decisions have to be made for cutting the individual segment pieces. The basic building block for segmented rings is a trapezoid (Figure 2). As shown, each piece must have the angles for the non-parallel

Figure 2

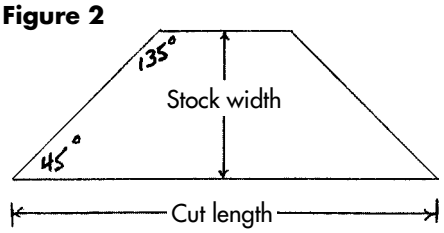
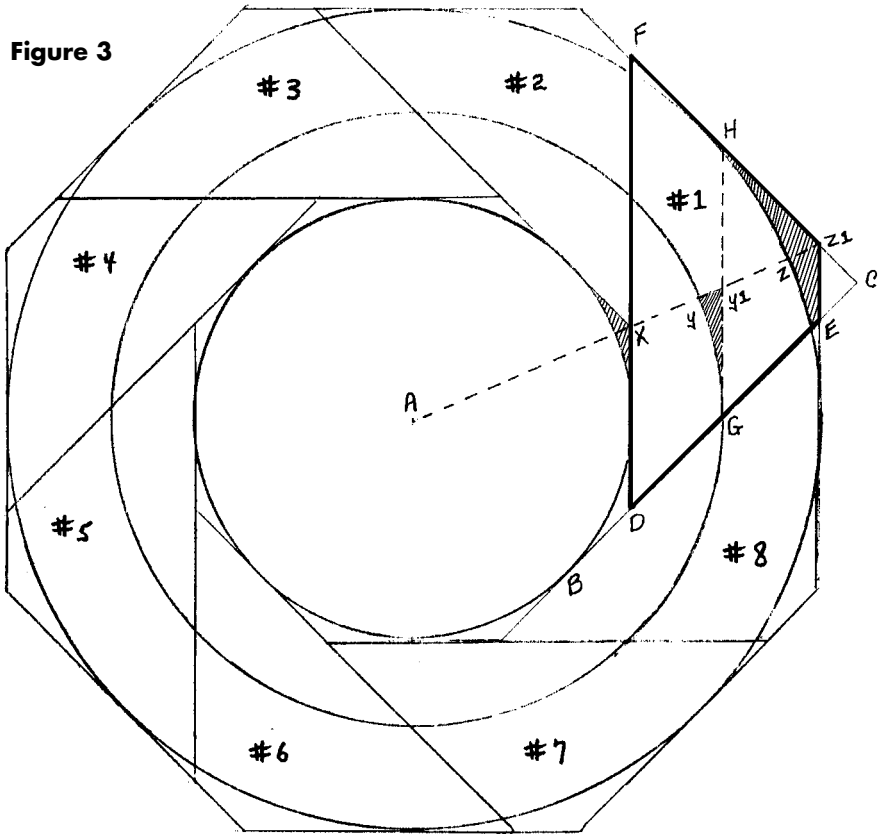


Figure 3



sides at 45 and 135 degrees. The key question in laying out any project is "What should be the stock width and cut length to yield the needed ring radius?" I have standardized on two stock widths and determined for each of these the segment cut lengths for each 1/4-inch increase in ring radius. These measurements are summarized in Table 1. Reviewing the following details will increase your understanding of the design process and help you avoid mistakes.

•A standard starting strip stock width of 1 3/8 inch satisfies 95 percent of my needs. Anything in a 1 1/4- to 1 5/8-inch range works well. I settled on the 1 3/8-inch standard based on an economical finished lumber rip of 1 1/2 inches with 1/8 inch allowed for jointing. If your saw and rip blade perform really well (90-degree cuts and smooth faces), the 1/8-inch jointing allowance can be omitted. I use a second standard width of 1 7/8 inch for unusual design situations illustrated later.

•Having nailed down one variable (width), the next step involves the segment cut length. You perhaps have the math capability to do this. I found full-scale drawings of rings of increasing radii much easier (Figure 3, for example):

1. Start by drawing a circle (A-Y) with a radius equal to the desired radius for the final centerline of the ring after turning. Follow this with two other circles, one with a radius 11/16 inch less (A-X), the other with a radius 11/16 inch greater (A-Z) than the first circle. These two describe the above 1 3/8-inch standard strip stock width.

2. Two lines tangential to the inner circle and 45 degrees apart (B-C and D-F) define two sides of the segment piece. The other two, C-F and E-Z1, are completed with tangent lines to the outside circle, as shown.

3. Line D-F is the cut length for the piece. The shaded areas demonstrate that the actual centerline radius of such a piece will be greater than indicated by the circle with radius A-Y. For accurate sizing of the desired ring centerline, a "pull-back" adjustment must be made to reflect the radius A-Y position. This will involve a reduction of the cut length D-F. The

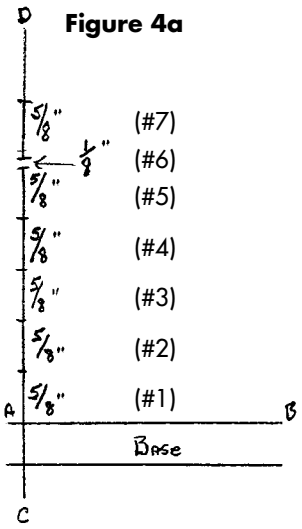


Figure 4a

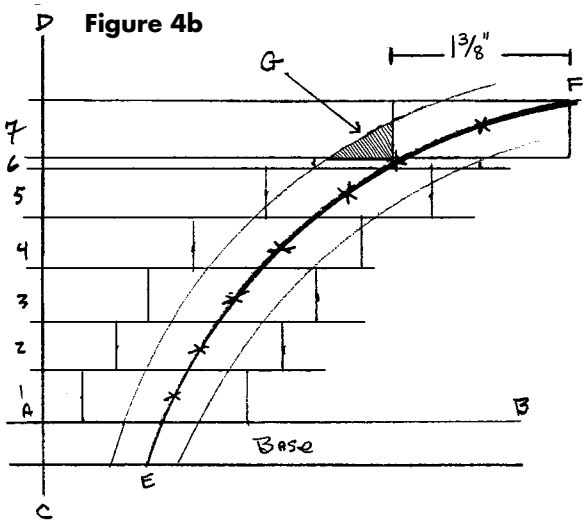


Figure 4b

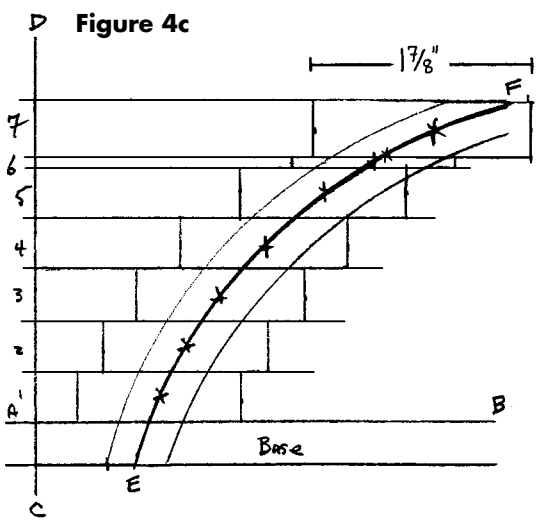


Figure 4c

cut lengths in Table 1 include these adjustments.

4. In Figure 3, seven additional segment pieces, shown in lighter lines, confirm the ring assembly.

Two other dimensions are important in some instances. G-H describes the centerline (C/L length) of the segment. Multiplying this by 8 indicates the approximate length of stock needed for a ring (not including allowance for saw kerfs and short-end waste) if cutting is done by flipping the stock to get the 45-degree angle for sequential pieces rather than changing the saw setup. A-Z1 indicates the greatest across-the-ring measurement. If, like mine, your lathe has a 12-inch swing and in your design one of your rings has the A-Z1 length at over $5\frac{3}{4}$ inch (minimum $11\frac{1}{2}$-inch swing required), you are getting rather close for comfort.

Table 1 provides all the needed measurement information for rings with centerline radii up to $4\frac{3}{4}$ inches with my $1\frac{3}{8}$-inch stock and 4 inches for the $1\frac{7}{8}$-inch material (both barely within my maximum 12-inch swing). Why the short list for $1\frac{7}{8}$-inch stock? At a 2-inch radius, the inside A-X dimension is just over 1 inch; at the 4-inch radius, the swing required is $11\frac{3}{4}$ inches. The full practical range is covered by the five radius data points. For intermediate radii, interpolation is fine. I have copies of this table on my drafting board and over the saw in the shop; I find I need to refer to them regularly. If you elect to use different stock widths, lay out one of these full-scale drawings to get the appropriate segment cut length. You can then use the difference for that radius between your length and that in Table 1 to get the complete set.

Only one more piece of dimension information is needed before we sit down to create a design—the thickness of the segment piece. I use two standard stock thicknesses, $\frac{5}{8}$ inch and $\frac{7}{16}$ inch. Again, these reflect allowance for jointing and planing the finished $\frac{3}{4}$- and $\frac{1}{2}$-inch stock I typically buy. I find that for bowls or other turnings under 5 to $5\frac{1}{2}$ inches in diameter and/or 4 inches high, the thinner stock is more attractive and displays multiple species better. Where thin top banding is used, my two standard thicknesses are $\frac{1}{8}$ and $\frac{1}{16}$ inch in keeping with the scale of the other rings. Many woodworker shops and mail order houses sell $\frac{1}{8}$-inch-thick stock; most planers will get down that far. For planing to $\frac{1}{16}$ inch, pick a piece with fairly straight grain to minimize chip out. Mount the stock on a flat carrier board with several dabs of hot-melt glue and make very light passes to get to $\frac{1}{16}$ inch. Afterwards, the hot-melt can be removed easily. The planer doesn't know the difference.

Table 2 summarizes the standard dimensions I have settled on. There is no magic in them. But if you decide to change, check carefully on the effect, particularly for ring radius.

Table 2: Standard Dimensions for 45-degree Segments

Stock widths	
Standard	$1\frac{3}{8}$
Wide	$1\frac{7}{8}$
Stock thicknesses	
Standard	$\frac{5}{8}$
Thin	$\frac{7}{16}$
Top band thicknesses	
Standard	$\frac{1}{8}$
Thin	$\frac{1}{16}$

Designing a bowl

Let's design a segmented bowl. This needs to be done carefully and full-size to avoid errors in cut length and other measurements.

Figure 4a is the starting point. A-B is the upper surface of the base. The division lines on the vertical line C-D are $\frac{5}{8}$ inch apart, the thickness of each ring—with one exception. Ring #6 is $\frac{1}{8}$ inch thick, for a thin top band.

In Figure 4b, I've added a half-profile of the bowl design (the heavy line E-F). I've also added cross-sections of each $1\frac{3}{8}$-inch-wide ring with centerlines positioned midway in each of the segment thicknesses (at

the Xs). The objective is to provide a continuous band of stock at least 1/4 inch on each side of the design profile line E-F (the lighter profile lines). When turning, this 1/2-inch zone really is all you will have to work with.

Right away, there is a problem. At the top ring (#7), the radius of the bowl increases so sharply that the continuous 1/2-inch allowance is violated (shaded section G). You could make it through by decreasing the top ring radius—shifting its position to the left. The design profile would be altered to restore the safety allowance. But there is another answer that eliminates this design constraint. Switch to the 1 7/8-inch-wide stock as in Figure 4c.

Measure from the vertical line C-D to the design profile at the thickness mid-point for each ring (at the Xs). This establishes the segment centerline radii. Table 1 converts this information to the cut length for each ring's segment pieces (Figure 4c). Adding species identification completes the design and sets up for the segment cutting (Table 3).

Several tips are appropriate at this point:

•For rings with an indicated radius of less than 1 1/2 inches, the 1 1/2-inch value in Table 1 can be used for segment cut length. Otherwise, with the 1 3/8-inch stock width, double-cutting at each end of the segment will be needed to get the tiny segment piece. The assembly technique for handling this situation will be dealt with in Part II of this series.

Table 3: Specs for bowl in Fig. 4

Ring	*Species*	*C/L radius*	*Cut length*
7	cherry	4	4 1/2
6	walnut	3 5/8	4 3/16
5	maple	3 1/4	4
4	cherry	2 5/8	3 3/8
3	maple	2	2 7/8
2	cherry	1 3/4	2 3/4
1	maple	1 1/2	2 5/8

•Due to the great radius change at the top of the bowl in Figure 4b/4c, the exposed surface of a 1/8-inch accent banding ring (#6), which is cut diagonally, will be very prominent, especially if the species is high in contrast to those on either side of it. If this appearance is undesirable, shift from the 1/8- to 1/16-inch stock. The minor change in thickness does not require a recalculation of the cut length. In our Figure 1 bowl, for instance, the thin band is 1/16-inch-thick walnut which contrasts highly against the maple and cherry rings adjoining.

•I generally try to design with at least six levels and an even number of levels (including the base and thin top banding). The former provides good display of the two complimentary species I typically use. The latter results in the base and the rim ring being the same species. Here I will usually go with the darker of the two principal species (again, the cherry in our sample bowl) to help visually contain the design. With experience, you will develop several exceptions to this general guideline.

Cutting the ring segments

With the standardized widths and thicknesses of the strip stock, there is no concern about going from one strip to another in cutting segments for the eight-piece ring. Attention can be focused on getting compatible grain patterns within each ring and assuring equal cut lengths (D-F in Figure 3).

You can cut the strip stock in several ways. My choice is a 10-inch power miter saw, but table and radial-arm saws should do equally well. I have marked stop-block settings for 45-degree cuts at 1/4-inch intervals on an auxiliary fence. Note that many of the cut pieces will be quite small. If the gap in the fence on a miter or radial-arm saw is too wide, the cut piece can rotate and jam the blade or be flung clear at high speed. Either way, this is a real safety hazard. Close up the gap as much as possible.

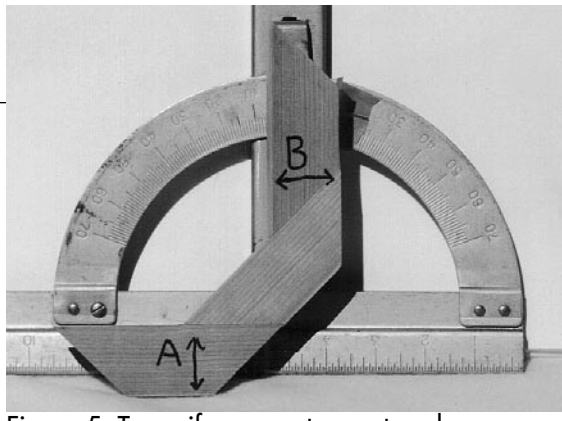


Figure 5: To verify your setup, cut and assemble three segment pieces and test for square.

