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American Woodturner

The Journal of the American Association of Woodturners September 1997 $5.00 Vol. 12, No. 3

SAN ANTONIO SYMPOSIUM

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

FARING WELL

SAN ANTONIO WAS A GREAT SUCCESS. The number of attendees was lower than last year, which was expected, but the overall quality of the show was the best yet. We had something for everyone—every level of experience—even something for spouses of turners. Our attendance was 678 for the conference and 815 for the banquet. The live auction brought $18,975 and the silent auction $2,103, for a combined total of $21,078 for our Educational Opportunity Grant fund. The largest yet. We honored Al Stirt with a lifetime honorary membership award.

Our next symposium will be in Akron, OH, June 12–14, 1998. Again, we will be at a convention center. The rooms can be made large or small depending on the needs. The arrangements are such that trade show noises will not bother rotations. The silent auction area is well lighted and in a beautiful setting. Our 1999 symposium will be in the West, probably the Northwest. The site will be chosen soon and at that time you will be notified. The year 2000 brings us back to the Southeast. In 2001 we go back to the middle of the nation. Strong consideration is being given to the Minneapolis, MN, area.

I want to thank each of you who took the time to fill out the evaluation sheets. Your comments and suggestions have been read and will be appropriately acted on. Your interest and concerns are very important to us. I want to again thank all of the local chapter people for helping with the conference. I called out their names at the opening ceremonies, and these and others appear below. I want to give a special thanks to Blake Hickerson for doing all the signs for the symposium. They were the best directional signs we have ever had. I must again thank Willard Baxter for the outstanding job he did with the live auction.

Following the symposium the Board held its semi-annual meeting. We increased our Educational Opportunity Grants to $20,000 for 1998. Please take advantage of this, using the application at the back of this journal, and be sure to encourage young people to apply. We now have available our first "how-to" videotape: "Introduction to Bowl Turning with Rus Hurt." More tapes of this nature are planned. And as usual, look for tapes of this year's symposium demonstrations and Instant Gallery in December.

By early next year we should have in place a new program to bring together demonstrators and event planners all over the world. For more on the AAW's new Woodturners International Communication Service (WICS), please see page 52.

We have retained Butch and Pat Titus, who coordinated the San Antonio conference, to fulfill the responsibilities of Conference Coordinator. This is going to be a tremendous help to the Board. Our conferences are getting bigger and better, requiring more time to put together. Having Butch and Pat will relieve board members so they can organize and implement some of the futuristic things for the members, such as a traveling woodturning show, board members keeping in closer contact with the chapters by telephone, studying the possibilities of starting a woodturning museum, and more.

As we always do at our mid-year board meeting, we elected officers for the next twelve months. Before the election I announced that I would not be a candidate for re-election as president. I have served one year as vice-president and two years as president. The organization is doing well so I felt it was time to reacquaint myself with my studio. I enjoyed very much serving the membership as president and will continue as a board member to the remainder of my term. The election results are as follows: David Wahl was elected president; Clay Foster was elected vice-president; Phil Pratt was re-elected secretary; and Stephen Garavatti was re-elected treasurer.

—Charles Alvis, Member of the Board

★ THANKS TO THE 1997 SYMPOSIUM VOLUNTEERS ★

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Virgil Barksdale
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Gary Sanders
Nick Silva
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Jean-Marie Smith
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Jim Stuckey
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HILL COUNTRY TURNERS
GULF COAST WOODTURNERS ASSOCIATION
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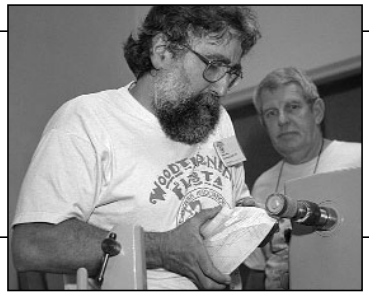
A Note about your Safety
An accident at the lathe can happen with blinding suddenness; respiratory problems can build over years. Take appropriate precautions when you turn. Safety guidelines are published in the AAW Resource Directory. Following them will help ensure that you can continue to enjoy woodturning.



On the cover: *The Instant Gallery of the AAW's 11th Annual Symposium, held last July in San Antonio, Texas, drew crowds and smiles. At left Alan Stirt, one of more than fifty presenters at the symposium, uses a sanding drum to sculpt spiral flutes on a bowl. Stirt, known for his artful bowls, his outstanding demonstrations, and his long support of the AAW, was named an Honorary Lifetime Member at the symposium. Cover photo: Larry Mart; photo left: Rick Mastelli.*

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

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Choose wisely

In woodworking, there is no such thing as a random act of violence. Tools do not go postal and arbitrarily injure someone. Not getting hurt is a choice you make. When you get hurt, it is because you willfully made the wrong choice. There are no accidents, only premeditated carelessness.

If not getting hurt is a conscious decision, then the most essential safety device you can employ is your mind. Turn it on and keep it on while you are working. Guards and shields can't keep you from getting hurt if you choose to do something foolish. As Mark Twain said, "Nothing is absolutely foolproof, because fools are so ingenious." Use your ingenuity to prevent injuries, not cause them.

Any time you hear a little voice inside your head saying, "Are you sure you want to do that?" stop immediately. What you are hearing is your innate sense of self preservation urging you to reconsider your choice. Listening to it may save a digit, a limb, or a life.

When you are trying something for the first time, choose to educate yourself. Read the operator's manual. Read books from the library. Read *American Woodturner.* Ask someone with more experience. One great thing about woodturners is that they are willing and eager to share their knowledge and experience with others. I have known only one woodturner who wasn't, and he was a butthead in all other areas of his life as well. Some injuries are a result of ignorance, so don't operate with an ignorant mind.

If you are trying something so new and novel that there is no information or help available, compare what you are about to do to similar things you have done before. What were the inherent risks and dangers and how did you minimize them? Try to anticipate what could go wrong and what you are going to do if it does. Practice what you will do if something goes wrong. And don't work alone on something you know is risky. It's very upsetting to your family and friends to find you dead in your shop. Some of them would prefer to be there when it happens.

If you have a close call that doesn't result in an injury, choose to quit working for a while. Take a break. You've just demonstrated momentary impaired judgment. Wait until you've regained your senses before resuming the activity you almost killed yourself doing. Take the time to analyze what went wrong and what other choices you can make so it doesn't happen again.

Anytime you hear a little voice inside your head saying, "Are you sure you want to do that?" stop immediately.

The only times I have gotten hurt while doing woodworking was when I willfully ignored my inner voice of good judgment. When I was misusing a tool or my physical capabilities. When I was in a hurry. When I was mentally or physically tired. In short, when I made bad choices. Try to learn from my mistakes. For safety sake, choose wisely.

—Clay Foster, Krum, TX

Safety question #101 & #101a

Why is my 800-pound lathe jumping up and down and walking out of my garage? And can I reach the off switch without getting killed?

I can answer these questions because I personally ran a test to enable me to discover the answer, much to my surprise and fear.

Hints: No, I did not start the machine on high speed with an out-of-balance piece of wood, I did not catch my tool in the wood and bend the spindle, nor did the faceplate screws come loose.

I was happily turning a large piece of wood and it was still on the faceplate. The shaping of the outside was complete and I was trimming the outer edge round. The next thing that happens is my lathe is hopping up and down and trying to exit the garage. First I jumped back fearing evil spirits had taken possession of my lathe in mid turning. Next I determined I could get to the off switch without being trampled if I circled around the galloping beast.

But in the meantime, my wife was rounding the last turn to the garage door. She could hear the banging and thumping in the house and before it came to a stop, she was ready to ask the old question, "What happened?" It felt like a scene from the TV show "Home Improvement." I of course answered, "Aaah…"

After the dust settled I discovered a large piece of my 22-inch-diameter bowl was missing, creating a slight off balance. Well, it was only an $11^1/_2$-pound piece and I was running at 550 rpm!

At first I could not find the missing hunk of wood. How strange. I turn in one side of a double garage and my wife's car is in the other. Upon careful observation, I noticed a small dent in the top of the boss's car, right near where she's standing, arms folded and waiting for an answer. Being of analytical mind, I guessed the wood went that a way toward the car.

Investigation revealed that the wood had first hit one of the steel tracks on which the garage door travels, bending it about three

inches and knocking it out of it's bracket. It then hit the track the chain runs in and knocked the cover off the light. Next it dropped on the car (the boss's car) and made three dents in the top and a dent in the door coming to rest between the car and the far wall where it could not be seen.

Now you are probably wondering, what did that poor boob do wrong? Well as usual it was something stupid. The piece was about 22 inches in diameter and I had used my block and tackle to get it on the lathe. It also had a couple of bark inclusions, one of which was worse than I had anticipated. I never even worried about it coming apart while turning. I was concerned only about it holding together after it was completed. Sometimes we worry about the wrong things. The chunk that came off one side was about one fifth of the piece I was turning. It had a bark inclusion its full width and was 16 inches long with 3 inches of solid wood at one end.

If someone had asked me, previous to this experience, could bark inclusions be dangerous, I probably would have said yes. Don't ask me why I did not act according to what I already knew. When it happened, I was standing right in line with the outside edge I was trimming—another dumb thing. An $11^1/_2$-pound piece of wood about 8 inches from the center and turning at 550 rpm could probably kill you.

Take my word for it. Don't bother to run your own test. It's true. Bark inclusions really are dangerous. Just like they say. *—Bill Wohlfart, Central Florida Woodturners*

A revealing mistake

As a successful wood scavenger myself, I scanned Ron Hampton's article (*AW,* March 1997) about free wood quickly, until I reached the section about trading. Now I suspect that Randle Woods must do the bulk of their business in Western bigleaf maple, a wondrously varied common hardwood here in the Pacific Northwest. So I got quite a giggle when I saw that Mr. Hampton had received from Randle Woods a chunk of "figleaf maple." To my knowledge, there is no such tree around here, but I can assure you, Mr. Hampton, that if Eden had been in this part of the world, Adam would surely have selected the leaf of a bigleaf maple to provide him with more modesty than he got from his figleaf. The tree didn't get its name for nothing.

Sometimes we worry about the wrong things....Bark inclusions really are dangerous. Just like they say.

Thank you for the happy misunderstanding!

—Marquita Green Longview, WA

Resources for beginners

Dick Gerard's "Before your Begin" in the June 1997 issue offers good coverage of many subjects sorely needed for nascent turners. I have shared the article with the members of our Lexington A&C Association woodturning orientation group.

One added book resource we find particularly good for people just starting out: *Woodturning—A Foundation Course,* by Keith Rowley (GMC/Sterling, 1990). Several of us involved in helping get new folks under way have found this exceptionally well done. In addition to all the usual "how to," Rowley seems to have found the way to get it to the uninitiated with excellent clarity. It is as though he hasn't forgotten how it was when he started.

—Willis M. Hunt, Lexington, MA

Microwave observations

In the world of high technology, Japan ranks with the U.S. But in the world of amateur woodworking, Japan is an underdeveloped country. Re Bill Stephenson's "Microwave Drying" in the June issue, I have some experience home microwave drying and a couple of observations.

When you weigh the piece, if you make a simple graph of the weight difference at the same point in each drying cycle (say, immediately after a 3-minute zap), you can easily see the point at which to stop. At the early stages of the cycle, the curve descends steeply. But when the piece is dry, the curve flattens. You must stop a little before the curve is flat.

The other, easier way to determine when to stop microwaving is to look inside the oven. At the early stages water vapor escapes profusely from the end grain of the wood. It looks like smoke, but the wood isn't burning; the water vapor helps keep the temperature relatively low. When the water vapor stops escaping, the temperature of the wood rises, and the inside begins to burn. You need to stop microwaving before the water vapor completely stops escaping. Observing this guideline, you do not have to run the microwave intermittently; you can microwave continuously, so long as there is water vapor.

—Suminosuke Kawase, Nara, Japan

Erratum

The cantilevered wine bottle holder with corkscrew and bottle stopper pictured on page 3 of the June issue was made by Bill Badland of Morro Bay, CA. Bob Porter was the photographer.

You Know How to Turn, Now Write About It

Most of us love to turn beautiful objects on the lathe. We want to share them with others. We sell or give our turnings to people who appreciate them. Another form of sharing with others is to write an article about something that you make. Writing is not nearly as difficult as you might think. I am going to go through some simple steps that should make writing easier and less intimidating. But first I want to tell a brief story about why I wanted to write this article.

Last September, I flew to Seattle, Washington, for my yearly mountain climb. After spending four days climbing and camping on Mt. Baker, I was pretty well exhausted. For a change of pace, I went to the Woodcraft store in Seattle. Since I was on vacation, I had all the time in the world to leisurely "graze." The employees were terrific, helping me when I asked for help and letting me spend all the time I wanted browsing. I asked Jim Hull, one of the sales people, a question about finishes. This led to a pleasant conversation.

Jim showed me some examples of his woodworking displayed in the store: bandsawn and burl boxes, as well as turned pens—it was all absolutely beautiful. I could only dream of doing that quality of work. I mentioned my first woodturning article, published in *American Woodturner*, September 1996. Jim looked at the photographs of my turned objects in the magazine, and wistfully said that he would love to have his work appear in a national publication. "That would be no problem," I said. "With the quality of work that you do, just write an article about your work and send it in." Jim said, "No, I am not much of a writer." I made my purchases and eventually left the store.

I couldn't get Jim out of my mind. His woodworking was beautiful, but he probably would never see it in a magazine; never be able to share it with others outside of that Seattle store. The writing process intimidated him, even though I know he has the ability.

Recently I was talking with Ray McAdams, president of our local woodturning club. Ray's woodturning is some of the best in this part of the country. I asked Ray if he would like to have his work appear in *American Woodturner*. He said, "Sure, but I don't think I have anything good enough." Boy, was that a laugh! Ray does outstanding work. Like Jim, he just needs an article to go with the photographs! He could even write a short paragraph and submit his work for the mailbag section of the journal. (I happen to know that the editor is always looking for work to feature in this department).