I do not recommend hand saws or band saws. These tend toward poor performance on the following, which are very important for satisfactory results:

•The 45-degree-cut angles should be as precise and uniform as possible. Flipping the strip stock from one cut to the next saves material and may compensate for errors if the segment pieces are kept in the same sequence in assembling the ring. But it is a lot easier to get the saw setup right than keeping track of piece sequencing. Furthermore, as discussed in Part II, for many species with strong grain lines there is good reason not to accept this limitation. Verify your setup by cutting and assembling three segment pieces (Figure 5). The two faces A and B should be at 90 degrees—easily checked with your square. You still can be done in by any warp in the stock which causes changing contact with the saw fence as it is flipped between cuts. Careful saw setup and use of fairly short fences (12 inches or less) should help minimize such problems.

•The heel of the saw needs to produce a cut in which the sawn face is exactly 90 degrees from (or perpendicular to) the two side faces of the segment piece. Errors here will result in very visible gaps in the final prod-

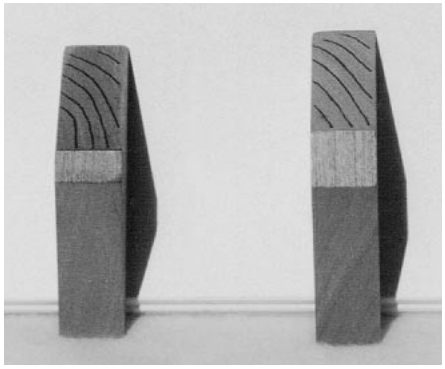


Figure 6: Grain lines marked for clarity so they can be oriented consistently during ring assembly

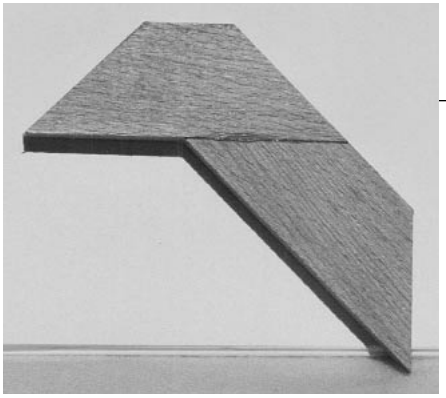


Figure 7: Glue ring segments in pairs, usually aligned as shown.

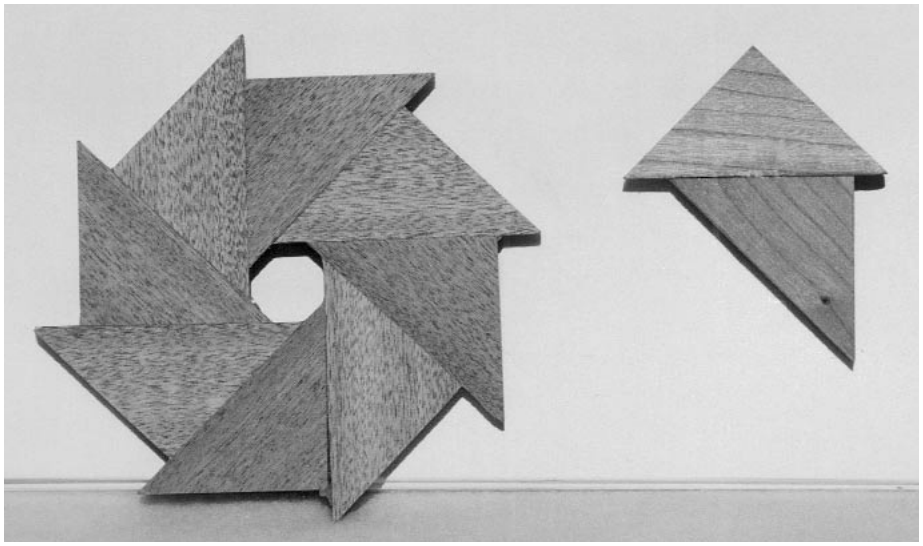


Figure 8: To accommodate a radius less than $1\frac{1}{2}$", shift the segments in relation to one another as shown.

uct. A fairly reliable check on this is to cut a piece of stock at 45 degrees; butting the sawn faces back together should show the cut at 90 degrees to the sides of the piece.

It is good practice to identify each of the segments with the appropriate ring number or letter. Avoiding one mishap that mixes the pieces for a number of rings will make this extra effort worthwhile.

Ring assembly

The assembly phase involves a lot of gluing over several stages. To minimize problems, I assemble each ring on a 12-inch-square, flat, Baltic birch plywood "platter" with wax paper stapled over it.

All faces should be smooth and shiny. "Whiskers" on the cut edges can be sanded off, but rough-cut faces indicate at least a dull blade, and this roughness will show up distressingly in the final turned product. It should also be remembered that the ring assembly is made up of miter/butt joints. The strongest glue joint will come from the cleanest possible cut faces.

In assembling each ring, the waterproof Franklin Titebond II PVA glue is my standard. Besides handling the moisture problems in things like salad bowls and planters, this single-part system is inexpensive and easy to use; it has good gap-filling qualities and a relatively short tack time; and it handles the miter/butt joints well. These points are important since minor gaps are inevitable, and I do not use clamping pressure in most instances. The "squeeze-and-rub" method of setting the glued faces works just fine and avoids the many jigs that would be needed for applying clamping forces to the array of differently angled and sized surfaces involved. The exception where I do find need for clamping pressure is in assembling the thin $\frac{1}{8}$- and $\frac{1}{16}$-inch top banding segments. In many cases the water in the glue is enough to cause cupping or twisting in these pieces. Here I use a second wax-paper-covered platter over the segments to sandwich the glue-ups, plus a weight on top for compression. An empty gallon paint can filled with sand is just right, and the handle is convenient.

The following are the recommended ring assembly steps:

1. The first step is orienting the grain lines on the cut faces of the segments so that they don't change erratically, curving up and down from segment to segment, in the final turned surface. I have found that arranging the pieces for the assembly of each ring so the grain lines are either all level or turn down (Figure 6) gives a pleasing effect. This arrangement will be impossible in most cases if, as discussed earlier, you are committed to assembling the segments for each ring in the sequence in which they were cut—half will turn up; the other half down.

2. Glue the ring segments in pairs (Figure 7). In most cases this involves setting the trailing point on the first segment even with the top corner of the second segment. But here is where we take care of those rings with a centerline radius under $1\frac{1}{2}$ inches. As the right-hand section of Figure 8 shows, the glue face of the second segment in the pair is shifted over so that its lead point is approximately $\frac{1}{4}$ inch behind the first segment's lead point. In the final assembly (on the left in Figure 8), this will result in a center hole about $\frac{3}{8}$ inch in diameter and will amply cover radius requirements out to $1\frac{1}{2}$

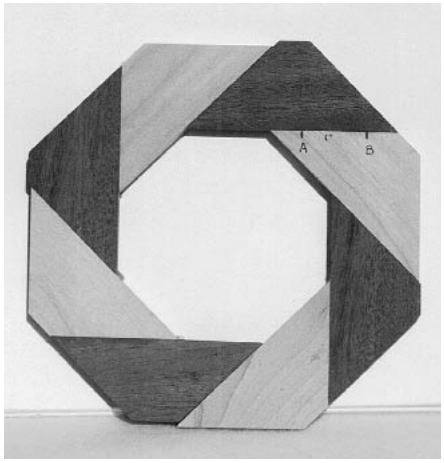


Figure 9: Assemble the glued pairs of segments into rings, making sure that the joints are tight in the middle of the joint line (A-B).

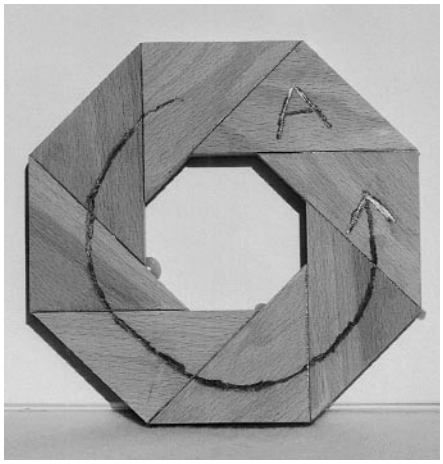


Figure 10a: As each ring is assembled, mark it for orientation in the stack so that the joint lines will be in the same direction in the finished turning.

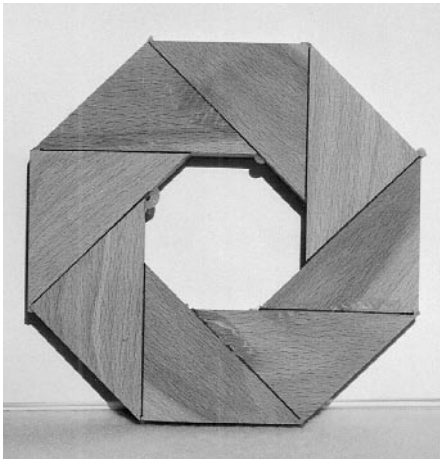


Figure 10b: Flipping the ring indicates the importance of orientation. Not only will the joint lines look odd, but turning in the wrong direction will yield tear-out.

inches, where the steps in Table 1 start. More precise centerline radii can be had by shifting the second segment to any point along the long side of the first. With a total shift so that both segment points meet, the center hole is closed and a "star" is formed. In all cases, make sure the segments are flat on the supporting surface. In about three hours the pairs should be set well enough for the next step.

3. Bring the pairs together to form the ring (Figure 9). This is where the use of the overlapping eight-segment ring helps. Notice that the faces to be glued are either parallel or perpendicular to each other. This "squared" condition makes manual adjustment of the four pairs fairly simple compared to trying to move all eight pieces (or other count combinations with their differing angles) at one time. Here is where the errors and problems relating to stock cutting come home to roost. If all the cut faces meet nicely, you have been lucky or very precise. Even with the best attention and care, problems will often appear at this point. Some sources suggest handling this by gluing pairs into fours and sanding or planing to close gaps. I have tried this with discouraging results. If you have been careful in your cutting, you should be able to manipulate the pieces so that they all join well in the center inch of the joint widths (Figure 9, line A-B). Since this is the continuous zone containing the stock for the final turning, results should be satisfactory. If this is not possible, cutting new pieces for this ring is the only real alternative—but check the saw setup first.

4. Planing or sanding both sides of the ring to remove glue squeeze-out and other problems comes next. I prefer sanding with a 6x48-inch belt sander. A variable-orbit power sander using 60- or 80-grit paper is effective if you take care to keep the tool level on the face of the ring. You need a flat surface to ensure good contact between the rings. (Note: If you use the from-the-base-up assembly procedure I will describe in Part II, this flat-sanding can be limited to the one side that will face the headstock.) As each ring assembly is finished, orient it for final assembly. This orientation is very important to ensure that all miter/butt joints run in the right direction. In Figure 10a the arrow points in the direction of lathe rotation (this surface will face away from the headstock). Inspection shows that at each joint between the segment pieces the trailing point of the lead segment is fully supported by the shoulder of the trailing piece. Just as important, cutting into the second segment will be "with the grain," avoiding tear-out there. I orient the rings on some feature that I can identify easily at any time. As in Figure 10a, I always choose the same segment in the top/right position (marked as A) and ensure that the long side is horizontal. Any other standard visual guide that produces the orientation shown would do as well. Figure 10b shows the result of turning the ring over; the difference is readily apparent, as is the potential for against-the-grain tear-outs. To avoid confusion (errors) in later assembly, I usually mark each ring with the proper orientation (the arrow) and a number or letter indicating where the ring locates in the final assembly process. The "A" in this case would indicate this is to be the first ring in the final workpiece.

5. All that remains is to cut a solid piece of stock (at least 4/4) for the base and set up for a faceplate. Your design will give the appropriate diameter. Using an eight-piece assembly for the base is not recommended. It is almost impossible to get the eight-pointed star centered in the final assembly, and an off-center position is immediately evident. Too, the bottom of a bowl tends to take more abuse than any other part.

Will Hunt turns in Lexington, MA. *He thanks Beth Ireland for her help and encouragement in preparing this article. Part II will appear in the June 1996 issue.*

FIVE WAYS TO AVOID A CATCH

Demystifying the demon

LYLE JAMIESON

IN RECENT ISSUES OF *AMERICAN WOODTURNER*, I have noticed that people regularly mention catches, as if they are commonplace happenings that seem to have a life of their own, popping up at the most inopportune time. *Catch*…what a paralyzing thought to take to the lathe with you! It must stifle much creative spirit. Does it stand between you and a thin-walled vessel? Is it really so unpredictable and uncontrollable? I think not!

During a demonstration at my local club meeting several months ago, I was cleaning up the bottom of the piece and working very close to a glue block. The corner of my bowl gouge caught the waste block ever so lightly and the telltale sound of a catch echoed out into the audience. I heard from the corner of the room, "AH HA! Even the demonstrator gets a catch." This was not entirely true. The piece I was working on was not damaged, the gouge was not even in contact with it. I got the catch on the waste block. True it was an error on my part and it could have been disastrous. But I was watching the bottom of my bowl, not the waste block. This is a much different experience than the surprise and shock of a catch inside a bowl.

Catches are not commonplace for me. They are rare and I know what I did when I've caused one. They do not sneak up on me like mysterious demons. In this article I hope to show how and why catches happen, what it is that sucks your tool into the wood when you get a catch, and how to avoid it.

Let's first define some terms. I am sure you have heard that we need to turn "with the grain," or "downhill." What does that mean? On a spindle, where the grain is parallel to the lathe axis, it is easy to see that "downhill" means cutting toward that axis. As the arrows show in Figure 1, each fiber of wood being cut

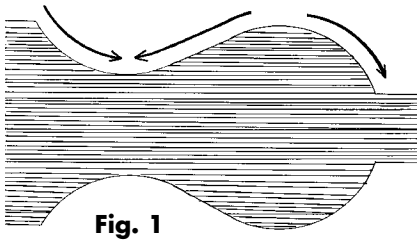


Fig. 1

(sheered or scraped) is supported by the fiber just below the one being cut.

In a bowl we have grain going perpendicular to the lathe axis, just the opposite of spindle turning. A cross section of the work (Figure 2) indicates that the direction of a downhill cut depends on whether it's on the the inside or outside of the bowl. But we can cut "downhill" till the cows come home and still get a catch. I will show why.