My own writing started after Gary Roberts did a demonstration for our club. Gary suggested that we use bowling pins as a source of free, dry wood. I made potpourri bowls from bowling pins as Christmas presents. My first bowl took eight hours to turn. My last bowl took one hour. By the time I finished my last bowling–pin bowl, I was sick of bowling pins. But I thought I knew something about turning them that might be useful for beginners. Since there were no articles on the subject of using bowling pins, I thought that I had a chance to have an article published on the subject.

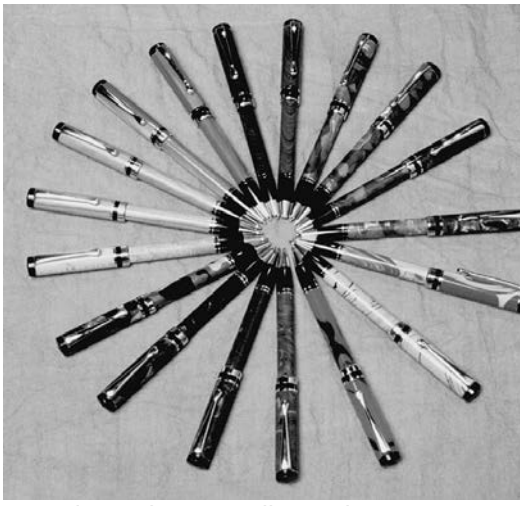
There are natural steps to follow when writing. By following these logical steps, the job is easier and more predictable. We all know woodworkers who can do beautiful work in a messy shop, but for our first attempt at writing, let's have a nice neat "shop" where we work in a logical, orderly manner.

Selecting your subject matter is the first and most important step in writing an article. Pick a topic that you know well and that you are good at. Look at your work. What have you been doing a lot of? Ask yourself, "Is there something about my work that has not been already explored or needs more explanation?"

Do some research in back issues of our journal to see if there are articles on the topic you have selected. An excellent index appears in the March 1997 issue. Look up your subject to see if there are any articles on your topic. If there are not too many, then you can proceed.

Using your old journals (or borrowing from a friend), look up those articles that mention your topic. If you cannot find a particular back issue, contact the AAW administrative office. They can provide copies of many of the back issues.

With topic in mind and research on back issues complete, contact the editor to discuss the subject you want to write about. You can write a brief letter or e-mail a message or call. The editor will let you know if he feels your idea is of interest to the readers of the journal. In addition he might even have suggestions based upon other readers' comments and questions. If he says he's interested, then go for it full speed.

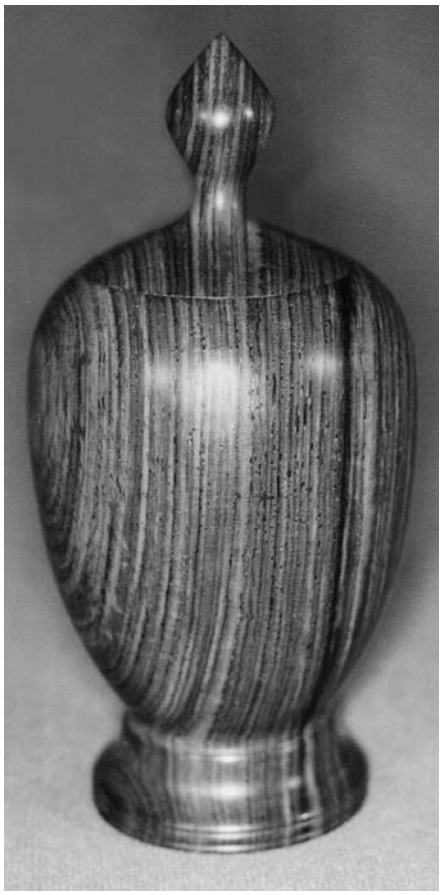


Turned pens by Jim Hull, Seattle, WA.

It is time to put pen to paper or "bang" on the keyboard. Make an outline. Use a yellow legal pad or a computer. Although a computer is more convenient for making revisions, don't let the absence of one stop you. Shakespeare always wrote his first draft on a yellow legal pad!

Take several days to write an outline. Give yourself time to think about your subject. New ideas will pop into your head as you think and write. Arrange your thoughts in an orderly manner. One way to write a how-to article would be to make the item while writing about the process. As you progress through the steps involved, jot down an outline. When your project is finished, your outline will be, too.

Here is an example of an outline:



Cocobolo finial box, 6" tall, by Ray McAdams, Ashdown, AK.

I. Introduction
II. The materials and tools needed
  A. The set up
  B. The steps involved in making an object
  C. the finish
III. Areas that might be a problem
  A. Defects
  B. Finishing problems
IV. Tips for success
V. Conclusion

Make paragraphs from the subject titles on your outline. Keep your sentences short and easy to understand. The first line of each paragraph introduces the topic. The rest of the sentences add related information.

In your first draft, get the concepts down in logical order. You don't need to be especially concerned with spelling or punctuation at this time. Just get the ideas down. Mentally go through the process you are writing about. You might even go to your shop with your first draft and see if you could duplicate the process using your article.

After writing the first draft, walk away from it for a day or two. This will give you a mental break that will encourage creative ideas and let you see weak areas. Reread your article. Look for ways to make it easier to read and understand. Remember that you know what you are talking about, but this topic may be completely new to your readers. Make your descriptions complete, yet simple, logical, and step by step.

When you have finished writing, proofread for spelling and punctuation to the extent that you can. The editor will take care of the rest. If you don't have a computer, I suggest that you get someone who can enter it into a computer before submitting for publication. Although this is not absolutely necessary, it will save the editor time.

If photographs should accompany your article, make sure they are of good quality. It will help your chances of getting your article published. You might be able to find a photographer who would be willing to photograph your work in exchange for a beautifully turned bowl. Prints (best accompanied with the negatives) are as acceptable as slides. Don't forget to label everything!

You are now ready to write a letter submitting your article for publication. The editor's name and address are on the table of contents page of the journal. Keep your submission letter short, just a few sentences. Simply say that you are submitting your article for consideration to be published. If you send photos, mention that they are included and provide caption information. Include the article on a computer disk, or e-mail it to the editor.

If your article is accepted, it is time to be flexible. An editor's job is to make articles better. That means changes, perhaps even shortening your article. My experience is that editors make articles easier to read and understand. They make me look good!

Why should you consider submitting an article for publication? You probably learned a lot about woodturning from somebody else. It may have been a teacher or magazines or books or videos. Now you have the opportunity to pass on some of your knowledge to countless others. You never know how far the ripples travel from the stone that you cast into the pond. When I submitted this article for publication, I included photographs of Jim and Ray's woodwork. Jim and Ray: here is your work published in the best woodturning journal in the world! Next time, you write the article!

If you write an article as a result of reading this, let me know. I would be very proud to hear from you.

—Ron Hampton, Texarkana, TX

TWO OVERSEAS EXCHANGES

THE FRENCH CONNECTION

Surrounded by 12th-century Catharian architecture, shimmering snow-capped Pyrenees peaks to the south and only a day's drive from the emerald waters of the Mediterranean, I found myself walking the streets of St. Girons in southern France with an abstract sense of placement, comfort, almost as if I were a true part of the temporaryness of time. Such was the setting this past May, of the first French woodturning conference to focus specifically on international contemporary woodturning as its theme.

Sponsored by Intercraft, a non-profit organization created by Colin Kentish and his wife, Charlotte, this three-day event drew approximately 120 delegates. It was held in a sprawling modern exhibition hall and featured a full trade show with lathes and related products from England, Canada, and Australia. Among the dozen demonstrators, there were Jean-François Escoulen and Christophe Nancey (France); Ray Key, Melvyn Firmager, and Dave Register (England); Richard Raffan (Australia); and myself.

This would be Kentish's first such event (a gutsy move, as he'd never even been to a woodturning conference before), so he wisely drew on the expertise of members of the British woodturning organization (AWGB) for logistical advice and planning. The result was an even-paced, non-frenetic, and totally inspiring event that drew its strength from the people in attendance and their intense interest in the subjects being presented.

There were, of course, the usual minor glitches to be expected with any inaugural event—sticky projectors and slanting screens and the like. But Colin's seemingly inexhaustible ability to be everywhere at once meant that everything happened when it was supposed to happen, or nearly so. After all, this was France, and we were working on "French time!" Very civilized, actually.

Alain Mailland's "Two Figures," in bloodwood, 11" and 13" tall.

Language proved to be no barrier, especially with the help of a gang of excellent translators who were hired for the event. Since none of these people were woodturners, some extra efforts were required to manage a few of the technical terms. Still, everyone seemed to enjoy the fumbles and bumbles, almost as if we were discovering a language between ourselves, or possibly even making it up as we went along. I also found that because of the language differences, people tended to be more visually connected with the presentations, and considerably more thoughtful of the questions they asked. It took only a look or a smile or even a giggle to know when one's message had been received.

Part of the message I received was that the craft of French woodturning is rooted in its culturally-based traditions; including the need to feverishly protect the "secrets" of one's technique from the eyes of other turners (a recurring theme during the event and an all-too-painful reminder of the state of American woodturning prior to the mid-1970s). It's no wonder, then, that the French were thrilled to have so many demonstrators so willing to share their knowledge on every level. After all, when surrounded by such a rich history of art and architecture, in particular a history that draws inspiration from the Renaissance to Surrealism, the divisions between art and craft remain quite specific and run very deep. So within this framework, attempting to make non-traditional (at least non-utilitarian) woodturnings—especially when there is no established market for them in France—seems a very brave step, indeed.

And there were plenty of examples of objects that illustrated the need to bridge this gap, including some pieces that were conceived as pure sculpture and clearly inspired by American designs; like Alain Mailland's "Two Figures" (photo, above left), which are reminiscent of Mark Sfirri's off-set turnings.

To help validate these efforts, I gave a slide presentation chronicling the careers of thirty contemporary North American woodturners that included their earliest works, their current works, and the number of years it has taken each person to evolve. It was an eye-opener for the French turners. Suddenly they felt included of this universal process of "growth," knowing that others have already walked a path that they have only recently begun to embark upon.

Which brings me to a final thought: Regardless of language and cultural differences, it's pretty hard to gather this many woodturners together and not have a smashing good time. And beyond the seminar, my twelve days of travel were additionally rewarded by the courtesy and helpfulness of the French people. Maybe it was because my wife does speak a little French, or that we avoided the larger cities, or that we came in early May before the onslaught of the tourist season…or that we simply bothered to ask as a means of finding our way. Whatever, folks are just folks, and we definitely connected. Ironically, besides the cost of food and gas and the speeds that people drive (whew!), my only real shock came in the first hour back at Kennedy Airport, surrounded by a language that I did understand!

Kentish's plans for next year's conference are now underway. I expect there will be many changes in the interim, and that future exposure will further enhance this very important French connection.

—David Ellsworth, Quakertown, PA

BERT MARSH IN THE USA

In one of the most exciting recent woodturning events, Bert Marsh of Brighton, England, flew to the U.S. for his first teaching engagement on this side of the Atlantic. He has participated in craft fairs in both New York and Los Angeles, but until now most Americans have seen only his finished work. Last April hundreds of people learned how he crafts his finely turned exotic wood vessels.

Bert Marsh, one of the grand masters of woodturning, started turning when he was sixteen, in 1948. Nearly half a century later, his internationally recognized career continues to flourish through a long love affair with wood and a dedicated, uncompromising search for perfection.

Virginia Palmer, in the author's Container Design class gets a hands-on lesson from Bert Marsh, left.

At the beginning of his professional woodturning career, he was already an accomplished cabinetmaker and lecturer at Brighton Polytechnic, teaching furniture making and woodworking. In the early 1980s he began turning elegant wooden containers full-time. Marsh's expertise as a craftsman results from years of intense practice and investigation into the properties and characteristics of wood. As he says in his book *Bert Marsh Woodturner* (Guild of Master Craftsman, 1985), "I am simply striving to achieve the perfect form, the purest possible curves expressed in simple, uncluttered shapes that will expose the beauty of the wood to the full. In seeking that goal, I find inspiration in many everyday objects, but most of all I am inspired by the wood itself."

Marsh's work is exhibited in galleries in England, the U.S., Canada, South Africa, Australia, Japan, and Germany. His experimentations—including those in scorching, texturing, and applied color—paved the way for now popular non-traditional techniques. When he first exhibited a group of natural-edge vessels, nothing like them had been seen before. Now they are common, though few attain the delicacy, elegance, and lightness of his.

Marsh was the feature presenter at last April's Collaborative Woodturning Symposium, which was hosted by Cleveland State University in Ohio and brought together the Northcoast Woodturners Association of Cleveland, the Buckeye Woodworkers and Turners Association of Akron, and Conover Workshops in Parkman. The program was funded by a grant from the AAW, CSU's Art Department and Department of Continuing Education, as well as the two clubs and workshop mentioned.

The symposium included a slide lecture, a discussion, an Instant Gallery, and several demonstrations, including some hands-on learning opportunities. The collaborative concept brought together the extensive woodturning resources of northeastern Ohio and exposed a wide audience to the field. The five-day event drew more than 350 spectators, including area woodturners, college and high school students, artists, and art collectors, and others. As orga-

OVERSEAS (CONTINUED)

nizer of the event, I chose Bert Marsh because he is an innovative artist who has developed excellent technical abilities. Marsh's many years of teaching experience and his understanding of classical forms were also vital criteria. Finally, Marsh, having never demonstrated in this country before, was a fresh presence.

An audience of 120 attended a Friday evening reception and slide presentation at the CSU Art Gallery, where Marsh presented the evolution of his ideas and techniques. Eighteen of Marsh's pieces were on display in the gallery. The following morning in CSU's sculpture department, Marsh demonstrated his techniques. Three closed-circuit televisions provided good views for the 100 of us there. Marsh explained his step-by-step system for turning and finishing eggshell-thin pieces, including his use of sanding sealer to reduce sanding time and wax as a finish. Remarkably, Marsh completes the exterior of his vessels, including the tiny foot, prior to hollowing.

Marsh utilized the CSU Art Department's new Oneway lathe, and Oneway President Tim Clay was on hand for a presentation on the special features of his lathe and his new sharpening system. Later Marsh critiqued the seventy-five works on display in the Instant Gallery.

On Sunday and Monday, Marsh gave additional turning demonstrations at Conover Workshops and The Woodworking Store in Parma. On Tuesday, Marsh provided one more demonstration and hands-on instruction for students of my Container Design course, as well as for visiting high school students.

Throughout the six-day event, Marsh distinguished himself as a gentleman and artist, openly sharing his knowledge and expertise in an easy-to-understand, friendly manner. *—Gene Kangas, Professor of Art, Cleveland State University*

CANDIDATES FOR THE BOARD

From the Nominating Committee

Here are four candidates for the three expiring terms on the board of directors. Please study their statements and call them, if necessary, to be able to vote knowledgeably. You will receive a ballot in the mail before the end of September. Ballots must be returned postmarked no later than October 21. The three candidates with the most votes will begin their three-year terms in January.

—Karen Moody, Board Member and Chair
Dick Gerard, Director Emeritus
Gene Kircus, General Member

Larry Hasiak, Tarpon Springs, FL

I have had the privilege to serve on the board of the AAW as V.P for the last year, and I would like to be re-elected in order to continue work in progress and to go forth with new exciting projects.

During my tenure on the board I have served as co-chairman of the Finance Committee and I am currently working to create a budget for the AAW. As the AAW is rapidly growing and developing into a dynamic, sophisticated, international organization, I think it is essential that there be a working budget to keep us financially on track and fiscally responsible. I also serve on the Chapters and Membership Committee and was chairman of the Conference Coordinator Selection Committee.

As a member of the Symposium Committee I have enjoyed planning the 1997 Symposium held in July in San Antonio. The Committee worked diligently, and it was exciting to watch the details unfold into a well planned and orchestrated gathering of over 650 enthusiastic woodturners.

In the past I have also served as president and vice-president of the Florida Westcoast Woodturners. I am committed to sharing the joy and satisfaction of woodturning with others. I have served as a guest demonstrator at the 1990 AAW Symposium, as an assistant instructor at Arrowmont, and as an instructor at the John C. Campbell Folk School.

The hard work that is required of each board member is stimulating to me and I would like to continue to work with the other board members, striving to be a cohesive team working toward meeting the needs of the AAW membership as a whole.

Norman Hinman, Yuba City, CA

My first turning experience was a pair of table legs for my daughter in 1979. Feeling mildly successful I tried turning a few other items. I was hooked!

In 1988 I learned of the AAW and I promptly signed up. The following January I heard about a local turning club, Nor-Cal Woodturners. At that month's meeting I learned it was a chapter of the AAW and I became a member. At the next election I became librarian, which office I held for two years. This was followed by a year as president.

After an early background in the livestock industry and formal training in biological science and biochemistry, my career moved into ruminant nutrition research at U.C. Davis, from which I am now retired.

I am a member of three artists' cooperatives, currently holding the office of president in two of them. I gained a bit of insight into the legal and business world in the past two years during which I helped organize a group of local artists to form and in-

CANDIDATES FOR THE BOARD

corporate one of the cooperatives. We are developing a series of training programs and fund-raising events for scholarships in the new cooperative in addition to maintaining a gallery for retailing our own work.

To date my only direct contribution to AAW's program has been the planning and preparation for the 1995 Symposium at Davis. I would welcome the opportunity to play a more integral part in AAW's continuing efforts to assist local chapters. My contact with novice turners while teaching the woodturning classes at the UCD Craft Center for the past seven years has helped me realize the need for programs that heighten public awareness of turning. As a director I would work to increase that awareness through exhibitions, judging programs, and demonstrations. I would also strive to develop and maintain close communication with chapters to stay abreast of their needs and wishes, as this is a very special interest of mine.

Phil Pratt, Greensboro, NC

Now that I've had the privilege for almost three years to be involved at a personal level in directing the AAW, amid all the growth and improvements, one thing remains constant, and that is the generosity and goodwill within this great community of woodturners. If you support me for a second term, you can be sure I will continue to promote the sharing of skills and talents among all our members, from beginning woodturners to full-time professionals. My basic objectives have not changed since I first ran for the board in 1993, but now I have a much better understanding of the time and dedication required of a board member.

My activities on the board have included: serving as AAW Secretary throughout my first term; on-site coordination of the 1996 "Turning Ten" symposium in Greensboro, NC; and chairing the Publications Committee and the Bylaws and Policy Committee. Through my committee work I have: presided over the creation of an AAW Policy and Procedures Manual and engineered the establishment of an AAW internet website. I'm also very proud of my active role in organizing the "Growth through Sharing" and "Turned for Use" exhibitions.

As the AAW continues to grow, I think our biggest challenge is the wise utilization of our resources. We've had great success in expanding our membership and conducting our national symposium. The AAW is on a solid financial footing and we need to hold a prudent cash reserve to guard against the unexpected, but I believe we should consistently commit a sizeable portion of our financial resources to new initiatives which advance the art and craft of woodturning, and help each of us improve our woodturning skills.

If you honor me with another three-year term, my efforts will continue to be firmly grounded in the AAW mission to educate, inform, and organize woodturners. Please call or write to me if you have any questions about me, or my service to this organization.

Robert Rosand, Bloomsburg, PA

I have been a woodturner almost since I dropped out of graduate school. A great deal of what I have learned has been self taught, but I have also benefitted immensely from the likes of Palmer Sharpless, David Ellsworth, Nick Cook, and numerous others who give of their talents unselfishly. I was fortunate enough to be at Arrowmont in 1986 when the AAW was born and plan to be around for a long time to come. I am running for the board because I would like t o give something back to the organization that has been so good to me over the past years.

I have been both the president and vice-president of the Mid-Penn Turners since its inception. Since its beginning, I have been the page editor (really tips collector) of the "Turners' Tips" column for *American Woodturner*. Over the years, I have written numerous articles for the journal and was recently one of the featured artists in *The Art of the Lathe* by Patrick Spielman. In the past few years, I have been recognized by the board of the AAW for outstanding contribution to the field of woodturning.

To date, I have demonstrated at two AAW national symposiums, some local symposiums, and at numerous local chapters. Besides demonstrating around the country, I have given some workshops of my own and will soon begin to teach woodturning in my home.

My focus has always been on the beginning or novice woodturner. Most of my articles deal with beginners as do many of the tips in "Turners' Tips." Considering that many of our members are at a beginning level, I feel that this is only proper. In the journal, I would like to see a regular "beginners" column and would gladly help make this happen. On the internet, I would like to see the presence of a regular chat line on the AAW home page. Most of all, I would like to continue stressing what I think I am good at, the interests of the beginning or novice turner.

Tighten and dry

Rather than wait many weeks or months for rough-turned pieces to air-dry, I have been kiln-drying fifty to seventy pieces at a time in my home-built kiln before re-turning them and applying finish. The danger in this process is warping and cracking; I lose at least 10 percent of the pieces. I've reduced that to 1 or 2 percent since I started using hose clamps on those pieces judged most likely to self-destruct.

I use one to three bands per piece, depending on the shape, including one on the waste piece turned on the

foot for clamping in the one-way chuck. I open the kiln after 12 to 36 hours and re-tighten all the bands. The amount of shrinkage is truly amazing.

My intent was to reduce cracking, but I have also noted far less warping. I suspect this process would also be beneficial during air drying.

Hose clamps come in various sizes and at least two types. Ace Hardware carries the type that adjusts immediately to a snug fit without having to be screwed on all the way from the end of the band. Bands can be fitted together in series on large diameters. Prices range from 50¢ to about $1 per band, depending upon size. Prices in the industrial supply catalogs are about the same.

—Darrell Rhudy Raleigh, NC

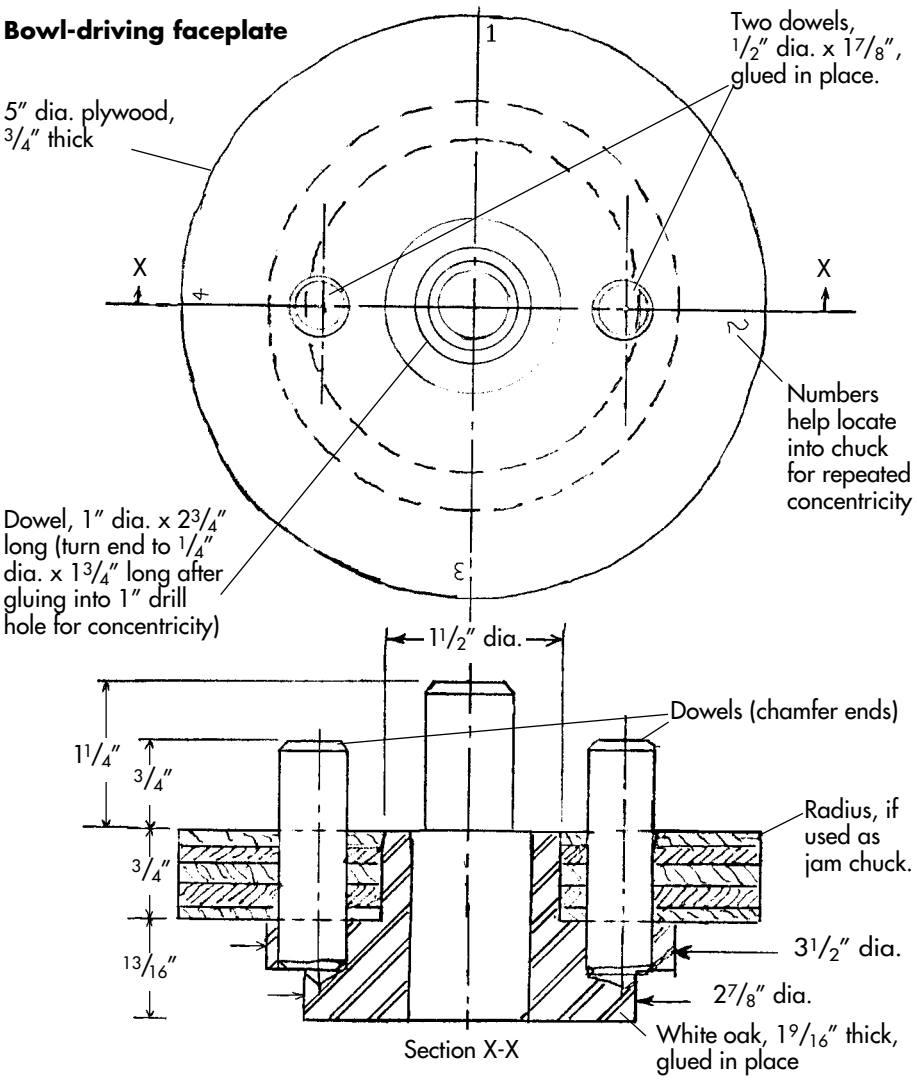
Bowl-driving faceplate

If, as one of my fellow workers used to say, "Any idea that generates more ideas is a good idea," then John Jordan is full of good ideas. He demonstrated at our North Coast Woodturners local chapter a while back, and I had to rush to my lathe to try out the flood of ideas he offered.

I had several nice 8-inch blocks of fresh-cut apple that I tried in my Delta bench lathe using a spur drive center and a ball-bearing tailstock center. I found the spur center acted like a boring bar, making a neat 1-inch hole that became deeper every time I tightened the tailstock. This development would prove to be an eye-opener.

I have a 6- and a 3-inch faceplate, also a Stronghold chuck. John had chucked a 3-inch-diameter, 4-inch-long wood block, shaped the end round, and used this spigot to reverse-turn the bottom of a natural-edge bowl, placing a folded paper napkin between the spigot and the inside of the bowl and keeping the bowl in place with the tailstock. I figured I could apply a modified version of this spigot/tailstock idea to an earlier stage of bowl turning: roughing the outside before the inside has been excavated.

I mounted a wood faceplate in my Stronghold chuck and used dowels, one centered and two diametrically opposed, to center and drive the



bowl blank. This mounting obviates the need for screws: drill holes in the interior waste of the bowl blank corresponding to the dowels in the drive plate, fit the bowl blank onto these dowels, and hold the blank in place with the tail center

My bowl-driving faceplate is illustrated on page 10. Since making and working with it successfully, I've discovered a similar idea in Mike Darlow's book, *The Practice of Woodturning*. Darlow's "bowl driving center" is a metal version of my wood faceplate, with bolts where I use dowels. Darlow's bolts are ground sharp and bite the wood, rather than fit into drilled holes, but the idea is similar: the blank is held to the drive plate by pressure from the tailstock.

Good ideas can be "discovered" in all kinds of ways.

—Jack Freeman, Olmsted Falls, OH

Anti-fog cream

If you have trouble with your face shield and/or glasses fogging up, try a product called "anti-fog" cream. I use it on both sides of my face shield. It polishes and cleans plastic and glass and also seems to repel most dust. One application will last several turning sessions. You may find it in an optical shop or department store. The product I use, "Anti-Fog" is made by World Optical, Arlington, TX. Phone: 817-261-9711.

—Mike Kornblum, Mtn Home, AR

Rotating tool rack

Over the years I have acquired many turning tools, and, having poor vision, I often find it difficult to locate the right one when I need it. Pictured here is my rotating tool rack which stores twenty tools upright in an area 16 inches in diameter.

I started with a 5-gallon plastic bucket and cut off the top half. I fastened twenty 7-inch lengths of $1\frac{3}{4}$-inch PVC pipe to the bottom half of the inverted bucket with drywall screws at the lower end of the pipe

and hot melt glue at the top end. The drywall screws serve as a stop for the tool handle and allow chips and dust to fall through. I cut the top end of the pipe at an angle (facing outward) for easier tool return. Some handles had to be sanded down a fraction at the butt to fit the $1\frac{3}{4}$-inch pipe.

At the cut end of the bucket I used crossed 2x4s to provide a wood surface for a 12-inch lazy susan bearing. For the other side of the bearing, I used a 16x16-inch piece of $\frac{3}{4}$-inch plywood.