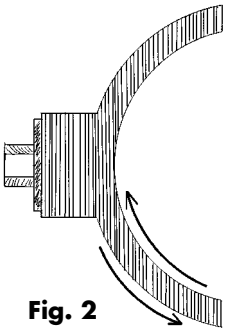


Fig. 2

In cutting, you move along a plane while the wood is moving around an axis. The force of the wood rotating against the tool on the tool rest is much more significant than the force you produce by pushing the tool along the plane. As the bowl rotates, twice in every rotation, it encounters both side grain and end grain, and in between you are cutting alternately with and against the grain. As you leave the side grain and approach the end grain, you are cutting "uphill" twice every rotation, and that creates the possibility of a catch (Figure 3). You can visualize now why your tool wants to get sucked into that end grain, and a catch happens.

I will discuss five methods to minimize the risk of catches: 1) use sharp tools, 2) ride or follow the bevel, 3) use a 45-degree sheer whenever possible, 4) support your tools on the tool rest, and 5) position your tool properly in hollow forms.

First, a sharp tool can sheer off those end-grain fibers cleanly and smoothly, while a dull tool will push, grab, and tear them out. You can do all the right techniques and still have trouble with catches if your tools are not sharpened properly. It is well worth the time and effort to make a grinder with an 8-inch aluminum oxide stone and a low-rpm set-up. I have an old $^1/_4$-hp motor and a pillow block and shaft. The pulleys allow me to gear the grinding wheel down to about 900 rpm. The slow speed allows me to grind more accurately.

Secondly, I think most catches come from allowing the turning tool to cut while it's not being supported by the bevel. Consider where you're most likely to encounter a catch: on the inside of a bowl—because that's where you're most likely to loose bevel contact. How do you make sure you maintain bevel contact? Try to visualize the heel of the bevel as you turn, and the edge will take care of itself. Ride the bevel. If no cut happens, no harm is done. But if you cut and don't have the support of the bevel, you flirt with a catch, even using sharp tools. Notice in Fig-

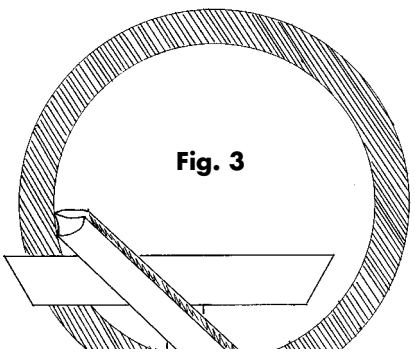


Fig. 3

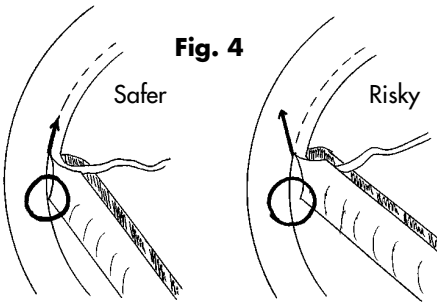


Fig. 4

ure 4 the natural path the cutting edge would take while riding the bevel. It is not necessary to use any pressure to ride the bevel. You don't want to burnish the wood with the heel; in fact, in a piece with voids or a natural-edge where there is no wood to ride, the bevel must follow the path where the wood would be.

The third aid to prevent catches is to maintain a 45-degree sheering cut with your tool. How do you sheer end grain? Take a trip back memory lane to junior high shop class and your first bird house. You probably took a hand plane and tried to clean up the end grain of a block of wood. The plane chattered, gouging and chipping the board until your instructor showed you how get a clean cut by angling the plane blade 45 degrees to the direction of travel on the board. If you present the cutting edge of your bowl gouge at a 45-degree angle to the radial movement of your work, you will get the same clean slice while turning that intermittently present end grain.

Try this first on the outside of your bowl, or watch the process on a spindle turning. On the inside of a bowl you point the flute in the direction of the cut. Stay in the middle third of your gouge's cutting edge. This tilt will yield a 45-degree sheering cut. The approach works well while following the bevel of a bowl gouge. It also works with a scraper to produce a sheer-scraping cut.

Another force at work in a catch is the force of the cut down on the tool rest. The edge of a 12-inch bowl rotating at 1,000 rpm is traveling 52 feet per second, or 36 miles per hour. That's a great deal of force on the tool. (This might be a good time to mention sharp tools again. With all the dynamic forces involved the sharper the tool, the easier the tool passes through the wood fibers.) The fourth aid to prevent catches is to make sure the cutting edge of your gouge is directly supported by the tool rest. If your cutting edge gets way out on the wing or corner of the gouge there is no support by the tool rest. In Figure 5 the arrows represent the force of the wood as it spins by the tool. When the end grain of the bowl comes around to grab your

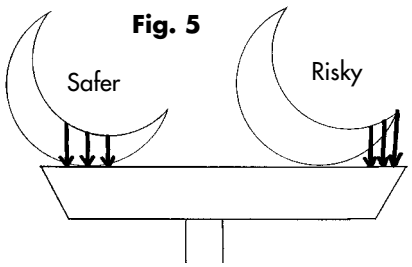


Fig. 5

gouge, the space below the cutting edge could allow the gouge to twist in your hand—the genesis of a catch.

Finally, the fifth aid concerns catches that happen while using scraping tools inside hollow forms. The position of the cutting edge on the radial axis is very important. As Figure 6 indicates, if your cutting edge is slightly above the centerline when you start to get a catch, the force of a catch will pull your tool away from the wood. When your

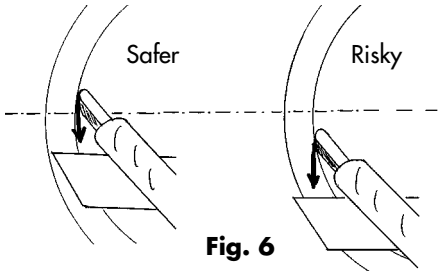


Fig. 6

tool is below center and a catch starts, the cutting force downward on the tool rest will dig the cutting edge deeper into the wood.

Another hazard in deep hollow turning occurs when the cutting edge of your tool is higher than the handle. Handle down is the standard position when using a bowl gouge, but not while cutting across the bottom on the inside of a hollow form. With the cutting edge tipped up into the grain, if a catch starts, the force is directed deeper into the wood. (Ouch!) With the handle up, as in Figure 7, the chatter from grain irregularities that might start a catch will force the tool away from the wood.

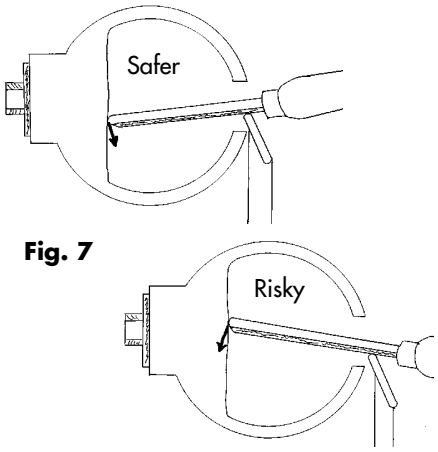


Fig. 7

Another tool positioning aid to prevent catches is to rotate your cutting edge a little counter-clockwise from horizontal. This twisted position will prevent the edge of the tool

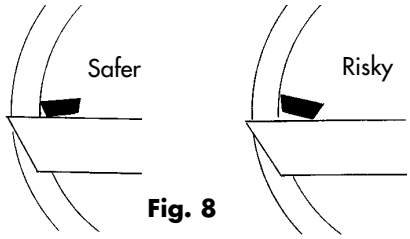


Fig. 8

from digging into the grain and starting a catch. Figure 8 is a view looking down the shaft of the tool into a deep hollow turning.

So now we have five ways to stay away from catches: 1) use sharp tools, 2) ride or follow the bevel, 3) sheer at a 45-degree angle, 4) have tool-rest support, and 5) maintain a safer tool position. It is not always possible or necessary to do all five. Losing the support of the bevel is the problem that causes most catches. If you are in a tight spot and you can't ride the bevel, observing the other four rules will help prevent catches.

Lyle Jamieson, of Traverse City, MI, has been turning since he was sixteen.

AMBROSIA MAPLE

Beetles feast as if on food of the gods

WILLIAM L. STEPHENSON, JR.

AMBROSIA MAPLE IS QUITE FAMILIAR to woodturners, at least in the eastern U.S., even though most would not recognize the name. All too often ambrosia woods are referred to by such aesthetically unpleasing terms as "greased-spot," "steamboat," "worm-spalted," "flagworm," "spot-worm," or "black-hole." These names do not do justice to this often beautiful naturally occurring feature. Add the term "ambrosia" to your wood-identification vocabulary, and see what effect it has on how your work is received.

Striking examples of turned ambrosia maple are featured in prior issues of *American Woodturner*: September 1992, page 35; June 1993, page 49; and September 1993, pages 15 and 18.

In the bowl pictured below, note the dark, rather wide stripes in the endgrain that flow through the side grain. Also note the small pinholes near the center of the color band. These are the markings and contrasting coloration of ambrosia maple. (Ambrosia coloration is different from *spalting.* Spalting occurs in dead wood, appearing as thin, black lines.) The blank for this natural-edge piece was from a large silver maple *(Acer saccharinum)* that grew in an urban environment where trees are continuously exposed to stress and damage.

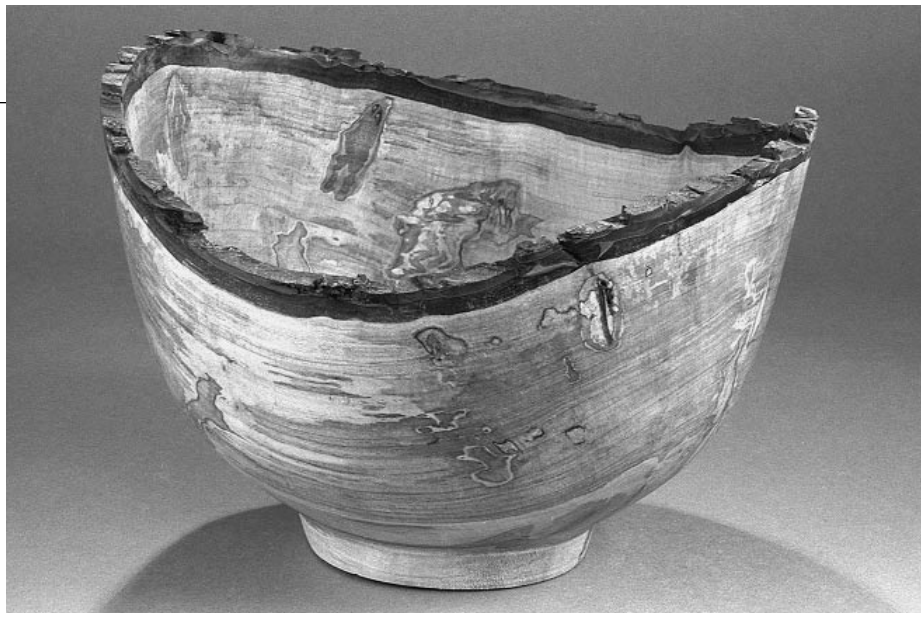
Ambrosia seems to occur most often in soft maples: silver maple, red maple *(Acer rubrum),* and sometimes in American sycamore *(Platanus occidentalis),* a close relative of the maples. Throughout the U.S. other species of ambrosia woods can be found including hickories, ash, magnolia, black cherry, red spruce, pine, and hemlock. In these species the coloration may not be as striking as in the maples.

Ambrosia wood is caused by a series of biological events beginning in living trees. First, the tree is damaged or stressed. Typically the bark is knocked off by a construction or logging encounter. In urban areas the tree can be stressed by root compaction from construction machinery, by lack of water from drought or a change in the natural flow of ground water, or by air pollution from an increase in vehicle traffic. Secondly, the tree is attacked by one of a number of insects that are generally classed as ambrosia beetles, the most common to maples being the Columbian timber beetle *(Corthylus colombianus).* This beetle occurs from Michigan to Massachusetts south to Georgia and Arkansas consistent with the natural range of silver maple, red maple, and sycamore. (The beetle has also been known to attack yellow poplar, boxelder, basswood, beech, elm, yellow birch, and several species of oaks within the natural range.) This ambrosia beetle breeds in living trees, entering the wood through bark crevices or raw wood exposed by mechanical damage, usually on the main trunk.

Ambrosia silver maple bowl, 13" dia., with characteristic staining and pinholes.

The adult beetle bores a hole straight into the sapwood until the tunnel nears the heartwood. These entrance holes are round and clean-cut as shown near the bark line, upper right, in the bowl pictured on the facing page. The diameter of the hole is consistent and depends on the size of the species of beetle, which ranges from $1/32$ to $1/8$ inch. At the juncture of sapwood and heartwood, the female beetle bores short side chambers leading from the main tunnel, as illustrated in the photo at right. She lays an egg near the end of each chamber where the larva lives and develops. The shape and size of the gallery of chambers are characteristic for each species of ambrosia beetle. Note the dark chamber and the lighter area of stain extending above and below the chamber.

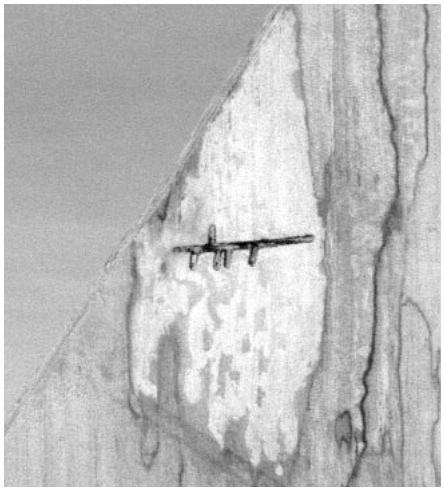
The larvae feed on a yeast of the genus *Pichia,* in the case of the Columbian timber beetle. Other species of ambrosia beetle feed on a



Ambrosia silver maple bowl, 12"dia. Note the entrance hole near the bark line.

fungus or a bacteria. The male ambrosia beetle stores the "seed" for the food of the larvae and inoculates the brood chambers. The food organisms are botanically classified as *stain-causing organisms.* These organisms feed off of the sugar in the sap of the tree, producing a stain that varies in color from dark gray to blue, or from reddish brown to yellow, or from a deep red to a light pink. Other colors seemingly depend upon the species of stain-causing organism and the host tree species. Stained wood is not weakened, but some evidence indicates that it will deteriorate faster than unstained wood.