—Kenneth A. Story, Chattanooga, TN

Ideal pedestal display

For a long time I have looked for a simple means to elevate my turnings above tabletop level for display. What's needed, of course, are simple pedestals, easy and inexpensive to make, of differing heights and diameters, that do not detract from the items being displayed. Having unsuccessfully tried several designs, I was very pleased to see what I consider the ideal display pedestal featured in the AAW's 1996 Instant Gallery videotape of the Greensboro symposium.

In case you haven't seen the tape, the display pedestals are cylinders about 4 inches in diameter, pure white, with a natural-finish, light-colored wood top, about 1 inch in thickness and 5 inches in diameter. I understand they were designed and made by Charles Brownold. My attempt to duplicate them requires very little time or money, as the tops are made of scrap wood and the columns are inexpensive plastic sewer pipe. The pipe comes in various diameters and can be purchased inexpensively in 10-foot lengths from most lumber or hardware stores.

Cut the pipes to your desired length; I used a bandsaw with the miter gauge set to 90 degrees. For a cleaner edge, first turn a mandrel the diameter of the inside diameter of the pipe, slip a length of pipe (slightly longer than your desired finished length) onto the mandrel. Using your parting tool, cut through the pipe at each end to square them off. A tight fit on the mandrel or a small brad through the pipe into the mandrel will keep the pipe from slipping.

Make the top of any wood about $\frac{3}{4}$ to 1 inch thick and about 1 inch larger in diameter than the diameter of the pipe. Bandsaw the blank to a rough diameter and mount it on a 2-inch faceplate with a ring of hot glue. Turn the blank round, and round over the edges to a pleasing radius. Using a parting tool turn a groove the diameter of the outside pipe diameter and the thickness of the pipe on the *faceplate* side of the blank. Sand and finish the top while still on the lathe. Remove the top from the faceplate and set the pipe into the mortise. The pipe can be cleaned of dirt, lettering, or other marks with a quick application of lacquer thinner or similar solvent.

These pedestals are easy to make, set up, and take down; inexpensive; and lightweight and compact for travel. My turnings are now displayed in much more appealing table arrangements.

—Kenneth H. Evans, Valley Falls, NY

FIESTA FEEDBACK

Tips from the '97 San Antonio symposium

San Antonio Municipal Auditorium

EDITOR'S NOTE: *Because this year's symposium was scheduled late in July, I asked attendees to help streamline coverage for this issue of the journal. I wanted to be able to provide a sense of the various and many valuable insights that fill an AAW symposium. And because the deadline to the printer was near, I needed to catch the ideas before they left San Antonio. A box was placed on the registration table and attendees were asked to fill it with notes they had made during presentations, reflecting the most valuable tips and insights they had gained. For inclusion, an item ought to have registered an "Ah ha!" from the contributor. Following is a selection of material from that box. And thanks to everyone who pitched in!*

Betty Scarpino on decoration

Betty Scarpino offered a fascinating series of lectures on surface treatment techniques, including bleaching, coloring, and texturing wood. Betty uses an inexpensive ($6 to $20) engraver to add texture to wood. This is the same type engraver that we use to engrave our names on household items. The effect is very beautiful and has the advantage that the area that is textured does not require a lot of laborious sanding.

Betty demonstrated the bleaching of wood using a wood bleach from your local paint store. She cut some grooves in the bowl to confine the bleach. Then she applied the bleach with a cotton swab and let it dry in the sun. Two to three applications usually are adequate. Betty has applied fifteen to twenty applications on some wood, but that runs the risk that the wood might crack. After bleaching walnut or some other dark wood, line carvings in the bleached area reveal the dark wood underneath. If you then burn portions of this thin carved line, you have a piece with three different shades of color. Oiling the wood highlights the color.

Betty also created multicolor pieces by first painting her turning and then incise-carving through the painting with a power carver. She smears paint in the carved lines and wipes the excess off. If she wants a third color, she seals the first and second layers of color with a lacquer and then applies a third color to a newly carved area. The unwanted paint will flick off from the protected lacquered area with a little rubbing.

Betty also makes extensive use of a band saw and a $^1/_4$-inch belt sander, thus creating beautiful, unusual shaped objects.

—Ron Hampton, Texarkana, TX

Larry Mart on photography

Larry Mart's session on "Photographing Your Work" finally cleared away a lot of the misconceptions and problems I was having after many attempts to take good slides of my turnings. Larry showed how to make a simple photo tent and diffuser (similar to the one Steve Meltzer described in the June '96 journal) from PVC pipe and a bed sheet. Adding some aluminum reflectors and clear photoflood bulbs, it's possible to put it all together for less than $75.

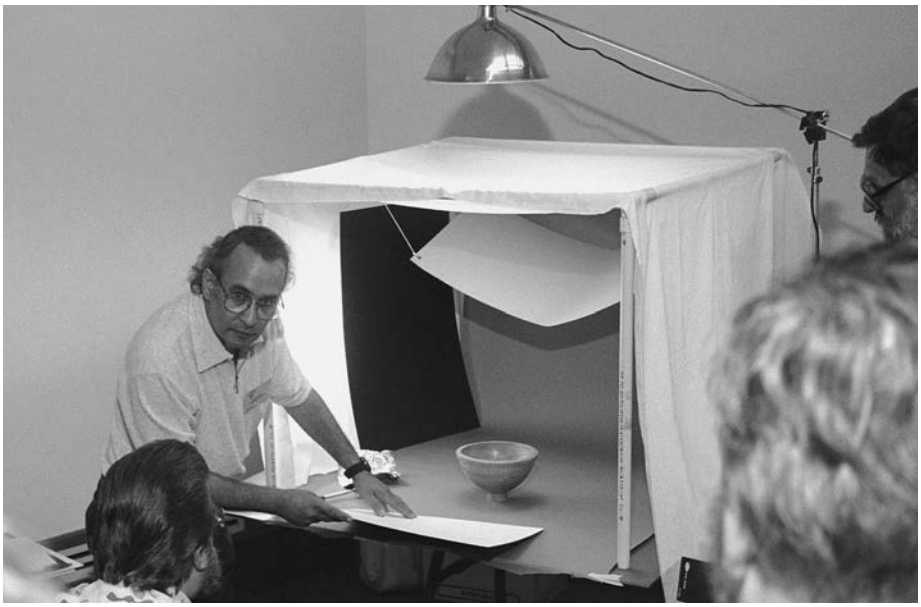
But his real nuggets of wisdom dealt with "shading down" the background by adding a baffle between the light tent and the seamless background paper, and brightening dark areas by bouncing light off of white cards and aluminum foil. "Every time you add another light, you add another shadow," warned Larry.

Mart also provided sound advice on getting the right depth-of-field (go for f22, unless you're purposefully trying to throw part of your object out of focus) and "bracketing" exposures to get a range of lighting contrasts to choose from.

—Phil Pratt, Greensboro, NC

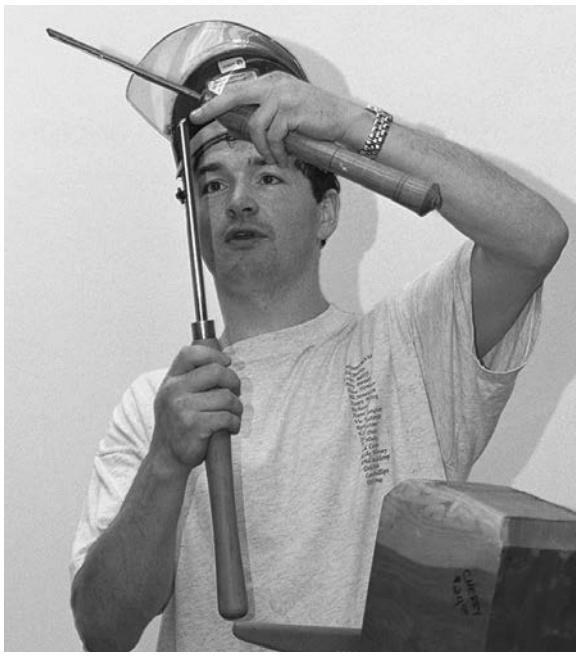
David Ellsworth on seeing form

When checking the shape or form of


Larry Mart's table-top photo studio includes baffles and reflectors to control light.

Photos: Rick Mastelli and Larry Mart





Mark Blake, left, explains how he inserts a contrasting wood to turn hollow forms with tiny openings. Johannes, center, shows his rubber-band hat-bending form. And Stuart Batty, right, discusses the fine points of tool bevel angle.


Virginia Dotson, left, spoke on her lamination techniques. Ray Key, right, demonstrated flange and rim designs.


David Ellsworth, left, spies a piece in preparation for the Instant Gallery Critique. At right, Ray Key and Stuart Batty show off a massive hollow form during the critique.

a piece mounted on the lathe, tilt your head and turn the lathe on to see the true silhouette without being distracted by the grain.

—Dan Anderson, Itasca, IL

Alan Stirt on assessing form

Your hand is a better judge of a curve than your eye. Sometimes when you look at a piece you can sense that the curve is not right, but you can't tell what is wrong. When you put you hand on it, you can feel exactly what and where the problem is. *—John Buso, West Palm Beach, FL*

David Ellsworth on grinding

Practice moving the tool with the grinder off, so that you can see how the bevel is presented to the stone.

—John Buso, West Palm Beach,

Alan Lacer on sharpening

Use a slip stone (one quick pass almost perpendicular to the tool edge) to put a fine burr on a scraper. It's quicker than using a burnisher.

—Rick Mastelli, Montpelier, VT

Steve Loar on creativity

Think about what you're doing, why you're doing it, and where you're going. Don't just make things you're comfortable with; think about why you are or are not comfortable with things. Think about the work you encounter from others and see where they are coming from and why. You'll appreciate the work more.

—Bob Clancy, Sandia Park, NM

Remi Verchot on ambidexterity

Learn to turn both right-handed and left-handed. The body, not the hands, really controls the tool.

—Unsigned

Betty Scarpino on creativity

To find our creative center, Betty says we should shed some of our long-held beliefs about form and line and surface treatment. She says we have to allow ourselves room to be influenced not only by woodturners whose work we genuinely admire, but also those who leave us puzzled. Betty says we need to "connect" with what intrigues us about another person's work, and then keep a playful attitude as we experiment and find ways to redefine that person's techniques and designs.

She also advises us to never hesitate to ask questions when we're stumped. That's why this generous community of woodturners exists.

Finally, Betty was able to convey to me, and many others, the importance of taking risks, pushing the limits of today's design concepts, and having the gumption to completely fail and then try again.

—Phil Pratt, Greensboro, NC

Who on tightening a jam chuck

Instead of using a paper towel on a jam chuck to tighten a loose fit, use strips of masking tape. You can adjust the fit more easily by adding or removing a layer.

—Clayton Cochran, San Antonio, TX

Stuart Batty on the parting tool

Grind your parting tool with a straight-sided point instead of hollow ground. This type of grind provides a longer lasting cutting edge, and the straight sides provide additional cutting edges, making the tool more versatile.

—Herman Burghard, San Antonio, TX

Mark St. Leger on teaching

Contact your local school's vocational teachers twice a year. In September, make yourself available to do a demo, bring wood samples, or help in some other way. Call again in February to help judge projects at spring contests.

—Kent Crowell, Midland, TX

Non-turning tips

Design a club T-shirt or pins with your local club logo for members and supporters. Give these to visiting demonstrators to encourage more exchanges of demonstrators between clubs.

—Judy Williams, Austin, TX

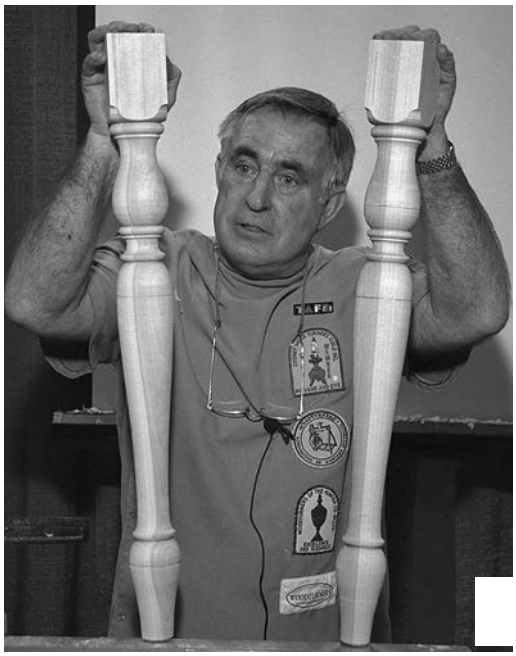
Steve Loar on originality

You don't try to be original, you try to be accurate to your own experience (attributed to photographer William Clift).

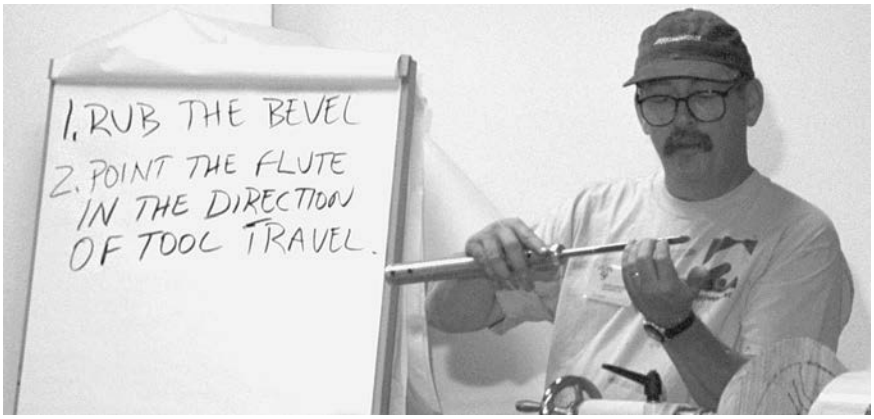
—Rick Mastelli, Montpelier, VT

Despite subdued lighting, the trade show was full of energy.