The stains in the wood lend the characteristics desirable in turned objects. The stained area will extend up to six inches beyond the beetle chamber of origin. The stained area below the chamber is usually twice as long as that above the chamber. The stains are usually tapered to a smaller width moving away from the chamber giving the area a shape somewhat similar to a flattened cigar. My "Red Maple Vessel" (pictured in *AW,* September 1993, page 15) illustrates a single beetle hole and the associated staining.



The brood chamber of the ambrosia beetle shows as dark horizontal and vertical lines in an area of light stain. (The thin, black, wiggly line on the right is not ambrosia, but spalting.)

Since the tree is usually attacked around the entire diameter, the more dramatic effects in turning are often achieved when the wood is turned endgrain. John Jordan's "Textured Jar," (pictured in *AW,* September 1992, page 35) illustrates a fine example. With good design and execution, the stains can give the effect of having splashed out of the top opening and run down the sides of the vessel.

Quite frequently a tree that has been attacked by ambrosia beetles will recover from the stress that accompanied the attack, especially when the stress was drought related. The entrance holes of the adult beetles quickly heal over, the progeny having long since escaped. As the bark grows, there are no outward indications of the prize materials on the inside of the tree.

The best way to find ambrosia maple, or other ambrosia woods, is to carefully look at the end grain while harvesting the tree. If there are cigar-shaped discolorations circling the center of the tree, you have a prize specimen. Fortunately for woodturners, ambrosia woods are considered undesirable and even worthless in the commercial trade. Keep this in mind, should you find yourself negotiating for an ambrosia log discovered at your local wood yard. Usually ambrosia logs never make it to the wood yard and are simply left in the woods to rot. Perhaps you should contact a local logger who is willing to alert you to a find that was left in the woods.

Do not try to store ambrosia woods for extended periods. It is best to get the wood drying as quickly as possible. Once the wood is dry, the more damaging decay organisms (those that attack the wood immediately following harvest) become inactive.

Since the desirable coloration in the wood does not affect the structure, ambrosia woods turn as well as the same species without the coloration. Clear finishes will enhance the coloration as well as add depth to the surface. As with many wood colors, ultraviolet light accelerates the fading if the stain is prone to becoming lighter with age. Darker colors tend to remain more colorfast than lighter hues.

Now that you know how beetles and their food cause such attractive features to turning wood, be on the lookout for ambrosia wood. And use the term—as beautiful as the effect.

Bill Stephenson is a professional forester and woodturner who turns, teaches, and writes from his studio in Loveland, OH.

HEALTHY CHOICE

Help your lungs do what they do best

NOBLE WAIDELICH, R.R.T., R.C.P.

THE MORE I TALK TO MY FELLOW woodturners about dust, the more I realize their reactions fall into one of two categories. They are either preoccupied thinking about and doing everything they can to eliminate their exposure to dust, or they are doing little or nothing about it. I suggest that both groups would benefit from a better understanding of how their lungs work and the danger that wood dust presents.

We all have the ability to make a healthy choice. Like all other forms of risk in this world, the amount of risk is directly proportional to the level of exposure. The key is to understand how the lungs do what they do. For the most part, they do an absolutely remarkable job at handling the assaults we as woodturners subject them to.

I'm in a good position to make some observations about wood dust and the lungs because I've been a respiratory therapist for twenty-five years. I live and work on the northern California coast, where the air off the Pacific Ocean is probably as clean as it is anywhere on earth. Virtually all of my clients suffer from respiratory problems associated with smoking and/or occupational-related risks—in our region, from the lumber and woodworking industries. When smoking and woodworking are combined, the problems are increased significantly.

It is impossible to approach the topic of dust exposure without mentioning smoking. I can't cover the issue here, but it must be stated that smoking definitely impairs our lungs' defense mechanisms and thus increases the magnitude of additional insults. Wood dust, smoke, or any other form of chronic irritation, produces some anatomical changes in the lungs. One is an increase in the number of mucous glands and goblet cells, which increases the normal amount of mucous produced. It also decreases the number of cilia and the length of the remaining cilia, thereby rendering them less effective. Throughout my career, physiologists have agreed on the danger of smoking: one inhalation of a cigarette will paralyze the cilia for one hour. Most people I know that smoke, smoke more than one cigarette per hour. In doing so they have turned off the most important and effective lung defense mechanism.

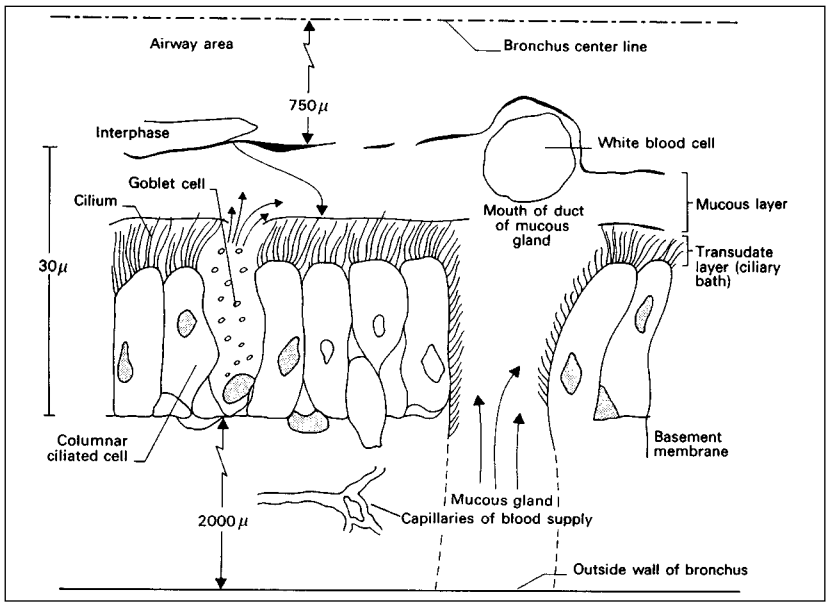
But before air gets that far, our nose plays a major role in the defense of our lungs. Dust particles enter the airway through the nostrils. Hair inside the nose, turbinates (structures that create little eddies of air), and a moist environment all tend to cause the larger particles to rain out in the upper airway. A good percentage of small particles also are trapped here in the nose. Nevertheless, dust particles do get by. Once past the nose these particles are headed for the lung. How far they get depends on several factors.

The average inspiratory flow rate for males is about 180 liters of air per minute (LPM), and for females 160 LPM. In air streams this fast, dust particles are really clipping along, slamming into the airway walls whenever the direction of air flow changes. And airflow changes direction many times before reaching the terminal airways. In fact, depending on which authority you site, there are about twenty-three bifurcations to the lung. In the last couple of bifurcations (referred to as the *respiratory zone*) airflow has slowed to a stop, and gas exchange is accomplished by diffusion alone.

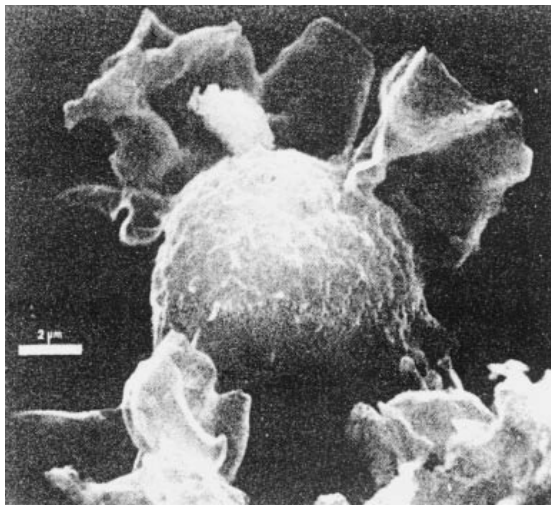
Most dust never reaches the respiratory zone of the lungs. Ambient dust, as it enters the upper airway, is typically dry. Since the airway has a relative humidity of 100 percent (that is, at body temperature, pressure-saturated), the dust absorbs moisture. As the dust particles absorb moisture, they increase in mass, which helps to cause them to rain out relatively early in the airway.

Particles deposited in the lung are cleared by two mechanisms: The first is the *mucociliary system* (drawing, facing page). Most of the airway is covered with a mucous film, normally about 5 microns thick and consisting of two layers. The top layer is much more thick and tenacious than the bottom, which makes it efficient in trapping deposited particles. The thinner bottom layer allows the cilia to beat back and forth through it, waving the mucous blanket towards the cough center so it can be expectorated. The cilia are 5 to 7 microns in length and beat in synchronized waves at between 1000 and 1500 times per minute. The mucous blanket moves up in a small, peripheral airway at about 1 millimeter per minute and in the trachea as fast as 2 centimeters per minute. When the particles reach the pharynx, they can be swallowed. A healthy bronchial mucous is essentially cleared of new particles within 24 hours. In very dusty environments mucous secretion may increase so much that cough and expectoration are required to assist in the clearance.

The mucociliary system does not extend down into the alveoli, the little airsacks of our lungs. Particles deposited there are engulfed by the second defense mechanism: the *alveoli macrophages* (photo, facing page). These are amoeboid cells that roam around the surface of the alveoli engulfing foreign particles. Once surrounding a particle, they migrate out



Burton, Gee, and Hodgkin, ed. *Respiratory Care.* Philadelphia: J.B Lippincott, Co., 1977



Comroe. *Physiology of Respiration.* Year Book Medical Publishers, 1965

The two mechanisms for clearing dust from the lungs: the mucociliary system, left, and an alveoli macrophage, above.

of the alveoli and onto the mucociliary escalator, or they leave the lung through either the lymphatic system or the blood. Sometimes when the dust burden is very large or toxic, the macrophages will migrate through the bronchial wall and dump their dust there. This can cause a stiffening of the lung tissue, which affects the lung's performance. These macrophages can also be inhibited by smoking.

Lung tissue damaged by overexposure to dust or smoke does not regenerate after biological peak. The lungs are the last organ in the human body to mature. In females the lungs mature at the age of about 22 to 24, in males at about 26 to 28. At this point we have 300 to 350 million alveoli in our lungs. When these delicate membranes are damaged, they are gone forever. Since our bodies are exercise-limited by our hearts, not our lungs, a portion of lung function can be lost without noticing it. We also have very few pain receptors in our lungs. In a way this is unfortunate because if we knew we were hurting ourselves, most of us would do something about it.

Individuals will vary in the ability of their respiratory system to protect against dust. As well, individuals will vary in the sensitivity they experience to certain kinds of dust, and some dusts are more dangerous than others. Cocobolo, for instance, is toxic in that its dust tends to irritate airways, especially nasal passages; redwood's toxicity is related to its high acidity; and dust from spalted wood can cause fungal infections.

Some reactions to wood dust are allergic reactions, which involve the immune system, a complex topic. Simply put, when a person's immune system is confronted by an antigen, it can either respond to it or ignore it. Like fingerprints, no two immune systems are alike, and therefore no two individuals will react the same way to all the same antigens. One individual may react to one type of wood dust, while another person may not be bothered by it at all. In fact, some people may be bothered by most or all wood dust and others by very few or no species of wood dust. Also—just because one type of wood dust hasn't bothered you in the past it's no guarantee that with repeated exposure it won't bother you in the future. Sensitivity to an antigen can be triggered at any time.

From a health care point of view, *any amount of dust you remove from your shop is a step in the right direction.* The more dust you can keep out of your respiratory system, the better your respiratory system can handle what does enter. A dust-free environment may be ideal, but for some woodturners it is not necessary. Some precautions are more expensive and inconvenient than others. In the June 1994 issue of this journal, John Timby outlines a rigorous approach to dust protection. Timby describes himself as sensitive to wood dust, developing sever skin rashes when exposed to even the smallest quantities of microscopic dust. Those with similar sensitivities should consider Timby's approach. (He's produced two videotapes on the subject, the set available for $60 by writing him at PO Box 1904, Deming, NM 88031.)

Personally, I use an ambient air filter, which can be made from a box, a squirrel-cage fan, and several thicknesses of air-conditioner or furnace filters. I also use (and recommend) a good air helmet. I spend many hours at the lathe, and I place a high value on my life, which makes it easy to justify the measures I take for adequate protection.

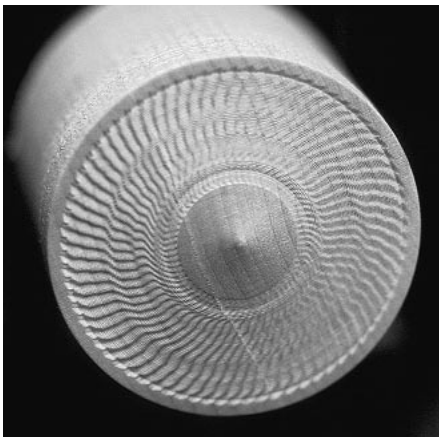
Remember, you need at least a lathe, grinder, band saw, and a couple of good lungs in order to turn wood. It is ironic that as we become better woodturners we produce less dust, decreasing our level of exposure. But the damage may already have been done! My purpose here is to make it easier for you to make a healthy choice. You'll be more relaxed and a better woodturner if you are comfortable with the level of protection you have chosen.

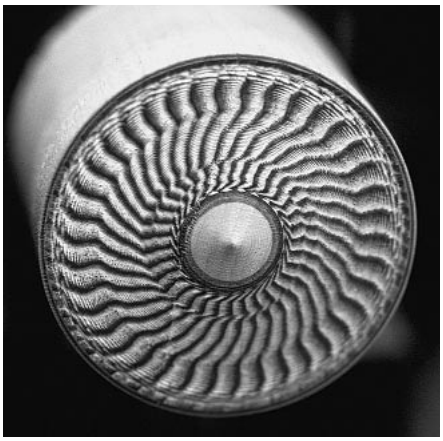
Noble Waidelich is a Registered Respiratory Therapist in Ukiah, CA.

CHATTERWORK

Decorating with a squeal of delight

BONNIE KLEIN



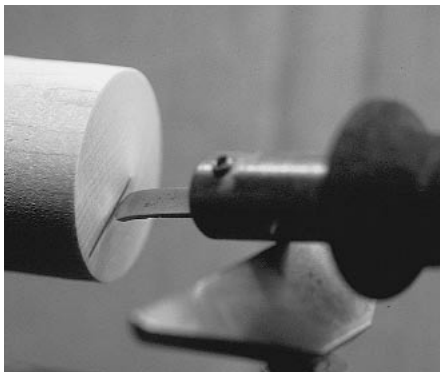


Two examples of the myriad possibilities for chatterwork; the pattern at right is enhanced by coloring with felt-tipped pens.