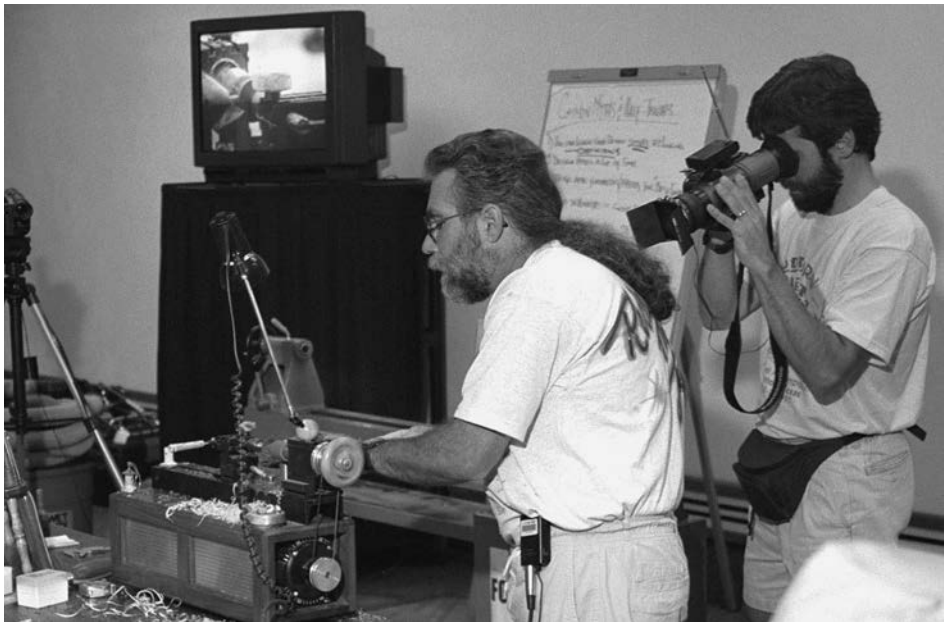




Nick Silva, left, explained how to transfer graphic designs to turnings. Alan Lacer, center, demonstrated basic blacksmithing, first squaring a rod before shaping it. And George Hatfield, right, demonstrated how to turn duplicate furniture components.



John Jordan, left, explains the side-ground gouge. Frank Sudol, right, makes cutters from planer blades for his deep hollowing rig.

Todd Hoyer, left, offers an impromptu critique in the Instant Gallery. Mark St. Leger, right, demonstrates projects to engage beginning turners. Videotape scenes from symposium demonstrations and the Instant Gallery will be available in December.

My First Symposium

JIM KELLER

As I drove home from San Antonio, I realized that I had not responded to Editor Rick Mastelli's request to leave him a note on a useful tip I had learned at the Symposium. Thinking of all the tips that had been shared with the attendees by the many talented demonstrators, I became more and more excited about the three days I had just spent with the AAW family.

When I first looked at the rotation schedule on opening day, I was in a real quandary—in each rotation there were three demonstrators I wanted to see. Prioritizing what I would attend was more complex than laying out a six-axis turning! Several times I bounced back and forth between two demos, hoping to absorb all I could.

In Steve Loar's "Design, Creativity & Sketching" demo, I was struck by the dialogue between Loar and David Ellsworth, concluding that "design and concept lack definitive rules." My next stop was with Virginia Dotson who opened up some ideas for me to expand the concept of a laminated series that I had let die three years ago. I found Christian Burchard a charming presenter. He conveyed his love of creating art through his enthusiasm. I learned from Burchard to evaluate how the eye travels across the a piece, and that a flat area will kill the interest of a sculpture.

On Saturday morning I attended "How to Give A Demonstration." I joined the Gulf Coast Woodturners in 1992 and owe all my turning knowledge to the many turners who have shared their skills and experience with me. I feel a responsibility to repay this debt by passing along my experience to new turners. But I have been apprehensive about being a demonstrator. The panel discussion included David Ellsworth, Clay Foster, John Jordan, Bonnie Klein, Steve Loar, and Alan Lacer. The next hour and a half was extremely insightful. I came away with four pages of notes on how to become a better demonstrator with suggestions, including: begin with thorough preparation, outline your demo, assume responsibility for your demo, know your audience, think like a student, learn by doing, be entertaining. As can be expected from such a panel, interesting stories' creep out. I would still like to know how Clay Foster taught thirty old guys to turn, first turning out the lights to capture their attention.

As the morning continued, Lyle Jamieson's description of how he created his human torso forms was very interesting. I found his concern for the safety of his fellow turners heart warming as he stressed safe ways to make various cuts and why certain tool placements were dangerous. After a break for lunch it was on to Hugh McKay's design presentation and a discussion on how it was difficult to teach creativity. Betty Scarpino shared with us many tips on surface treatments in a very entertaining manner, including techniques, materials, tools, and designs. She offered new ideas for salvaging mistakes.

Saturday night brought the banquet with wonderful fellowship among fellow turners, fair food, a little dose of boredom, and the excitement of the live auction. The generous spirit displayed by the artists, both the famous and not so famous, and the many bidders, all supporting the Education Fund, made me proud to be part of this group. Two of the highlights of the auction were the spirited bidding on a yet-to-be-turned piece by David Ellsworth, which brought $2,800, and when Tom Irven, a fellow Gulf Coast member, was the successful bidder on the last piece of the evening, a candlestick by Christian Burchard, the mate to a piece in the "Turned for Use" show.

Sunday started with an informative rotation with Ray Key and the thought that "The wood should speak for itself." I attended the Instant Gallery Critique hoping to receive comments on the pieces I had brought. We learned from Ray Key, Stuart Batty, and David Ellsworth that many pieces fell short of their potential because they lacked crisp details, and that creating drama is a wonderful part of design. It was interesting to listen to Stuart's views from the perspective of a spindle turner versus Ray's as a bowl turner and David's as an artist and philosopher. When they came to my first piece "Morning Glory Series #4," Ray Key bellowed out that my pride and joy lacked fluidity, David commented favorably on the change in texture and materials. Stuart then found my second piece, "Sea Flower," and all agreed that this piece had better balance and a natural feeling. I found the observations very insightful and I believe entertaining.

Interested in increasing the number of art galleries showing my work, I attended Carol Boden's session on the art market. Remember, we are all partners in selling art, and we artists need the support of good art galleries. As the symposium was winding down I sat down in Remi Verchot's session on eccentric turning. I found him to have an understanding of woodturning and skills as a teacher far beyond his seventeen years. His presentation was entertaining and informative and his thoughts on creating were astute. I will always remember the "Cool Dude Turner" with his shades.

I was facing a letdown as I left my last rotation with Remi. Passing Room 3, I noticed Christian Burchard was still in full swing on sculptural off-center turning. I walked in, saw what he was doing, and immediately visualized a concept for a piece of wood I have been looking at for two years.

On the trip home new design ideas crept in to my mind, combinations of techniques that I had seen became clear, the door was open to creating shapes and forms I had not done before. And yes, "Morning Glory #5" will have fluidity, thank you, Ray. The more I drove the more excited I became. I feel truly blessed by the experiences of the weekend, and cannot over-emphasize the depth of knowledge to be gained by attending a national symposium.

BATS & BOWLS

A

"Baterpiller," by Clay Foster.

A seven-story bat marks the Louisville Slugger Museum, on the same street as the KACG.

LOUISVILLE, KENTUCKY, IS HOME of both the Hillerich & Bradsby Co., makers of the famous Louisville Slugger baseball bat, and the Kentucky Art and Craft Gallery. In fact, they're neighbors on West Main Street. The collaboration, then, conceived by furniture-maker and sculptor Craig Nutt, was perfect. Inspired by Mark Sfirri's well known series, "Rejects from the Bat Factory," Nutt, along with KACG Curator, Brion Clinkingbeard, invited twenty-four artists to "create a bat, either from an ash blank provided by Hillerich and Bradsby Company, or from materials of the artist's choice. In addition, each artist was asked to exhibit a work which is representative of his or her body of work." The result is a lively and playful exhibition, including work pictured here from the show catalog, which was a stack of baseball-style cards. The show travels next to Murray State University in Murray, Kentucky, September 22 through October 30.

Says Nutt in his Curator's Statement: "The art of wood turning has much in common with the game of baseball. Imagine the batter stepping up to the plate, the wood turner approaching the lathe, each seeking the precise balance between freedom and stability. The ball player's bat and the turner's gouge become extensions of the body, each seeking the sweet spot of the object spinning toward it. Both the player and the turner are focused on results yet fully involved with the process. Each pursuit has its own pace, its own sense of time. They are linked by a turned object, the baseball bat."

Craig Nutt at the plate with his "Spudwacker," one of twenty-four pieces inspired by America's favorite pastime in the "Bats & Bowls" show.

"Neckpiece," by Bonnie Klein.

SPINDLE TURNING FOR FURNITURE

Essential tips, addressing common concerns

ALTHOUGH THERE ARE MANY TYPES of furniture that do not employ turnings, the development of furniture design and the art of spindle turning are inextricably linked. Historically, before the use of rotating-head planing machines or even table saws, turning was perhaps the quickest way to produce many furniture parts. Some styles of furniture, such as Windsor chairs, do not require square stock at all, but here I will primarily discuss turning spindles from squares.

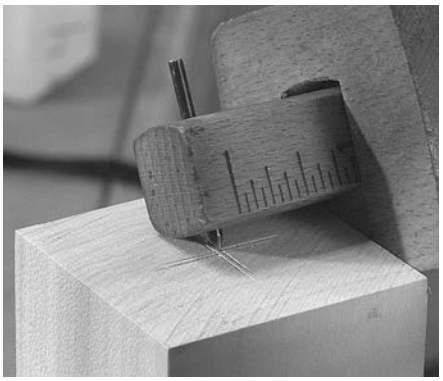
While spindle turning for furniture cannot be covered thoroughly in a single article of this size, the topics covered here are essential—they represent 1) the questions my students most frequently ask, 2) points inadequately covered in other publications I've read, and 3) my attempt to correct common errors.

Preparing the square

Most turnings for furniture have some part (called a *pommel*) that is left square in the finished piece for the attachment of rails, and these surfaces should be prepared first. It is important that squares of wood for turning be straight, parallel, and truly 90 degrees (not a rhombus). This is usually accomplished using a jointer and a planer: With an accurate fence on the jointer, you surface two *adjacent* sides at right angles. Then, with a planer, you surface the remaining two sides of the square, keeping the previously machined sides face down on the bed. This method ensures that the sides are equal and square.

If you do not have a planer, then parallelism can be established with a table saw. The sawn surface can be cleaned up by some hand work, or by taking one light cut on the jointer.

Next, cut the blank to finished length. Do not cut the stock longer, as this will only make the turning more difficult.



The center of a blank is found equidistant from the sides, not at the intersection of lines drawn through the corners.

If the flat surfaces of the squares have planer marks, it is best to sand or scrape these off now, as this is difficult to do after turning without damaging nearby turned details.

Marking the square's center

Many books advise finding the center by drawing two lines from corner to corner. It is much better to use a method that locates the center equidistant from the *sides*. Use a marking gauge (photo, above), set to approximately one-half the diameter, and make four marks. This will yield a tiny square, the center of which you punch with an awl.

For production work, a centering jig (photo, below) increases efficiency. You slide the work along the fence and into the pin four times, rotating the work a quarter turn each time. A wedge under the pin block makes it easy to adjust for different size stock. The pin is actually a wood screw with its head sawn off and filed or ground to a point.

Mounting the work

Some authors advocate cutting grooves in the end of the work to receive the spurs of the drive center. But if you need to cut grooves in order to keep your spur center from slipping, there is something radically wrong with your spur center. Some say to drill a hole for the center point, or remove the spur center from the lathe and drive it into the end of the work with a mallet. All of these procedures are not only a waste of time, but they prohibit you from making adjustments to the center location on the lathe, which is necessary for accurate work. Why would you need to make adjustments to the location of the centers after the wood is on the lathe? There are four reasons:

1. There may be errors in your centering jig or punch mark.
2. Certain woods, such as oak or ash, have hard and soft layers. When

A simple jig speeds center marking in production work. It consists of a fence and a block with a pin. The block is clamped to a tapered shim for height adjustment.

Photos: Jon Siegel and Patrice Martin

the lathe centers are pressed into the ends of the work, they will drift into the nearest soft layer, causing inaccuracy. To some degree drifting of the lathe center can happen with any type of wood.

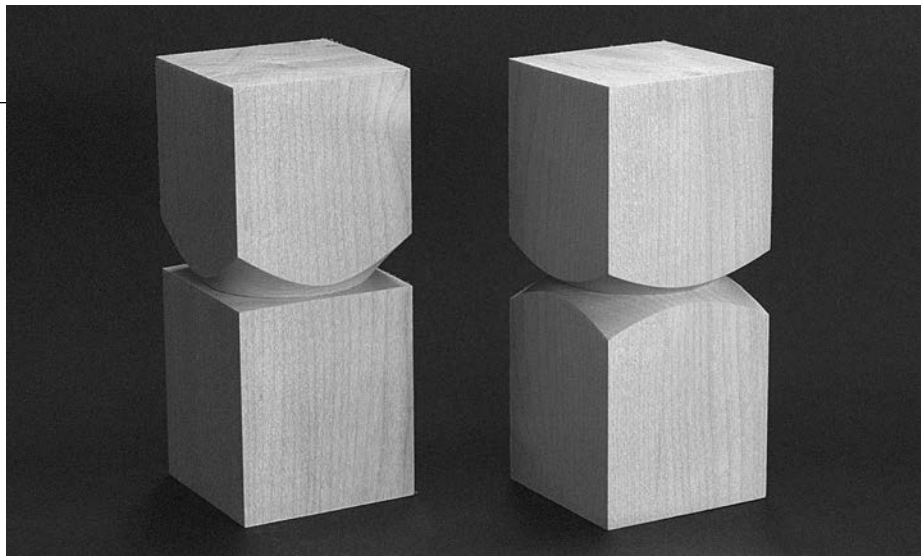
3. The wood may have warped between the time it was straightened on the jointer and the time you are turning it. In order to achieve full diameter or concentricity in the middle (or some other chosen point), it might be necessary to offset the center at the ends.
4. The wood warps while it is being turned. This is due to the release of internal stresses.