THERE ARE TWO MAIN REASONS FOR chatter to occur: either the wood or the tool vibrates. The Chatter Tool made by Dennis Stewart Enterprises is designed to let tool vibration create a decorative chatter pattern. It consists of a substantial handle with a spring-steel tip mounted in the end. Pressing the tip against the spinning workpiece causes the tip to bounce along the surface, producing a chatter pattern. The character of the pattern is determined by the surface speed of the material, the pressure of the tool against the workpiece, and also how fast you move the tool across the surface.

This method of chatter works best on the end grain of wood or on materials without grain, such as tagua nuts, bone, antler, many plastics, and soft metals. In any case, the material should be dense, with a fine, even texture; it doesn't have to be hard.

In the tip of the tool shaft is a 2-inch length of spring steel approximately $^1/_{16}$ x $^3/_8$ inch, shaped to a V-point on the end, which is bent slightly downward. After sharpening, which is seldom, I remove the burr from the tip with a couple of strokes across the top with some 220-grit sandpaper. If the tip is too aggressive, it will tend to tear the surface of your workpiece.



The Stewart Chatter Tool in position.

Hold the tool so the tool-rest supports the shaft about 2 inches from the work, allowing the tip to chatter without interference. If the tip is too long or too short, it will not settle easily into a chatter rhythm. I have found that once the tip is adjusted to the proper length (approximately 1 to $1^1/_4$ inches), I don't change it. I prefer to use a combination of speed, pressure, and tool movement to vary the patterns. It is important to listen for the chatter noise, a sort of squeal, before you move the tool or change pressure.

An easy way to describe where and how to hold the tool on the end of your workpiece is to picture this surface as a clock face and to imagine a line from the center to where 7:30 would be. If you move the tool along this line, with the tip parallel to the line (photo left), it keeps the angle between the face of the tool and the work surface less than 80 degrees and offers the best opportunity for chatter to result.

I have found that for a workpiece 2 inches in diameter, a range in lathe speeds from about 1,000 to 3,000 rpm will successfully result in a variety of chatter work. The faster the lathe speed, the farther the surface will travel between bounces of the chatter tool, resulting in a larger pattern. A slower speed will result in a finer, more delicate pattern.

Because the chatter is partially dependent upon the surface speed, it is more difficult to get a chatter pattern near the center of the workpiece. As the diameter increases, more pressure is needed to keep the chatter rhythm and, conversely, less pressure is needed nearer to the center or on smaller diameters. The Chatter Tool may be held briefly in one place or moved across the surface. The pattern may become distorted or eliminated if the tool is held in one place too long or if you apply chatter on top of another pattern.

Once you have become proficient at creating chatterwork, it is fun to play around with finishing possibilities. Experiment with chatter on either sanded or unsanded surfaces, then sanding or burnishing the patterns. Color with paints, stains, or colored pens under the chatter and/or on top of the patterns. The possibilities are endless!

Bonnie Klein, of Renton, WA, specializes in small-scale turnings and in demonstrating the techniques for making them.

A Mashrabeya Vessel

Incorporating traditional Egyptian turning

S. GARY ROBERTS

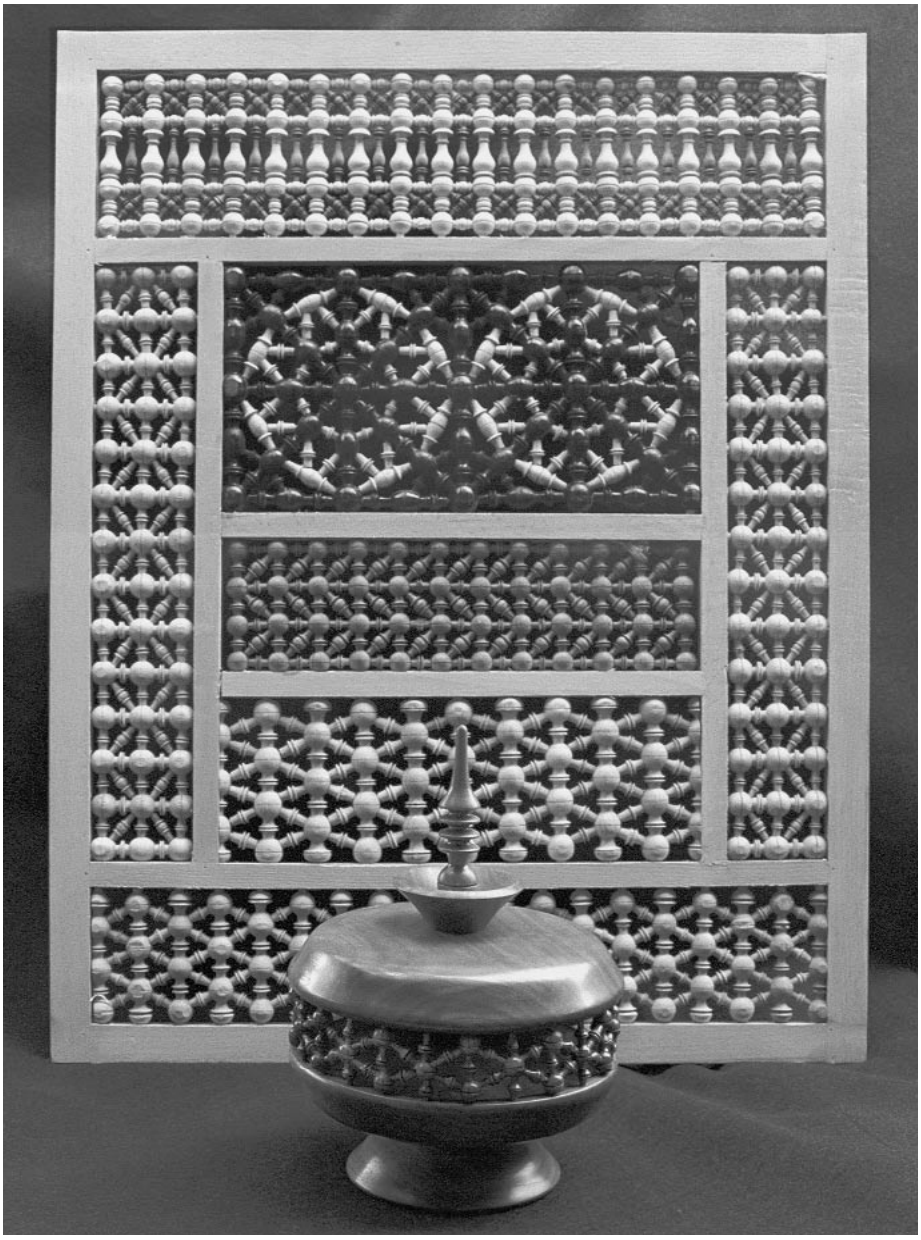
The traditional Egyptian wood-turned panels, called *mashrabeya,* caught my eye when we recently visited the Middle East. I had agreed with the International Executive Service Corps to do my fifth project overseas in Cairo, Egypt. The other projects had been to warm climates during our winter months. That worked out great! I've enjoyed the travel as well as teaching other woodworkers in developing countries some of our techniques. This time it was the Egyptian desert in July and August.

Since Cairo is also 31 degrees north latitude, I assumed that their climate would be similar to our Texas summer. It was that and then some. Daily temperatures were above 105 degrees, and on one occasion during a summer sand storm it passed 125 degrees. No rain fell during the eight weeks we were there—none. Average rainfall in that area is less than 1 inch annually.

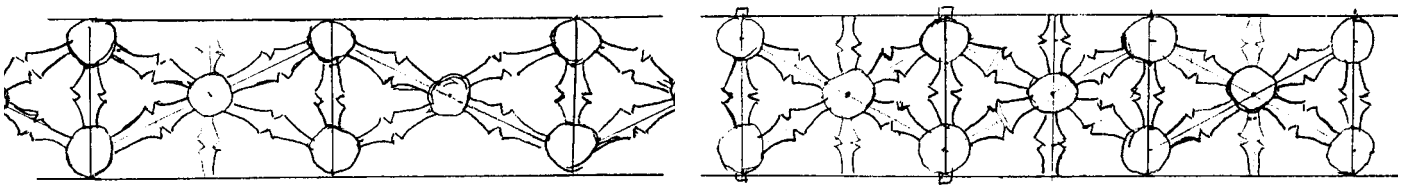
In this climate, mashrabeya fits right in. William Lyster, in his article, "Mashrabeya,"(published in the November, 1988 issue of *Places in Egypt*) notes that the term mashrabeya means, literally, "a drinking thing," referring to the use of mashrabeya to enclose unglazed earthenware water bottles placed in windows to cool the air that ventilates houses.

As Lyster aptly describes it, mashrabeya is "a series of balls connected to each other by cylindrical links, forming a gridlike pattern.… The arrangement of balls and links can become incredibly complex by increasing the number of elements added to the basic grill.…Particularly well made mashrabeya can have as many as 2,000 pieces within a square meter of grill work."

Mashrabeya was initially and primarily used to form window shutters or screens so that medieval ladies of well-to-do houses could view the activity of the street without having to wear veils or reveal themselves, which was forbidden by their Islamic society. As already mentioned, they also provided ventilation and a kind of air conditioning in the dry hot climate. Balconies and doorways as well as windows throughout the older sections of Cairo display this distinctly Egyptian craft. In addition to complex geometric designs, mashrabeya also



An authentic mashrabeya panel forms the backdrop for the author's first vessel incorporating the challenges of small-scale production spindle turning and assembly.



For his first vessel (pictured on page 31), the author found that the spindle layout for ten sections around the circumference, left, looked too spacey. He opted for twelve sections, right.

sometimes form silhouettes of pictures or words.

Besides as architectural elements, these intriguing panels are incorporated into the design of furniture and other objects. Cabinets were, and still are, decorated with hundreds of turnings, as are tables, chairs, and boxes. It seems the more complex the design the greater the pride in display.

It is my observation that in this wood-scarce area of the largest desert in the world the ancient woodworker had only small pieces of wood with which to work. This method could make the best use of these small pieces, creating an interest in and market for their talent, ability, and product. Even today, such improvisation is a common talent, cultivated through necessity, it seems. Could this be a lesson that we are still re-learning today?

When our apprentice system was abandoned early in this century, a silent tragedy began to evolve. The skills of master craftsmen were no longer passed on from generation to generation. Tools were lost, too, because in many cases this master was a father or grandfather who would bequeath his shop with his craft. Most important, the love for and pride in work well done was no longer acquired through practice at the side of one whose life was his craft.

In what are called developing countries the apprenticeship system is still in place and the links of that skill chain have not been broken. Perhaps the success of the AAW can be traced to a desire to acquire and pass along nearly lost ancient skills. I believe we have much to learn from those "underdeveloped" areas we sometimes still regard as primitive.

I asked several master turners if they could incorporate the mashrabeya in a vessel form. With puzzled looks I was told that it would be very complex. It thus became a challenge for me upon returning home. I discovered that they were absolutely right! Complex, but not impossible.

I explored and rejected several different vessel designs finally arriving back where I started with a simple vessel designed in several parts to accommodate flat stock (photo, page 31). I left a bead with sufficient mass on the rim of the opposing top and bottom members to index and drill.

Once I chose the vessel design, work proceeded quickly until indexing, when I had to determine the spindle design. You have to know the shape and size of the mashrabeya spindles before you can index and drill. To do this, I made an exact scale drawing of both the top and front view of the spindle layout.

I tried dividing my $6\frac{1}{2}$-inch diameter vessel into ten and twelve segments. You can see by the drawing above left that dividing the circle into ten segments seemed to stretch the pattern horizontally. I thus selected the pattern of twelve segments (above right). The few moments spent at the drawing table probably saved several hours of turning, a tad of frustration, and more than a smidgen of my already strained religion.

This particular pattern would require a total of twelve segments (30 degrees apiece), each containing six spindles, for a total of seventy-two spindles, not including the five turnings that make up the body of the vessel.

Faced with the duplication of so many spindles, I resorted to using a scratch block with wire nails located at the strategic points to mark the cylinders. I sized the diameter by using a standard $\frac{3}{8}$-inch open-end wrench. This makes a great spanner gauge because it does not flex and even burnishes the wood as you slide along the length of the cylinder.

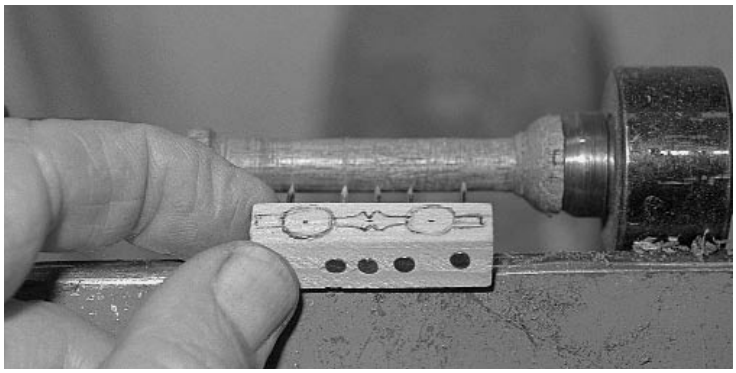
For the tenon on each end of each spindle, I made another spanner gauge by drilling a $\frac{1}{8}$-inch hole in a piece of metal and opening up the end with a file.

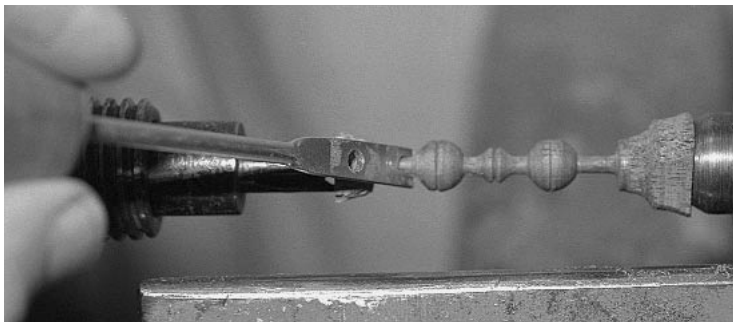
Although the gauges and spanners take time to make, that too is fun and pays great dividends in quality control and ease of duplication.

The traditional panels do not contain glue or nails but are held together by the frame in which the individual elements are placed. In my project, assembly required the frugal use of cyanoacrylate glue. Just imagine what the ancient Egyptians could have made if they had invented Hot Stuff!

Assembly of the spindles into the planned pattern turned out to be a complex problem. Since I was not blessed (or cursed) with seventy-two hands to hold all the pieces in place until each tenon slid into the correct hole, I tried several approaches.