What is needed is a way of mounting the work from *point to point* and setting the piece into rotation without the spurs engaged. Then it is possible to achieve perfect centering through testing and correction.

With the work rotating, note whether it is centered or the degree to which it is not by nicking the corners with a pointed chisel and stopping the work for inspection. Whichever corner has the deepest nick needs to be moved toward the axis. Tap the piece with a mallet, tighten the tailstock, and test for centering again. Repeat the process until you've achieved the desired degree of accuracy.

In order for this operation to proceed smoothly, your lathe centers must be well tuned. Sixty-degree points are ideal because they allow the most sideways movement as the point is driven deeper. The total amount of adjustment possible by this method depends on factors of hardness and weight of the work; in some cases you may have to withdraw the point completely and reset it.

All of the above pertains to furniture (or architectural) parts that have a square portion. If you are making Windsor chairs, you can ignore this. For work that is turned all over, rough-saw the stock $^1/_{16}$ to $^1/_8$ inch greater than the largest finished diameter, and it may be worthwhile to rip the stock to an octagon if you are doing many pieces. Some furniture parts, especially chair parts, are riven (split) out of logs. (Riven wood may be centered on the lathe by a method of measuring "negative radius" from an accurately positioned tool rest. The centers of a mounted piece of wood are adjusted until no part is more than a given distance from the edge of the tool rest. I learned this method from Vermont chairmaker Dave Sawyer.)



The square transition shown at left is required in some architectural styles. It is somewhat more difficult to produce than the common conical form, right.

Cutting pommels

The first step in nearly all furniture and architectural work is making the transition cut from the square to the round. I know this process gives many beginners trouble, so I will say a few words about it.

Draw a pencil line around the work where the transition is to be made. It does not need to be drawn on all four sides, but it helps. Use a soft pencil so the lines are dark and can be seen with the work rotating.

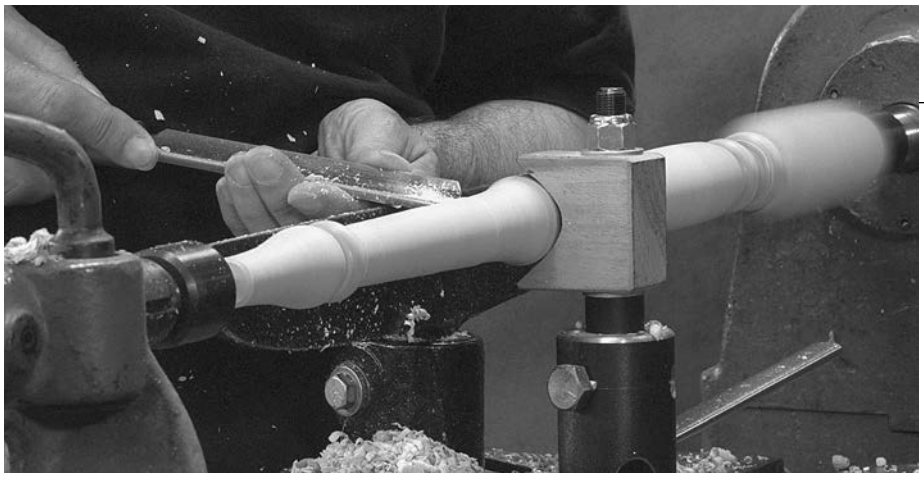
Cutting a vee into the square is really the same as cutting into a solid round, except that it is harder to see where to start each cut. When making this kind of intermittent cut, it helps to have good light and a black background behind, such as black sandpaper. Use the point of the skew chisel rather than the heel, because it is easier to see what you are doing and the point cuts more freely. Make the vee about 10 degrees wider than the point of the skew so it can cut cleanly to the bottom. Cut alternately from the left and the right, each time aiming at your pencil line. Lean the skew so the edge trails just above the surface being generated. When the pencil line is gone, and you feel the chisel cutting smoothly into the solid wood, stop and check. You may need more depth if, for example, you want to start a bead at that point.

The transition cut should be made carefully so that it does not require any sanding that would destroy the crispness of the intersection.

It is more difficult to make a transition that is square rather than angled from both sides (see photo, above). If the cut is not exactly at 90 degrees, then the resulting intersection will not be a straight line as it should be. I discourage this type of design, which is intended to mimic architectural stone work.

The long and the thin of it

Length is the enemy in spindle turning. Vibration of long, thin workpieces is a problem in most furniture work, but with the right approach, and a few special tools, these problems can be overcome. Many factors



To run smoothly against the work, the steady rest should have enough contact area to span the width of several growth rings.

contribute to success, and you should try to apply as many of the following rules as possible whenever workpiece vibration is a problem.

1. Do not leave extra length of stock to be cut off later. Allow only a minimum (about half the diameter) for cutting finials off.
2. Use a minimum of tailstock pressure. (If the spur center slips, maybe the center point is too long, or the spurs are not sharp.)
3. Use slow speed.
4. Start in the middle and work toward each end.
5. Use even-textured wood, if possible, not layered or ring porous.
6. Use a gouge with a small nose radius, especially for figured grain.
7. Use your hand to steady the work, or if that fails,
8. Use a steady rest.

The use of the hand pressing against the work to dampen vibration is often necessary in long spindle turning, and it gives the turner a needed tactile connection with the workpiece. The hand is able to detect surface errors that whiz by too quickly for the eye to see. The hand is also better able to locate the "lumpiness" in a long straight section. There are certain dangers involved of course—brushing against the square portion is the most common. Accidents can occur when fingers are caught between the work and the tool rest. But even without accidents, at the end of the day there is only so much skin that you can afford to wear away from the palm of your hand. Eventually, you need a steady rest.

I suspect that the reason most steady rests fail is because they are designed by engineers who have only a metalworking background, so they are modeled after machine lathe types. The makers forget to take into account that when pressure is put on a wood surface, the amount it indents varies over the hard and soft layers of the wood. Once the surface upon which the steady rest is bearing becomes uneven, it causes vibration instead of stopping it.

My own frustrations with this problem led me back to Frank Pain's *The Practical Woodturner* (first published in 1957 by Evans Bros.; then Drake, 1976; revised by Sterling, 1990) from which I had learned so much in my early years as a turner. Pain's book pictures four steady rests, all made entirely of wood. Why are these rests successful? I realized that the area where the wood contacts the workpiece is greater than the width of one layer (growth ring), so the workpiece rotates smoothly against it. Eventually the mother of invention led me to the type of steady rest pictured above, which I have used successfully for many years.

Repetition and duplication

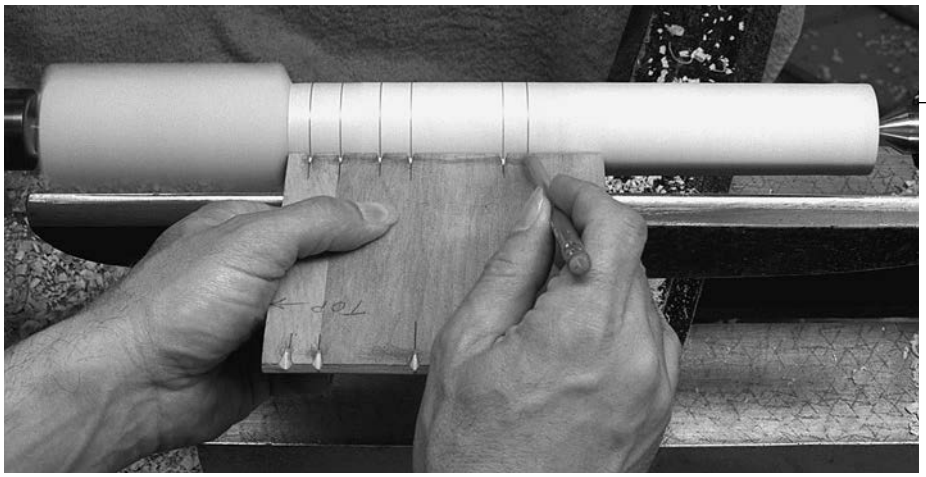
It is amazing how often I am asked, "How do you make turnings that are all the same?" I respond, "They are not the same; they just look the same."

In order for parts to look alike, they must possess two characteristics: The measurements must be alike, and the curves must have the same shape. The measurements are taken from critical points and measured in an x-y fashion: a certain distance from the end or some other feature (*axial*), and a certain diameter (*diametral,* which is what we measure with a caliper). Very few critical points actually need to be measured in order to successfully duplicate a design.

I have heard some turners brag about not having to use calipers, because they use only their eye. While I wish to be included among those who recommend that you develop your eye, I do not think there is a quicker way to successfully duplicate a turning than to use calipers in a *few* critical places, such as at the narrow parts of the turning. Consistent diameter is much more important in duplication than axial measurements, and calipers help you achieve this quickly and without guesswork.

Axial locations are best marked using a marking board, made from $^1/_4$-inch plywood (use the end grain of the top veneer). The marks are made off the drawing, and extended with a square. File the notches with a triangular file half way through the plywood thickness. To mark the work, hold the board against the rotating workpiece, and rest a pencil in each of the notches in succession (see photo at top of facing page).

Using a parting tool for initial layout is tedious, but for duplication there is no way more direct. This is because it is easy to cut straight-in with the tool and, working with a calipers, to locate a point, both axially and diametrally. Use this method sparingly, however. A parting tool is not practical to use in many situations, such as setting the diameter at the bottom of a cove, al-



A marking board, with a notch to accommodate a pencil at each critical point in the design, aids in maintaining consistency on duplicate parts.

though it is tempting The presence of the parting-tool cut makes turning the cove much harder, since the gouge breaks through, sometimes violently, at the bottom of each stroke. Do not use parting-tool cuts to "lay out" long curves; you are not building a boat hull!

Also, V-cuts cannot be located with a parting tool, since the tool is square on the end. Make V-cuts with the skew chisel, alternating equal cuts from left and right, and, hopefully, when you reach the bottom, you will still be at the correct axial location. The depth of V-cuts can be measured with calipers which have been ground thin at the contact points. It is risky to use calipers in a V-cut while the work is rotating.

It is harder to make two turnings alike than it is to make twenty alike. In the second case each turning needs to be similar only to the *average* of the other nineteen. Anyway, making two requires a different approach than making twenty. To make a pair of candlesticks for example, simply make one as you like, and copy it. In production, on the other hand, it is more efficient to make each unit match some pattern. Before a production run, several steps should be taken to clarify the variables. Drawing helps. Making a prototype helps. But eventually each of the turnings must be made to the pattern which you have memorized and is *in your head,* that is, your mind's eye.

How to visualize curves

Often it is useful to think of curves as parts of familiar geometric figures: circles, ellipses, parabolas, etc. These forms tend to make our designs somewhat rigid, however. Straight lines and true circles should be used with caution in turning design because they tend to look mechanical and artificial, not organic or graceful. There are exceptions to this, such as the ball finial, which has a simple elegance that overcomes its mechanical character. Of course cylinders and tapers have their place as well. Tapers underlie the forms of table legs and bedposts, but they usually need other details to balance them.

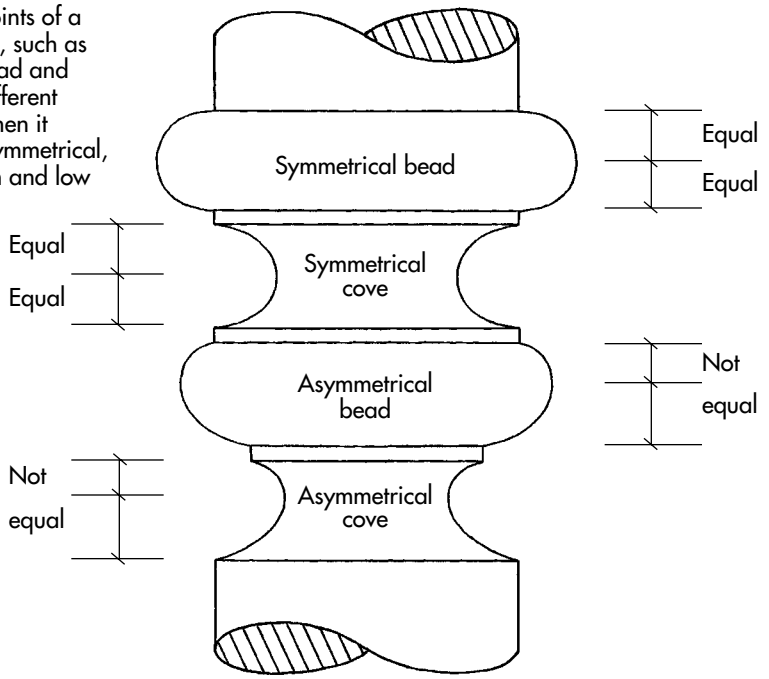
For these reasons, most turnings involve curves predominantly in their design, and attention to their shape is a big part of woodturning for furniture. The most important features that describe the shape of a curve are the *high* and *low points,* the *end angles,* and the *inflection points.*

The line of a cove has a low point, usually in the center, but not always (see drawing, below). If the end points of the line forming the cove are not the same diameter, the low point will be off-center, dividing the axial length of the cove into two unequal parts. The same can be done with a bead's high point to some extent.

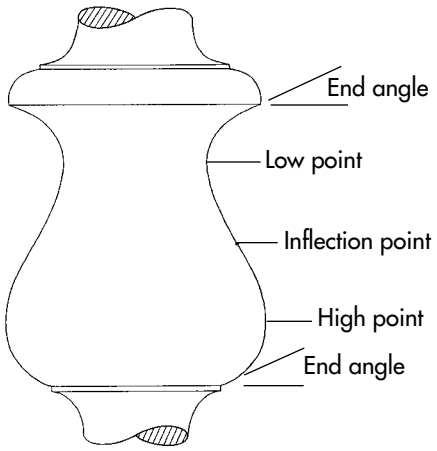
All curves begin and end somewhere, and usually this is at a shoulder or corner of some kind. A line that is tangent to the curve at the end point makes an angle with a line normal to the axis, called the end angle.

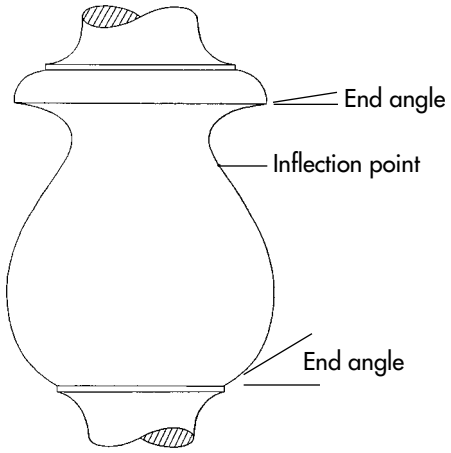
Simple curves such as the shapes of beads or coves continue their curvature in one direction only, but S-curves must reverse. The point at which the curve changes from convex to concave is called the inflection point. An S-curve has both a high

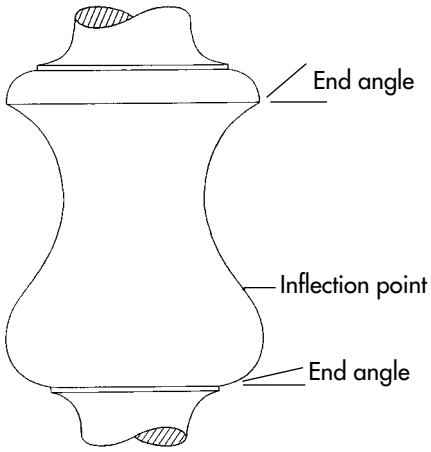
If the end points of a simple curve, such as the basic bead and cove, are different diameters, then it becomes asymmetrical, and the high and low points shift.



Variations in end angle and inflection point affect each other and the character of the curve.







and a low point, so its length is divided into three parts. At the same time, the inflection point divides the curve into two parts, which may or may not be equal. The proportions of these parts play a major role in defining the curve.

The drawings above show how variations in the location of the inflection point result in turnings that do not look alike, even though the end points are the same. These variations affect the locations of the high and low points as well as the end angles.

Successful duplication of curves is easy if attention is paid to the proportion of the length as divided by the locations of the high and low points and, perhaps more importantly, the inflection point.

Working in steps

When parts are made in quantity, the work proceeds in steps or stages. An average furniture piece goes on the lathe four or five times before it is done. Working in steps has many advantages. It allows for better momentum of work and fewer sequences to memorize. It allows for fewer different tools (chisels, calipers) to be up at any one time. And it drastically reduces the time spent in moving tool rests, steady rests, dust collectors, etc. It is also conducive to consistency of action, and therefore of the final shape of the work. Spring-loaded spur centers facilitate rapid loading and unloading of work without stopping the lathe. (Frank Pain describes in his book how he manages to accomplish this without springs. For a review of modern spring-loaded spur centers, see *American Woodturner,* June 1997, pages 42 and 44.)

Templates

I do not use templates, except in two situations: straight lines and balls. The use of a straight edge is obvious, but to make a ball (circle) template, use a "one-arm" circle cutter (also called a *trepanning cutter*) in a drill press. Clamp the work—$^1/_2$-inch birch plywood is ideal. The template is used not only to check progress while turning the ball, but later to press sandpaper against the ball to refine its shape.

How to make drawings

A simple method of achieving symmetry in drawings is to fold a sheet of paper vertically down the center, and then open it like a book. The fold becomes the center-line of the drawing. Now it is necessary to draw only one side of the turning. Use a soft pencil. When one side is done, fold the paper back again (your drawing on the inside), and use a stylus or some very smooth object to rub the pencil marks onto the other side of the drawing. Open the paper, darken the lines, and draw lines across at feature points.

The same method can be used to create bilateral symmetry, such as the "double baluster" pattern, when designs repeat in reverse. In this case you fold the paper twice to form a cross. Draw full size whenever possible; then the drawing can be folded inside out and used to mark the turning itself.

Sanding—less is more

Many good turnings have been ruined by improper sanding. Generally this means that the sharp corners have been rounded—the turning loses its "crisp" look and appears like something mass-produced and sanded on a brush machine. The way to preserve the sharp details in a turning is *not* to sand them. Only the broad areas and large features need to be sanded to remove any tool marks or lumpiness. The following suggestions should be helpful:

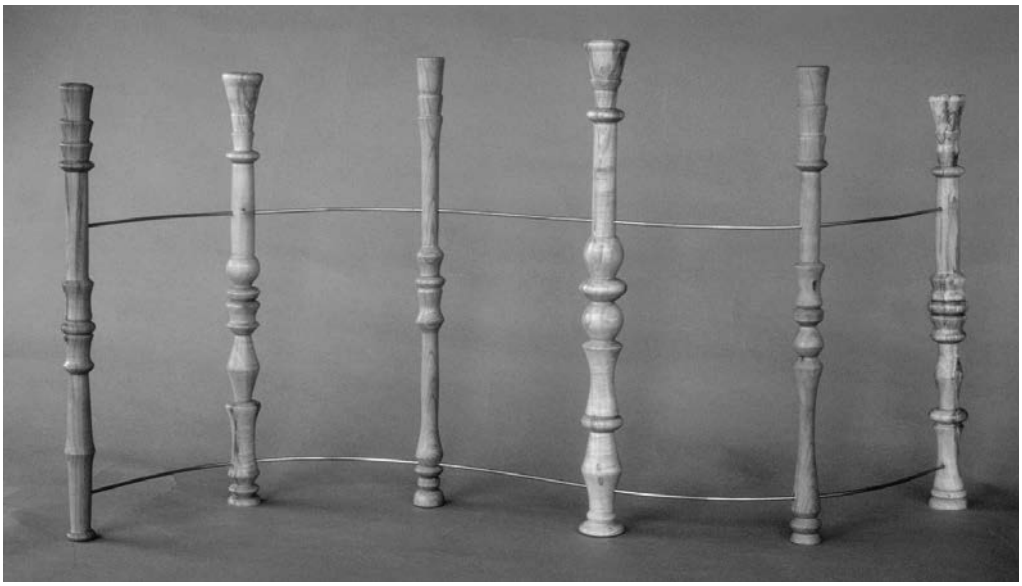
1. Do not attempt to sand inside corners, even with a square stick.
2. Reverse direction after each grit, and a few times at the end. You do not need a reversing motor for this; simply turn the workpiece end for end.
3. For straight parts, sanding belts, ripped open, work well.
4. For very large cylinders such as columns, floor sanding paper is excellent.
5. For smoothing the bottom of small coves, a slightly tapered dowel or "sanding stick" will press the paper evenly into the cove.

Jon Siegel, of Franklin, NH, is a lifelong turner who specializes in making furniture and architectural components. He also operates Big Tree Tools, Inc., which designs and markets wood lathe accessories.

CANDLESTICK IDEAS

Casting light on the design process

BILL STEPHENSON



Author's two candlestick ideas incorporate a variety of spindle turnings and a free-form metal-wire armature.

IN THE SUMMER OF 1996, THE OHIO Valley Woodturners Guild announced that their annual woodturning contest would be to turn a candle holder. Having been an originator of the annual contest, I certainly felt obligated to participate, but a *candlestick!* Never turned one in my life.

Designing begins with research, in this case several trips to the public library. I skipped the woodturning project books, preferring to consider "the candle holder" as a cultural object, maybe even an art form. In the art and design section of the library I found dozens of books to peruse — on lighting, silverware, pottery, brassware, religious articles, even candle holders. The very finest candle holders were illustrated in rare and/or expensive limited-edition books, which are generally kept out of circulation, to be used only in a special room. The staff even likes for you to wash your hands before using these books. Learning about this section of the library was worth the search.

Unable to check these resources out of the library or even to photocopy them, I was relegated to my rudimentary sketching skills to capture the design elements of interest. I learned that candle holders are of two basic types, those with a spike in the center that sticks into the candle and those with a hole in the center into which the candle is inserted. The spike type includes the earlier (and plainer, cruder) designs. There was speculation that the spike holder originated to hold a hunk of fat that was burned to cast light. Today this type of holder is used for very large candles several inches in diameter.

Since the development of dipped and then molded candles, candle holders with an insertion hole (referred to as a cup) have been far more common. Even this type of holder has some design features based in the earliest creations. The ring at the base of the cup was usually two to three times the diameter of the cup so as to catch any drips from the candles, which were commonly made from soft tallow that melts rapidly. Designs of these holders tended to emulate the tall, slender shape of the candle, raising the light as high as possible. Such tall designs called for a base of substantial diameter or weighted, for stability.

From books on antique candleholders, I learned that matched sets of holders were more desirable: pairs or even sets of six to twelve. Elaborate structures accommodated multiple candles for maximum illumination and decoration. Holders made of or ornamented with fine metals were highly valued.

Wooden candle holders were common, especially among the working classes, who would create their own holders from chunks of firewood. Designs also included wind screens, side screens, and even mirrors of shiny metal to protect the flame or direct the light.

With a stack of sketches, some newly gained knowledge, and a few photocopies of striking artifacts, it was time to begin developing my own design. Finding a quiet moment in an environment conducive to reflection, I began to sketch, and sketch again, and do another, and refine the last. I discovered that I really liked tall thin tapers, that I wanted to incorporate metal in the design, and that I favored multiple candlesticks. I did not want every stick to look the same, but I did want them to look part of the same set.

I was able to sketch out two basic designs, both using metal connecting rods. The turnings would give me a chance to play with a variety of shapes, while the metal rods would tie them together, visually as well as structurally.

I found in my wood supply several pieces of spalted ambrosia silver maple (*Acer saccharinum*), each 12 to 14 inches long, and about 2 inches square, as well as some longer pieces of cherry (*Prunus serotina*). I began sketching the turning details for this stock.

For the first candle holder, which would have four candlesticks, I focused on the use of the holder on the dining table, where food shapes came to mind: eggs, pears, etc. I decided to include the food shapes in the lower half of the holder (closer to the table food) and to design the top half with "lift" to bring the candle up for better lighting. In full-size drawings, I included a large bead to demark the center division between these two themes, and a candle cup at the top in the traditional up-side-down bell shape with a "drip catch" bead at the base of the cup. The candles for this holder would be 7 inches, putting the light appropriately just above eye level for people seated at the table.

The other, taller candle holder would be intended for use more as a centerpiece on a hall table or perhaps a long dining table. The sticks would be slender to accentuate the height. With the holders tall, the candles could be short: say, 4 inches. Again, a bead delineated the center of height for each stick and the cup followed the traditional bell shape, though more slender for consistency with the overall diameter of the stick.

The space between center and the top needed some attention. I worked up several alternative shapes: cones-on-cones, base-to-base, and point to point, several shapes of spools, and a number of rings. With multiple spindles, I could try some of everything.

With full-size sketches hanging on the studio wall, I laid out a design on each blank and began actually turning. I kept each completed piece in view, along with the original design sketch, to ensure continuity as the project evolved.

Spindles finished, I arranged them to complement one another upright on a large piece of paper. I marked the position of each component and sketched some connecting shapes—straight lines and tight S-curves for the four-candle holder and a longer, gentler S-curve (formed around a five-gallon bucket) for the six-candle holder. I cut and shaped the wire, fine-tuning and matching the curves.

With all the parts ready, I drilled the holes—stop holes for the four-candle holder; through holes for the six-candle one. I applied gap-filling cyanoacrylate glue to the stop holes and inserted the wire to assemble the four-candle holder. I threaded the gentle S-curved wire through the holes in the longer spindles and glued it in place for the six-candle holder. When the glue was dry, I mounted the candles and turned on the lights.

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

BOTTLE BOX

Threaded and liquid-tight

DARRELL RHUDY

SO YOU WANT TO MAKE A WOODEN box that will hold liquids and that is threaded without buying a special threader. You can start as I do by raiding the cache of empty bottles in the pantry, or go to the grocery and buy a bottle of olives or such for immediate use or transfer of the contents.

Choose a bottle with straight sides and a lid near the same diameter as the bottle. Cut a blank of wood at least 3 inches longer and $^3/_4$ inch wider than the bottle to allow for waste and mounting to the faceplate or chuck. Mark diagonals to find the center of both ends and score with an awl for spur center and live center.

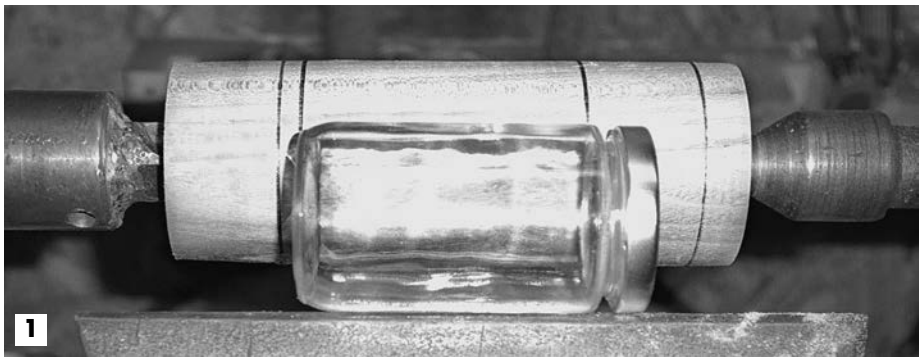
Turn the blank between centers to a uniform cylinder. Mark the cylinder for the top, bottom, and border between base and cap, allowing at least $^1/_4$ inch of wood above the metal lid and below the bottom of the jar, plus enough waste for the faceplate or chuck (**Photo 1**). Part the cylinder at the border between base and cap. Make sure the ends are flat to receive a faceplate or chuck.