First, building a jig to assist in drilling the holes at the correct angle while allowing for just enough discrepancy to make assembly possible proved to be beyond my tolerance. I remembered watching while one of the Egyptian workers drilled the holes freehand. When I commented on his skill he said "You have to learn to drill by hand—it is the only way." It's true! If the holes are clean and straight, as you would think



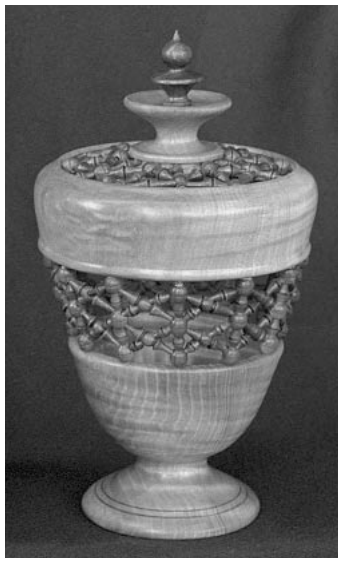


The author used a scratch block, upper left, to mark the spindle features, then a spanner gauge, made by drilling a $1/8$" hole in a piece of metal and opening the end with a file, to size the tenons, left. Drilling the angled holes to interconnect the mashrabeya spindles was best accomplished by hand, above.

best, there is no flex to allow for the assembly process. The holes must be slightly loose at the outer edge.

I found it uncomfortable to run a high-speed drill bit toward a part of my hand. Nevertheless, the Egyptian was correct when he said that this was the way to do it effectively. I drilled the first few with the drawing underneath to line up the proper angle; after that I found it quite easy to maintain the right angle. I drilled only one hole in the tip of my index finger.

For help in assembly, I tried drafting tape, a cardboard cylinder, and even a turned jig of plywood to get the pieces held in place. Again, I reverted to the process used by the experts, who use small pieces of string to hold the sub-assemblies together until they can be joined with those previously assembled. Additional string holds the sub-assemblies to each other until the whole complex has enough integrity to slip into the framing members. I found that dental floss worked best, and the dispenser that it comes in quite convenient.



Author's second mashrabeya vessel during glue-up, left, and finished, right.

Once the pieces are assembled, some quiet time with a small pair of scissors to remove all those little pieces of string only adds to the savor of the creative process.

I applied Deft clear satin finish by hand and buffed with a muslin pad turned at 2,000 rpm to produce a quick and easy finish.

I used a set of Klein Design Henry Taylor miniature chisels available from Craft Supplies (800/551-8876). The $1/16$-inch parting tool and the $3/16$-inch spindle gouge worked best for beads, and the grooves yielded to a shop-made tool made from a concrete nail. I sharpened the tip like that of an awl and flattened the top with a file. It worked nicely and did not try to run off the mark.

As I was showing off and photographing the finished product, I felt my anxieties yielding to a sense of confidence. You know, those seventy-seven pieces were not so difficult, and it looked right nice. That's why I did another (pictured at left)—this time larger (about 14 inches high) and out of mesquite.

S. Gary Roberts of Austin, TX, will bring his mashrabeya vessels to the Instant Gallery at this June's AAW symposium in Greensboro, NC.

DESIGN CLASS AT ARROWMONT

Returning to the damp sponge stage

RODGER JACOBS

IN 1992 JOHN JORDAN AND STEVE Loar co-taught a workshop that was a first at Arrowmont. The class combined hands-on woodturning and classroom design. I had heard that everyone had a momentous, creative experience and when I learned early last year that Arrowmont was going to offer the class again as a two-week course, I jumped on it.

I've learned woodturning pretty much on my own, so I've never been a formal student. My first educational experience at Arrowmont was as a studio assistant. I have since worked my way up to teaching workshops in several places. I was a bit put off by the prospect of reverting to a lowly student until I determined that my head was getting entirely too fat. I realized that if I really wanted to be able to shift from artisan to artist I would have to expand my understanding of design. I knew when an object pleased me; I just did not understand *why* it was pleasing. It was time I got some formal education in design.

I arrived on a Sunday late last June and, after unloading all my stuff, I headed for a Mexican restaurant in town that serves as Arrowmont's primary watering hole. I found that I already knew several there in the class—some were longtime friends, and some I'd heard of. All were familiar with the lathe. We ate good food, drank dark beer, and talked woodturning comfortably into the night. Little did we know that we were on the verge of an experience that would draw us together, then push us apart and start to change the way we saw what we all loved.

Monday morning, our eyes round and our tools and pencils sharp, we were as receptive a bunch of woodturners as you would ever want to see. John and Steve started by asking us for topics of interest. Our list included hollow forms, design/language, inspiration, special tool techniques, meeting new friends, alternative materials, making your own work, color, texture, and working with what you have. After a demo on basic gouge technique from John, we received our first assignment, due noon the next day. We were to create four small similar bowls. When Steve said the word "due," I looked around the class and could feel the excitement and intimidation. It turned out that the format of the class, so different from the undisciplined woodturning education I'd been used to, would be just as important as the information provided. Sometimes people need to be made uncomfortable to grow.

After the first of many late nights and early mornings in the studio, we proudly set out our four bowls and walked down to the main building, notebooks in hand, for our first classroom lecture—on form and the processes to achieve it. We discussed some of the myths and half-truths of design, such as "you can learn good design by looking at it," "design takes a lot of time," "there are ratios for the best forms," "thoughts don't count unless they are executed," "good silhouette equals good form," and "technical skill allows you to make anything you want."

After lunch and a scraping and texturing demo by John, we received the first of many handouts, reprints of articles and lecture outlines. A lively exchange ensued on organic and inorganic forms and how they relate to each other and to ourselves. This thought became a motto: "Children are most creative; they'll try anything and soak up new experiences like a sponge. Adults are enculturated to be socially acceptable. To be creative, we must return to the damp sponge stage."

By the end of the day a lot of preconceived notions about design were gone, our minds were more open, and most of us were well on our way back to the damp sponge stage.

After breakfast on Tuesday, we returned to the classroom for a discussion on ways to think about design and solve problems. *Divergent thinking,* or moving outward in different directions from a common point to explore ideas, and *convergent thinking,* or moving steadily inward toward a common point from several different directions, were both offered and explored. Suggestions like keeping a loose-leaf sketch/idea book handy in order to combine and recombine partial ideas by moving the pages came out of this discussion. In short, we began to take hold of the tools of design and to speak and think its language.

Our next assignment came on the heels of handouts on the principles and elements of design and on color vocabulary. We were to create some examples of texture, three subtractive and three additive, each with a formal and an informal area. I knew something else was up when I saw all the neat acrylics and brushes laid out. Remember the four bowls? We were to color three of them according to various parameters and remove a portion of the fourth. I heard someone say, "if soup runs out, it's art." All this was due the next morning.

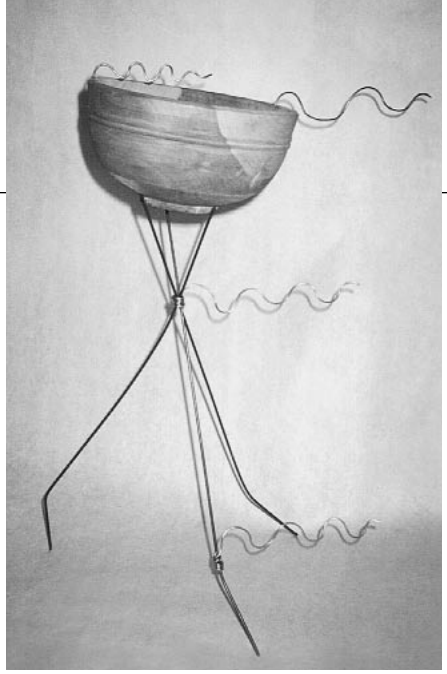
After a feverish Tuesday night in the studio culminating in our nightly pilgrimage to a frozen yogurt stand, we converged in the classroom for the first of many critiques. The previous night's work had been executed using only our intuition and the handouts; now we had to debate our pieces using the language of design. I

believe these interactive sessions helped us learn more easily, as they engaged us both mentally and physically, priming us for the lecture. A talk on color followed, with explanations of color symbolism and direct and indirect effects, and a discourse on the elements of design, like gravity and gesture.

The afternoon session began with John demonstrating his technique for turning an end-grain bowl, applying texture, and trouble-shooting stuff like staining and fuzzy wood. We then viewed a gallery video and discussed some of the pieces shown. Again we talked the language of design, and I could tell from the interaction that we were all becoming more comfortable with its use.

In the afternoon we were introduced to sketching and received our next assignment: to create a rough model, taking one of the four bowls we already had done and incorporating lift and texture or applied color. It was due Thursday morning. Most of us had never made a model from sketches, much less with cardboard, paper, and hot-melt glue. In the studio that evening everyone was totally immersed. Some were working by themselves, some were helping others, and some were off scrounging materials from other studios. All of us were passionate in our creativity. I believe that the experience of making art is just as much an expression of one's creative spirit as the finished art that results. When people make art, they put their energy into the work. When the work is finished, it puts its energy into others. Getting there is half the fun.

Our critique on Thursday morning was a wonderful example of how individual we all are, even when we are focused on a common goal. There were bowls on stilts that were four feet tall and bowls that spiraled up and away and bowls that sank into the depths. There were informal, natural-element compositions and formal, man-made ones; bowls that laughed and bowls that radiated heat. After a rousing discussion we looked over what we had learned so far and came up with some facts:



Author's "100 MPH bowl," incorporating lift and gesture and metal.

- We are all creative;
- We all restrain ourselves;
- We all can use clarification;
- We should look for solutions that are ours;
- We must give ourselves permission to look, test, fail, reorganize, and start again;
- Creativity and design are mental skills;
- In moving from rough sketches and models we tend to formalize or sterilize the individuality of a concept; and most important,
- We must want to make something.

By this time the class had started to evolve into small groups of like-minded individuals, as any group of people will do under stress. Some, including yours truly, were in the damp-sponge stage; others were becoming uncomfortable with all this art stuff and wanted to spend more time making shavings. They wanted to go back to where it was safe.

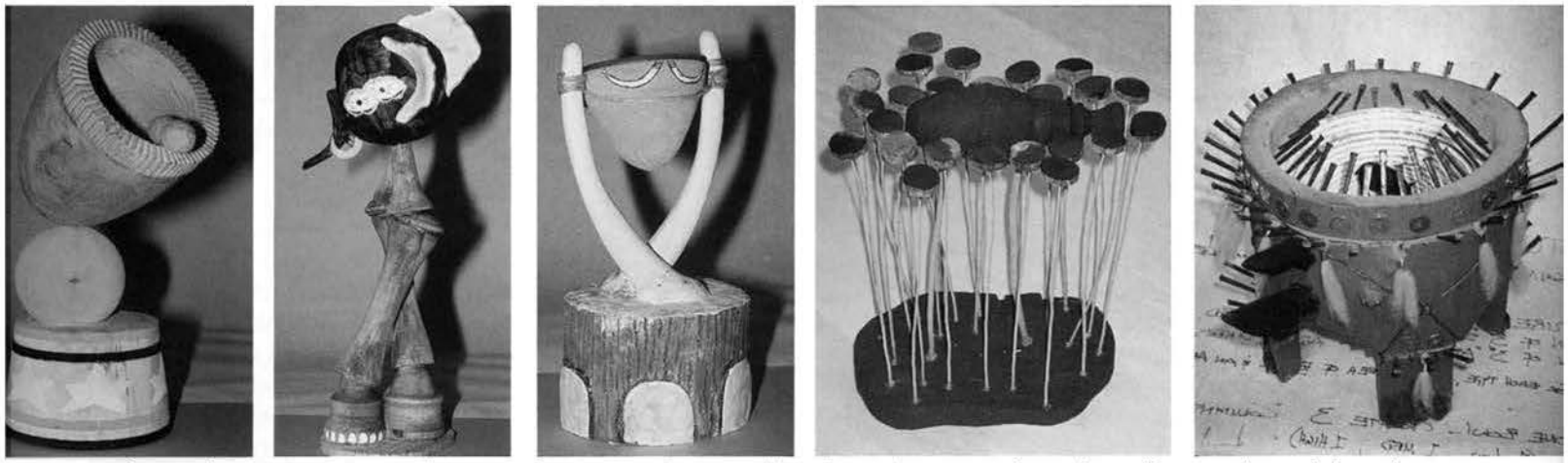
The sponges among us found that the key to going forward in this class was letting go of the stuff that we have been trained to think makes us comfortable. Steve turned a comment he overheard into a sign: "Whatever happened to this class? They used to make such pretty bowls!" The folks who had the greatest problem were looking for some sort of direct practical application to make their work sell better. It doesn't work that way. We were being shown physical and mental design tools; all the rest has to come from within. On the level that we were learning, turning skills were important, but they were means to an end, not an end in itself.

I have found over the years that the reasons for making are just as important as the making. You can go only so far if you make for others. If you make for yourself, to satisfy your creative spirit, there is no limit.

Thursday afternoon John did a hollow-vessel demonstration showing how to center the pith and how to subtly balance the growth rings. We also talked about hollowing tools and decided to get a class project going to make some for each student. Thursday night we got to play in the studio on our own projects. I turned a wild cherry vessel (one of my "ambush" series) for Arrowmont's upcoming scholarship fund auction.

Friday morning Steve led a general discussion in the language of design—what art does—and we reviewed the objects made during the week. Next we talked about displaying work. John presented a lecture on green wood shrinkage, a texturing demo including burning, and a comprehensive discussion on power carving tools that I found rewarding. In the afternoon we wound down, each finding his or her own way of relaxing, which meant that every lathe in the wood studio was in use. We were united in one thing: we all found supreme pleasure in making shavings.

During the weekend we were left pretty much to our own devices: to turn, play, and review the first week



Left to right: Elephant themes by Tim Sabo, Joe Mahone, and Paula Nicks; Hippo theme by Rollin Patrick; and rhino theme by Rodger Jacobs.

of our workshop. In a group discussion on Saturday night at the yogurt stand the benefits of a two-week class really hit home. We determined that a one-week workshop of this sort was just enough to get our minds fully engaged, but the additional week would allow us some real personal growth.

Monday we were back in the classroom for a critique on the objects turned during the weekend and to do some intensive sketching. We talked about the need to keep a sketch/idea book on hand (Steve keeps one attached to his steering wheel) to write in narrative concepts along with the sketches. We agreed on the benefits of sketching fast, speaking to yourself, getting your ideas out where you can work on them, and not erasing. You can refine later with drawings and models.

Brainstorming was next, first understanding it, then doing it. Brainstorming involves getting two or more people to explore ideas about a subject. It is a session where people exchange a number of ideas which in turn stimulate them to think of more ideas. Each idea builds on the idea that preceded it. Synonyms and variations are common. The keys are to let your mind run (divergent thinking) and not take the time to judge what you think. You want more quantity of ideas at this point, not quality. The wilder the better. Impractical ideas often trigger others which can be very useful. Combine, improve, and expand your ideas. Take short breaks, treating these sessions like wind sprints. Evaluate after a long list is obtained, then judge the quality. Lastly, put the ideas to work (convergent thinking). Brainstorming is only the beginning. This was all explained in the context of finding creative solutions to problems of design. We split into groups of four students each, picked one to be the scribe, chose a topic, and let her rip. In three minutes our group had a list of over forty ideas, wow!

Our groups were then presented with a design problem to solve. We were to make an advanced model through a process called *forced association*. Simply put, it means to make an object or solve a problem using a set of defined parameters. Our instructors gave us a list of parameter choices. We were to chose by voting as groups and then separate and work independently to make our own advanced model. The parameters were of four sorts: a type of vessel form, a height, a theme, and a personal element. Our group chose a deep bowl for form, a height of between 12 to 18 inches, and the rhinoceros for a theme. The personal element was a matter of individual choice. Mine was metal. We were expected to use sketching, brainstorming, and rough model-making before completing our advanced model. We had till Wednesday morning.

That evening was memorable. Most of us were completely obsessed with our pieces. There was so much creative energy being released in the wood studio that the building seemed to glow. I could feel an elevation in my consciousness just walking through the space. At midnight the whole school went down to watch the rain turn Galtinburg's famous 12:01 a.m. Fourth of July parade, it's classic convertibles filled with beauty queens, into chaos. What a hoot!

Tuesday morning we went on a field trip to see Clay Compton, an old time production woodturner. By afternoon we were back in the studio working on our advanced models.

I determined that I needed a handful of pennies and a small statue of a baby rhino to help convey the message of my piece. Another student needed a rhino part so we went off to town. Gatlinburg is a strange mix, but if you look hard you can usually find anything you want. We gathered our booty, and back at the studio I realized I needed more. I went to the fiber studio to beg some red felt and found some neat, sticky-backed copper foil in Arrowmont's bookstore. It seemed that searching for the materials was just as much a part of the problem-solving as the design. Just as much fun, too.

Wednesday we started with a critique of our advanced models. It was wonderful to see and compare all the different ideas and solutions to design that came from this experiment. There was a visceral element to the work and the personal elements

Forced Association Design Challenge '96

One of the problems with creativity is choosing from all the things in the whole world that one could be influenced by, and not reacting to the onslaught by simply making the ordinary. How does one focus on a set of parameters that will actually facilitate the creative process? **Forced Association** is one answer—its beauty is that it is essentially fail-safe, and it ensures uniqueness. It is a straight-forward mechanical process. If you buy into it and work within the parameters that you are "dealt," then you are assured of operating in new terrain.

Forced Association breaks up the basic qualities of a form into separate parts; each one of these parts is then given a range of possibilities, and you then choose one from each group, thereby forcing an association that you normally would not make. Ideally, you will put the descriptors of each group in a hat or bag and literally choose blind. Let fate decide which combination of parameters that you will work within! This method provides for a range of choices (different each time), and it nicely sidesteps the calculating side of each of us, which uses our stereotyped assumptions to pick what we estimate to be the "best" combination. The groups below provide ranges of possibilities that will challenge both technique and concept, I've thrown in a personal element, so that you can bring even more of your uniqueness to the project. Remember: for best results, choose blind, then accept the parameters, and bring all of your ingenuity to the design, sketching, and model making stages within those "requirements":

•**Form**	•**Height**
plate or platter	0 to 12"
shallow bowl	12" to 18"
deep bowl	18" to 24"
hollow vessel	24" to unlimited

•**Theme**—African animals: leopard, elephant, rhinoceros, gorilla, crocodile.

•**Personal elements**—anything you care to inject: a meaning, like ecology, ceremony, hunting; or embellishments, like beads, metal, glass, fiber; or surface treatments, like carving, paint, burning, dye, gold leaf, etc. Any personal element is acceptable, as long as the three forced association parameters are recognizable.

If you are interested in taking up the **Forced Association Design Challenge '96,** we will have space set aside at the AAW symposium in Greensboro to view, discuss, and enjoy the results. Please drop a card to Rodger, so that he can arrange for adequate space, and then you must arrange for your piece to be hand-carried to and from the conference (there will be NO arrangements for shipped work). Contact Rodger Jacobs, 154 Stover Ridge Rd., Newland, NC 28657. —*Steve Loar*

ranged from sacrifice and ceremony to humor and ecology. The work was an extension of individual personalities. This was the high point of the workshop, seeing how all we were taught culminated in our objects.

John shared the mysteries of a graphite finish in the afternoon and Betty Scarpino, our class assistant, did a demo on bleaching. After supper the school converged on the library for an auction of donated work to benefit Arrowmont's scholarship fund. I had a piece in the auction that brought a reasonable amount, and I got to add a wonderful stoneware bowl to my and Lucy's collection.

After dark our class performed a ritual called the Dog Burn. We met at the barbecue pit and each of us burned some of the work we had created over the last two weeks. As I committed my objects to the flames I felt as if I was releasing their energy. Now I'll be able to use that energy again. I wish I could have helped make everyone's experience as rewarding as mine. A few burned all their objects to divorce themselves from the workshop. All I can say is that if the reason you make is to satisfy your creative spirit you will develop an emotional relationship with your work that will sustain you. It may not make you comfortable or happy, but it will sustain you. After much reflection, letting the flames die slowly, we presented some t-shirts that the class created and went to the yogurt stand for double scoops.

Thursday we made tools and worked on technique. Everyone in the class ended up with a straight and a bent tool rigged with $^3/_{16}$-inch HSS cutters. We spent most of the day turning, and John went into sharpening in depth. We wound down working on projects of our own interest. Most of the class played a strange game of golf inside a house that night; only in Gatlinburg!

Friday morning John had to leave for the AAW California symposium. We thanked him for his tolerance and energy, hugged his neck, and sent him on his way. The class met for a brainstorming discussion on shows and displays. We covered everything from light bars to floor covers and included show clothes, booth placement, wholesale, and retail. I've been doing shows for over ten years and I learned a bunch of stuff. Brainstorming works.

I said my good-byes and thank-yous, packed up all my tools, and hit the road in the late afternoon. Driving home, I thought about the two weeks. I couldn't have learned what I did by standing at the lathe; I had to come into a classroom, sit down, and listen and interact with others. I thought about woodturning and the evolution that I have seen in my twelve years as a full-time turner. I thought about the search for self expression and how difficult it is to leave behind objects that are pretty and familiar. I thought of the vital need to move that search into the unknown in the pursuit of something personal. And I thought of how wonderful and important it is to have people like Steve and John willing to show us the tools for that search.

Rodger Jacobs turns in Newland, NC.

ASSUMPTIONS AND CONSTRAINTS

One artist's response

RICHARD HOOPER

I WOULD LIKE TO SHARE SOME thoughts about design with references to my own work. I was inspired to write this article by a remark made at the AllTURNatives conference at Ursinas College last August when David Ellsworth honestly recounted a conversation with someone who asked him why he had hollowed out one (or all?) of his pieces. This, David relates, left him metaphorically scratching his head while he reflected on his response.

The point he was making of course has to do with the assumptions we as turners bring to the design of an object and the extent that we have considered the implications of those assumptions. Should we not, David's point implied, have a rather more considered aesthetic response readily available than just, "well I always take the middle out because that's what woodturners do…and besides, I've just bought a long deep hollowing hook tool!" That's not to say everyone making vessels, bowls or platters need immediately have a mid-life aesthetic crisis, but just that "Why do you hollow it out?" is surely a valid question. We even make assumptions about the way our work will be viewed.

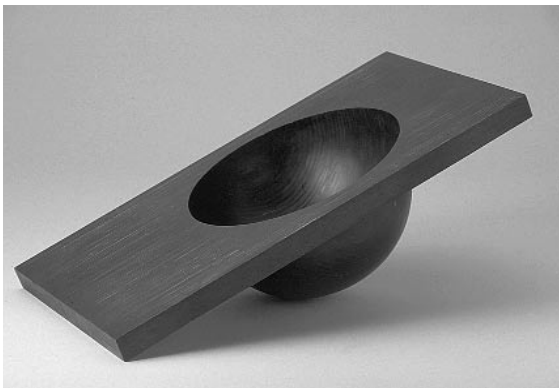
Although of course we like to imagine we are free agents in the creative process, isn't it true that as well as the limitations that our own assumptions give rise to, we also have many external "constraints?" Firstly we have the constraints of physics, beginning with time and place. Materials too have their limitations, as do our tools. Gravity furthermore exerts a downward force on our work, requiring some relationship of object to surface. Gravity also gives us a sense of up and down, of horizon, and thus a perceived "correct" viewing paradigm. The presence, absence, and quality of light affect the conception, execution, and observation of our work. Our work will also change over time due to atmospheric and other conditions.

Secondly, we have personal constraints. Our own physical stature gives us a particular capability and perspective on the world, and our own physical skill has limitations. We have constraints in terms of vision; we can see only one view at a time (cf. the cubists, who sought to give multiple views at a single time). Our eyes have limitations in the way they see, which is often a reason we like to use our hands to "see" objects with and why we need to make allowances for our eyes (cf. the Parthenon's pillars being wider in the middle than the top or bottom to make them appear straight from a distance). Even our own and other's life experiences affect the way we work and our work is viewed. Our work's perceived value will similarly change over time, as differing cultural values exert their effect (we have already seen this in "our time" with work made of exotic woods).

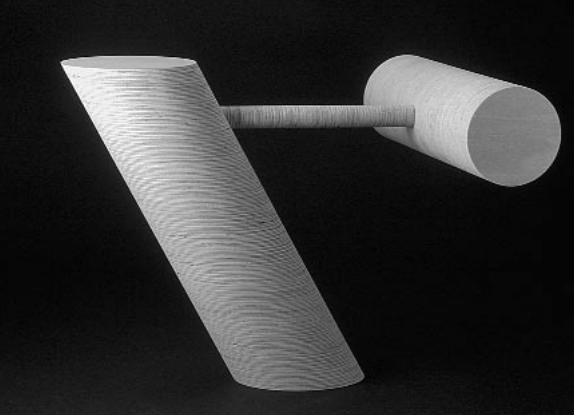
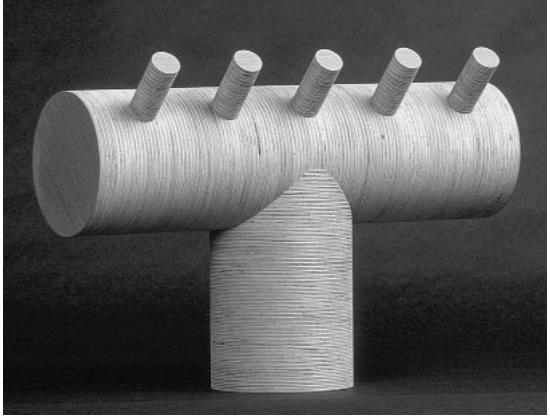
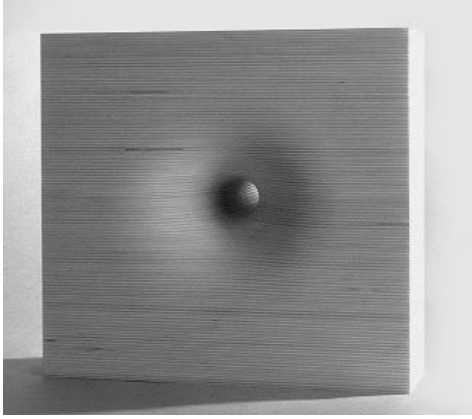
Of course these factors, whilst being constraints up to a point, still allow for infinite creativity and challenge, too. One of my interests is in the relationship of object to surface. Gravity, of course, affects an object such that unless it is suspended somehow or we are in outer space, an object needs to rest on a surface. (Actually, I think outer space would be the best place to view many three-dimensional objects.) We then have the choice as to whether to design our object despite this force (and simply let it lie on the surface on which it comes to rest) or to exploit this force and enable the object to stand in a prescribed fashion. Even then we have a choice as to whether to make it look as if it stands on the surface (fact) or to look as if it extends below it (illusion). The act of standing (as opposed to resting) is then a function of the piece. This clearly has to compete or preferably complement the other function(s) of the piece (assuming it has any).

Traditionally, the two functions of a bowl—containing and standing—have had a blurred visual differenti-

"Outrigger" attempts to separate the functions of a bowl—containing and standing—while exploring simple geometric form.



"Inclined Plane" attempts to separate the functions of a bowl while exploring a counterpoised plane and hemisphere. It rests on a point and a line.

"Equilibrium," left, is a study in vertical and horizontal planes of varying diameter above and below the surface, together with a cantilevered balancing dynamic. "Ariel," center, is a study in vertical and horizontal axes above and below the surface contrasting large and small diameter cylinders. "Vector Warp," right, is an exploration into the visual "warping" effect of curved plywood strata, reflecting the bending properties of light, time, and space.

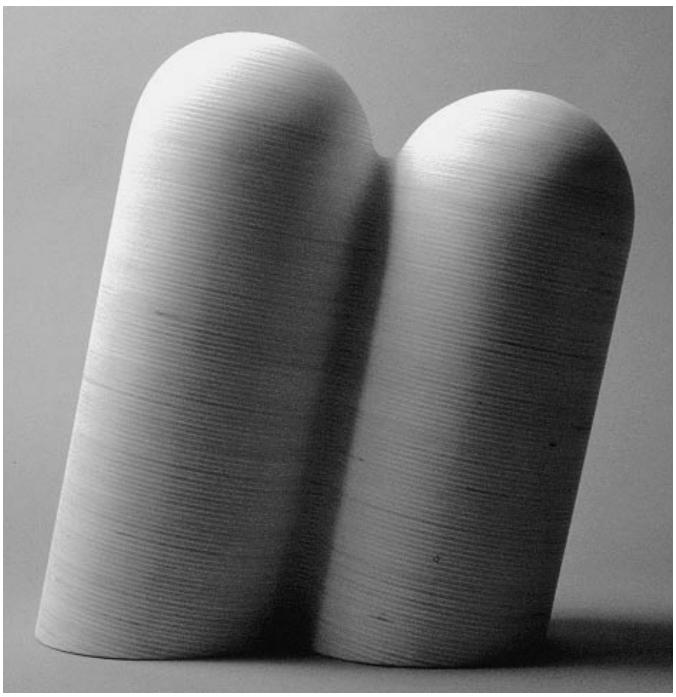
ation. That is, the part that holds the contents is also, on the underside, the means by which the bowl stands. My interest has been in separating these functions in order to allow the use of geometrically purer forms for each (photos facing page). The point, I feel, is this: a bowl needs a "foot" in practical terms only in order to stand upright, motionless, and stable, which is often an inconvenience in visual terms. Of course, a good designer can allow for this "inconvenience" and still come up with a pleasing bowl. Clearly then the design of a bowl has to take into account the visual effect of the surface on which it is to rest, generally a flat plane.

My interest, then, is to explore the relationship not only of bowl to viewer but also of bowl to surface. Most people can spot a "clumpy" bowl or a "squat" bowl, and this is precisely due to the relationship of bowl to surface being inappropriate. Significantly, I have rarely heard a bowl being criticized for being too narrow at the foot (at least not on aesthetic grounds), again because the bowl-to-surface requirement in visual terms does not require a "foot." A perfect bowl form, then, as far as I am concerned, is a hemisphere (*a* perfect form not *the* perfect form). My "mission" has been to produce a hemispherical bowl with remote stability, yet in a visually coherent whole.

I use plywood partly as it is a stable material, though beastly to turn, but mainly for visual reasons. Since it requires laminating up to provide the thickness required, this gives a stratified appearance which provides an orienting effect to the material. This produces a visual dynamic, the effect of which can be controlled by aligning the 'strata' either vertically, horizontally, or at an angle in order to give a direction to the piece or to create tension or stability.

Progressing from the hemispherical forms, I have been exploring the use of cylindrical shapes and their juxtaposition (photos above—left and center) and more solid forms (photos above right and below). This has enabled me to consider a variety of axes and in so doing move away from bowl forms. Here I have been exploring their relationship to the surface on which they stand and even below it. These more open forms allow greater spatial freedom, and they change the viewing context from a paradigm of inside/outside to one of above/below, in front of/behind, here/there, and now/then.

I am reminded of the words of a lecturer in psychology when I was a student who encouraged us to "tease out those assumptions..." I think I am beginning to understand what he meant!



"White Bipod" is an extrapolation of a double hemispherical form into two parallel cylindrical forms. The piece, which attempts to explore biomorphic archetypes in a futuristic idiom, was created by turning two connected spheres, sawing the form in half, and then using a router with a flush trim bit to shape layers of plywood as if extruded from the sawn form.

Rick Hooper is a turner and sculptor in Leicester, England. For more on his work, see "Close Quarter Collaboration" in the December 1995 issue of American Woodturner.

Woodturning Masterclass: Artistry, Style, Inspiration by Tony Boase. *Guild of Master Craftsman Publications, Ltd., 1996; distributed by Sterling (212/532-7160). 144 pp. $17.95.*
This book is full-color, 8 1/2x11-in., highlighting twelve turners from Great Britain. The author, Tony Boase, is a professional photographer and passionate turner. He has combined those skills to offer an insight into the inspiration, turning style, and finished work of turners Anthony Bryant, Paul Clare, Melvyn Firmager, Tobias Kaye, Ray Key, Bert Marsh, Liz and Michael O'Donnell, Mike Scott, Hayley Smith, Jules Tattersall, Don White, and David Woodward.

Woodturning Masterclass speaks as much to the artistry and craftsmanship of photography as it does to the artistry and craftsmanship of turning wood. On page 116 Boase captures the image of Jules Tattersall emptying shavings out of a hollow form as though the reader, too, were standing next to him. I find it fascinating that Boase manages to show people really working, not just posing for pictures.

Each of the many, many color photographs is flawless. It is perhaps ironic, then that my favorite are the black-and-white pictures that accompany each turner's biography page. It is not enough to say that each person looks happy—these twelve photos vibrate with the enthusiasm for our craft that all of us share. Boase's photo of himself on the author's page reads like an exclamation mark—take note of the well-placed camera, which I am sure he does not travel far without.

This book answers pictorially the question of why we turn wood. Put it in a prominent place so that visitors to your home, shop, or studio will pick it up and perhaps begin to understand why we, too, are so full of the thrill of turning wood.

—Betty Scarpino, Indianapolis, IN

Top, Anthony Bryant at work. Above, burr oak multi-axis bowl (8" dia.) by Paul Clare. Photos by Tony Boase.

Woodturning Masterclass: Artistry, Style, Inspiration (see earlier info). **Bert Marsh** by Bert Marsh. *Guild of Master Craftsman Publications, Ltd., 1996; distributed by Sterling (212/532-7160). 160 pp., $24.95.*
I shall review these two books together because they have so much in common. They are around the same size, beautifully produced in full color, from the same English publisher, and paperback.

I believe that hardcover is more appropriate for non-fiction books which buyers will tend to keep for a long time. While I appreciate the need to keep a book's price low in order to increase its sales, there is a darker side. Publishers commonly demand that the author's royalty be less for paperbacks. This unjust practice increases the premium you pay for hardcover books. Were the royalty the same percentage, hardcover books might not seem so expensive by comparison.

Woodturning Masterclass recalls Dale Nish's 1985 *Master Woodturners.* However, it would be more appropriate to swap titles, as Nish details techniques while Boase avoids them. And it is Boase's chosen "reportage approach," a euphemism for glamour without much substance, which leaves me dissatisfied.

Boase tours Britain with his camera, seeking out his twelve subject turners in situ. Twelve pages are allocated to each. The inflexible approach also gives each subject a black-and-white scene-setting photograph, a page of text (mainly biography), six pages of the subject at work, and four pages of gallery.

Boase is both a keen turner and a professional photographer. This promising combination is, alas, not allied with investigative journalism, for Boase's text is limp. He fails to ask the important questions. What were and are his subjects' influences? What views do they have? What don't they like? What challenges have they confronted? What technical, aesthetic, and other contributions have they made? The world of the professional turner is as complex and as beset by undercurrents and confrontation as any other. But by averting his eyes, Boase shortchanges his readers and fails to wring anything new from his subjects.

The subject-at-work shots are predictable. We see them wrestling with chain saws, thrusting with bowl gouges, peering intently. Although Boase conquers the difficulties of lighting in cramped workshops, his shots leave me frustrated. He titillates with a shot of Anthony Bryant's 10-degree sharpening angles, but fails to tell us what Bryant does when he loses bevel support on the insides of bowls; Melvyn Firmager's unique hollowing tools similarly rate a photograph but no demystifying text.

The galleries also leave me dissatisfied. The studio lighting makes some of the pieces seem to float ethereally—it's both weird and distract-

ing. But again it is the text, or rather the lack of it, that frustrates. Boase had the opportunity to relate the work of twelve major British turners to the growth and aesthetic and technical progress of international turning, but he makes little attempt. Therefore, although the works in the galleries are fine, many readers will not know whether they are important milestones or merely competent productions.

Bert Marsh is perhaps a woodturning first. Not only is it a monograph, a species of book largely limited to "fine artists," but its author is the subject. I admire his guts in producing such a trumpet but wish that he had blown all the notes.

The chapters of biography and design/philosophy are pleasingly written, as is that on timber. There are also nineteen pages on technique. The text is sound and clear, but many readers would need explicit explanatory illustrations. In the workshop shots the important area is too often obscured, too dark, or too small. A further difficulty is that Marsh has numbered the photographs but not usually referred to them in the text.

Marsh prefers to turn a bowl's inside inboard—he uses a pedestal lathe so that there is no obstructing bed. The reason is that March uses a hand on the bowl's outside to damp vibration, and being right-handed, prefers to use his left hand. If you do not need to damp, I believe that it is more comfortable to turn bowl insides outboard.

The text chapters are the nest, the two galleries which occupy half the book are the eggs. Small bowls, mainly natural-edged (whatever happened to the word waney?) and boxes, in a rich variety of species. They are enticing and elegant, although some of the bowl footrims lack definition. But is that enough when many turners have been producing similar work? Marsh fails to relate his work or clarify his contribution to the development of turning. He could be a most important figure but fails to make his case. He calls a 1983 natural-edged bowl his signature piece, but his type of rim had been around for at least ten years by then. His bowls of 1981–83, made from gluing together identical segments from several bowls are probably unique, but are perhaps too exacting to attract followers. On the other hand, I would have said that about Giles Gilson's pictorial laminations! Unfortunately the two pieces I most admire represent an early direction from which Marsh soon departed.

Both books should sell well. Their attractiveness will ensure that they leap into the hands of potential buyers. But what you see in the bookstore as you guiltily turn each page is largely what you get when you read them at home. It is admirable that the books seduce because of their design and color photography, but this should have been validated by answering the questions readers should have been expected to ask. This failure will disappoint the more informed readers; it should also disappoint the books' subjects.

—Mike Darlow, Exeter, NSW

PHOTOS FROM THE MAILBAG

"Ring Vase," 9" tall, English walnut/black walnut graft union. —*Abe Harper, Berea, KY*

"Bowl with Intarsia Inserts," $6\frac{3}{4}$" dia, laminated birds-eye maple and walnut, with scroll-sawed inserts.

—*Ralph Easley, Cincinnati, OH*

I didn't think this asymmetric piece of root would amount to anything, but it turned out to be one of my favorite pieces.

—*Chuck Sawyer, Milford, OH*

Tanoak urn, 10" high.

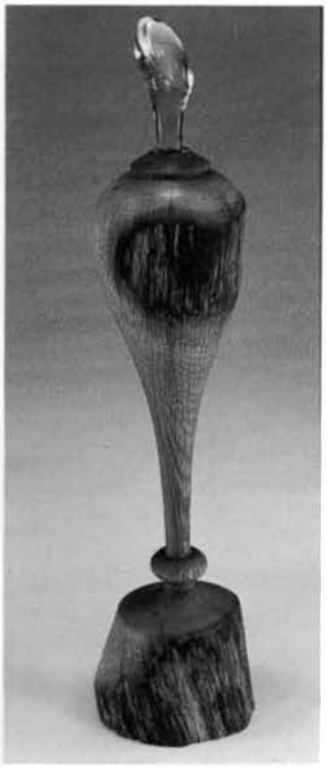
—*Roy Austin, Sea Ranch, CA*

Larry Mart

The body of the plate is mahogany, and the Chinese longevity characters are of padauk with maple for contrast in the smaller, periphery characters (together symbolizing eighty years). The large central character was made using the Shopsmith as a pin router, creating both the groove and the inlay on the same template by varying the size of the pilot and cutter. The small characters were made by stacking thin layers of padauk and maple into flat-bottomed holes drilled with a Forstner bit at a slight angle to correspond to the slant of the rim so that the characters would not be distorted in the finished plate.

—*Andy Chen, College Station, TX*

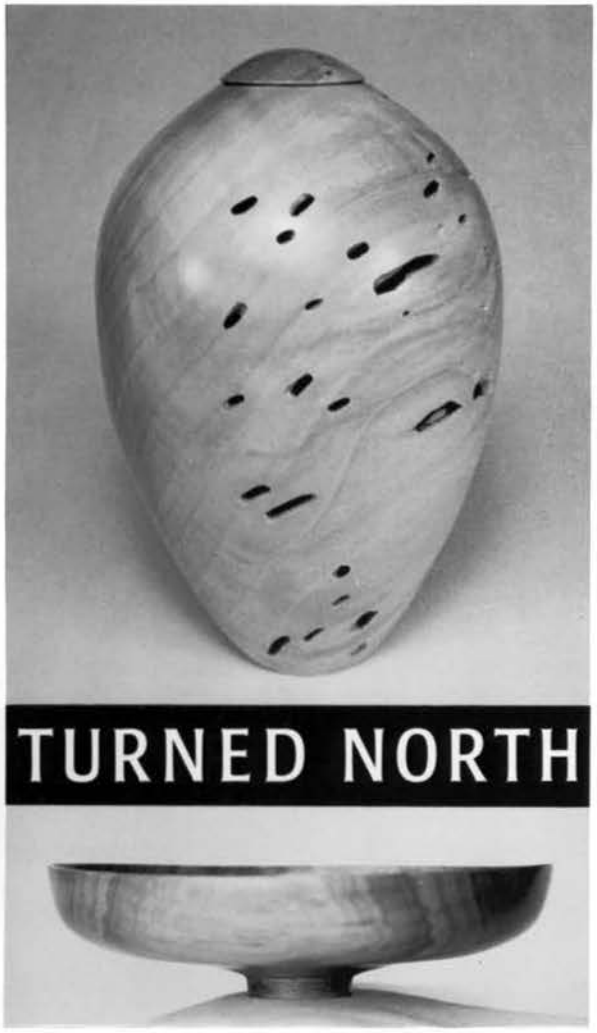
PHOTOS FROM THE MAILBAG



Back in the 1970s I was making those glass perfume bottles that people collected but never used for their intended purpose. These objects mocked function, inspiring me to revisit the idea in a more abstract form. In the "Non-Functional Scent Container," left, I felt it important to show the transformation of the wood (and oak branch) into a container, yet leaving raw references points of the process. The glass stopper adds a significant contrast while creating a link or allusion to the perfume container that inspired it. At right is one of my "Optical Light Containers," of spalted birch. The piece is cut, turned, glued, turned again, and faceted. The outside facets cause windows allowing a view of the inside of the piece. Under the right conditions, the glass stopper functions as an optical fiber, illuminating the interior of the piece. The soft glow filling the container invites a different point of view and raises the questions: Can we contain light? Why would we want to? Where does the glow go when the light is turned off?

—James Tracy, Fridley, MN

John Magnussen, Buffalo, MN, white oak burl, 9" tall.



Mel Turcanik, Kasson, MN, walnut, 9¼" dia.

Jonathan Sybrant, Wayzata, MN, hard maple, 12" tall.

Rus Hurt, Port Wing, WI, spalted maple burl, 6¼" dia.

"From Port Wing to Moose Lake, from Virginia to Grand Marais...Minnesota is home to a virtual bevy of gifted artisans of the woodturning persuasion." So reads the show announcement for "Turned North: Minnesota Woodturners Association" which opened last month and continues through March 31 at the Duluth Art Institute. The photographs here attest to the quality and variety of work chosen by curators Joel Nopola and James Tracy: sixty pieces from twenty members of the AAW chapter, who also presented lathe demonstrations during the opening reception. Already, the show has generated enough public response to secure interest in another show with additional venues two years from now.