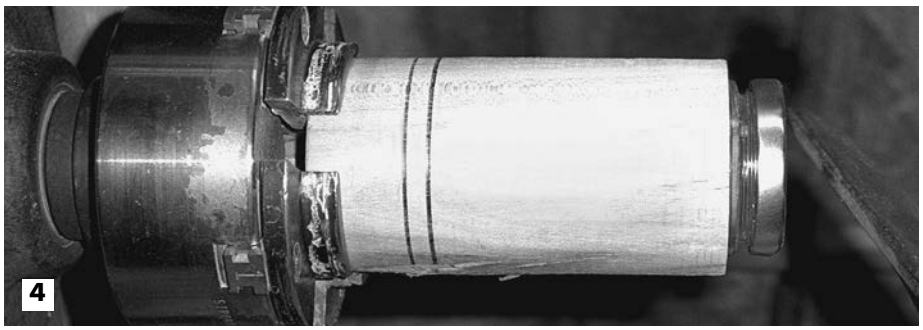
Mount the base blank and turn the interior (**Photo 2**).

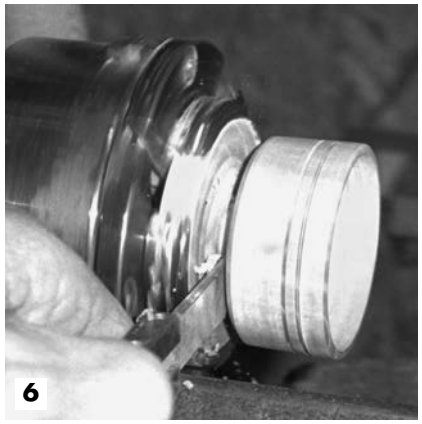
Keep checking with caliper and the bottle until it slips snugly into the base (**Photo 3**). It doesn't have to be tight but shouldn't rattle around.

Turn the depth so the desired amount of bottle and thread remains above the base (**Photo 4**). This amount will fit inside the cap when the cap is turned.

Finish-turn the exterior to the desired thickness and decoration. Sand the base to your satisfaction. I usually begin with 80 grit and work up to 240 or 320 grit.







Apply your choice of finish, with sealer or filler if you wish. I prefer three or four coats of Deft with steel wooling after each coat dries. While I prefer to spray the Deft, you can apply it with a soft cloth while turning at the lowest speed, so it isn't spun off immediately (**Photo 5**). If you place a 150-watt bulb within a foot or so of the turning, each coat of Deft will dry in about five minutes.

Mount the cap blank and turn the interior to receive the lid with a snug fit. Make sure that the bottle with cap screwed on fits fully within cap and base so there will be no appreciable gap between the cap and base. Finish-turn, decorate, sand, and finish the exterior of the cap) except the top where it is attached). Part off the cap (**Photo 6**). Apply thick cyanoacrylate glue (super glue) to the inside of the cap and press the lid in and let it dry.

Screw the cap fully on to the bottle. Apply glue to the inside wall of the base and slide the bottle in until the cap and base meet. Quickly rotate the cap and bottle clockwise until the grain of the cap and base align perfectly. Let the glue dry with the parts in that position.

Mount the entire unit again and finish-turn the top of the cap. Apply finish, sign the bottom, and pour in the contents!

Darrell Rhudy is a retired executive who turns and teaches turning in Raleigh, NC, and the North Carolina mountains.

COVERED CONTAINERS OF OLD

Insights and surprises of Old Sturbridge Village

ALAN LACER

IN MAKING AND SELLING LIDDED CONtainers over the years, I have noticed the fascination that such work holds for turners and the public in general. Whether it's the mystery of the concealed interior or the satisfying fit of the lid, something entices one to open a container and look inside.

On first glance the lidded container is nothing more than a practical means to organize, to keep contents fresh, to simplify transporting, or to keep precious contents safe from other humans or pests. On closer inspection these turned forms are often embellished and decorated beyond the obvious needs, and the lidded containers of Old Sturbridge Village, the living museum in southern Massachusetts, are no exception.

In looking through this premier collection with curator Frank White (see our first articles in this series in *AW,* June 1997), I was surprised by several realizations. First, the fit, sometimes after a hundred years or more, is still good on the majority of pieces. Next, variations in methods of joining the top to a base are fascinatingly varied—from several methods of locking lids and threaded caps to more common and not-so-common shouldered arrangements. And finally, the large scale of several of the pieces amazed me. Typically I have kept my own lidded containers to under 4 inches in diameter to ensure a consistent fit over time. In the Old Sturbridge Village collection at least one container over 12 inches in diameter still retains a close fit.

A grooved lid

Perhaps my favorite of the lot was the large burl container pictured below. Both the scale and lines of this piece are compelling. The U-shaped channel in the lid that embraces the base is also intriguing. Such a feature, which provides a tighter seal than a simple shoulder method, points to the need to keep contents fresher or to provide a stronger barrier against insects or rodents. The fit is still surprisingly good, probably in large part due to the fact that it is made of burl.

Locked for lunch

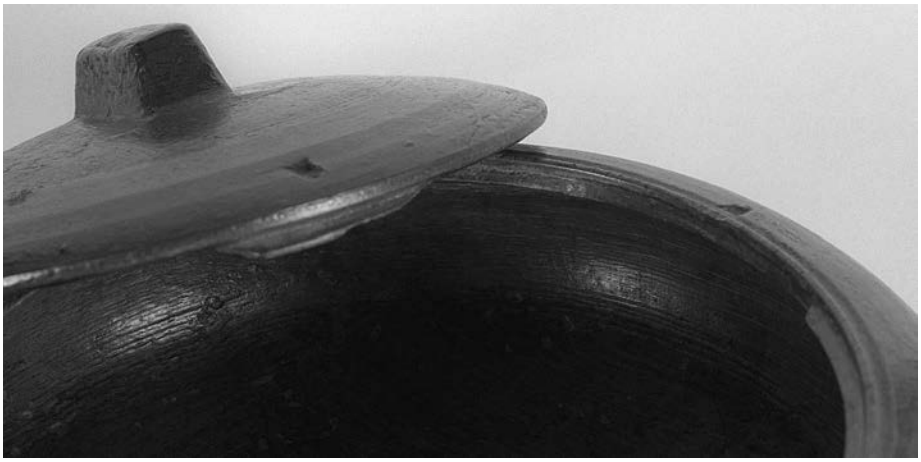
Another surprise was the various methods of locking lids. Although I know many of today's turners who make lidded boxes discuss the possibilities for locking lids, I have yet to see one executed. Two of the pieces in the OSV collection feature locking

The lid of this burl container, 14″ dia by 12″ high, is grooved to straddle the base, for a more secure fit.

lids. The first (photo, right) is a flat red-painted container with a rectangular pull. This is the only example of a lidded container we found not done in end-grain.

If you look closely at the locking method, you can see why a face-grain approach might actually be an advantage. First, the projecting lip is aligned with the grain, therefore far stronger than if shaped from a thin piece of end grain. Second, the major problem with face-grain containers is that they tend to become oval fairly rapidly—either the lid fits in only one or two positions or considerable free play must be incorporated into the fit to anticipate this movement. The locking method in this container is not compromised by the piece becoming oval; it may even help to register the lid to the base. However, for ease of use the maker of this piece placed a small notch on the lid and base to quickly align the two parts. The detail photo shows the method of cutting away for both the locking lip and the notch in the base.

It is fairly certain that this piece is not of American origin, or at least it was inspired by a long Scandinavian tradition of such containers. In the photo at right you can see 200- to 300-year-old-examples of containers from a museum in Skara, Sweden. These represent a centuries-old method of producing locking and nested containers. Sometimes these were used as lunch pails with several nested containers to keep the contents separate and possibly warm. The combination of dead air spaces, a reasonably tight seal, and the use of wood, which itself is a thermal insulator, makes this a very practical solution. The examples from Sweden often have the same rectangular pull as the OSV example (a practical feature for locking and unlocking the lid easily) and virtually the identical method for locking the lid. One difference is that some of the Swedish



Del Stubbs

Both the top and base of the red-painted lidded container (photo top and detail of the locking mechanism, center), $8\frac{1}{2}$" dia. by $3\frac{3}{4}$" high, appear to have been turned between centers, followed by carving to remove nubs or, in case of lid, to shape the rectangular pull. In the photo above, a four-part lunch box from Sweden, turned approximately 200 to 300 years ago, incorporate a similar locking mechanism. The smaller container nests inside the larger.

Mazer birch container with locking lid, 5 1/4" dia. by 4 1/2" high. The lid finial may be a replacement of the original.

examples use a double-notch system rather than a single notch.

Another locking technique

Another piece in the OSV collection that is probably not American (pictured above) is also very intriguing. First, the method of attaching and locking the lid is somewhat easier to fashion than that of the preceding piece. It entails cutting a notch in the lid and turning away the top of the base, leaving only two vertical posts. On a reciprocating lathe this would be a rather straightforward task.

There appears to be a piece missing from this container. Apparently, in order to lock the lid, a small flat lever was screwed to the lid and the lever slid between the top of the lid and under the notch of one of the vertical posts. Evidently this container comes from a Scandinavian (probably Norwegian) tradition as well. The wood appears to be mazer birch, found in northern Europe. This is nevertheless a unique piece in that much of the other Norwegian work—known as *tina*—were done either in stave or bent wood construction or often in an oval shape for smaller containers. The beads on the outside of this container appear to simulate the half-round wooden bands used on stave construction work of that tradition.

Threaded needle cases

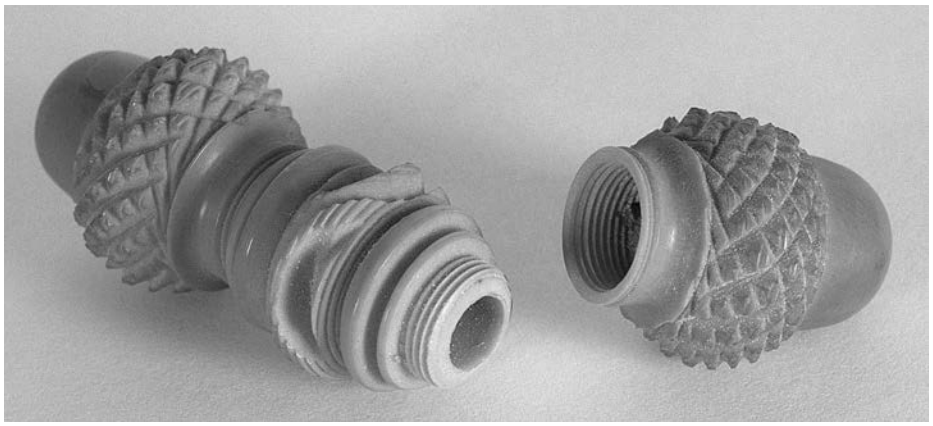
A formidable group within the OSV collection is the numerous needle and thimble cases (one of which is pictured at the top of the facing page). Virtually all of these use threaded lids and are made from tagua nuts. One might assume these were done on an ornamental lathe, given the extensive detailing. But looked at closely, the designs lack precision in layout and execution; the variations in pattern, as well, suggest that they were hand carved. Furthermore, these little cases were common in nineteenth-century England—produced in large quantities, which would have been difficult or at least costly on ornamental lathes. For historical perspective, one record from the turn of the last century indicates that 1,200 tons of tagua nuts were imported into England, primarily for turned objects and buttons.

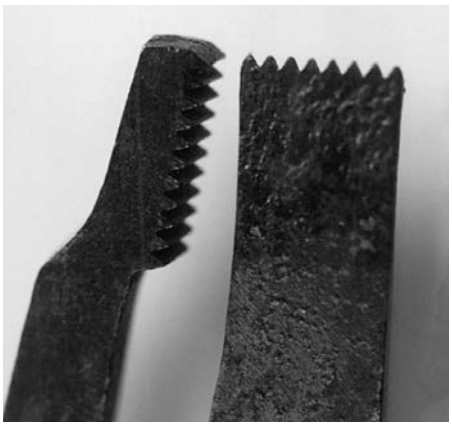
The needle case shown here is representative of the collection and delightfully detailed. It is made from three blocks of tagua nut. Given the normal size of such nuts this would be necessary to obtain the length of a needle case. The color of the tagua nut after a hundred or more years is wonderful, having mellowed into a warm golden brown that has great character. The pieces in the collection made from ivory seem too white, even plastic-looking, when compared to the tagua nut.

The case can be opened from either end, as the two end caps are threaded to the center section. As with all the threaded cases in the collection, the thread count is approximately twenty-six threads to the inch. Although machine threading of metals was available during the nineteenth century, it is virtually certain that the threads were hand-chased on a wood lathe (see photo above right). As an experiment I tried hand-threading tagua nut and found it to be an excellent material—far easier to work than most of the woods I have tried.

Peaseware

The final piece I want to discuss is a smaller Peaseware item (photo, facing page and *AW,* June 1997, page 10). The term Peaseware refers to the turned woodenware that was manufactured by the Pease and Brown families in Concord, Ohio, on a full-time basis from about 1850 until 1906, and then sporadically until 1940. (For an excellent in-depth discussion of Peaseware products, see the article written by AAW member Gene Kangas and his wife Linda Kangas in *Maine Antique Digest,* December 1996).





Alan Lacer

Common in nineteenth-century England, this threaded three-piece tagua nut needle case is 3″ long by 1″ dia. The detailing, as well as the threads (see the traditional thread chasers, right), appears to be hand-cut.

This red-painted sugar bowl is typical of items made in the Cascade Valley of Ohio in the latter half of the nineteenth century. Although no label remains that would identify it as an authentic piece of Peaseware, the double decorative lines on the body, the detailing between the finial and edge of the lid, the method of joining the lid to the base, the form, and the grain orientation all are strong indicators of Peaseware. The one striking feature that is not normal to Peaseware is the red paint, which was most likely added by the owner or a dealer; painted items seem to move in and out of fashion on a fairly regular basis.

The work is done in end-grain, with a simple shouldered tenon on the base fitted into a round mortise in the lid. I use this same approach for the majority of my own boxes, as do many other turners, including Richard Raffan and Ray Key. This method is relatively straightforward to execute and allows for some minor changes in the shape of the lid or base without ruining the fit. Many of the Peaseware covers in this collection still fit quite tightly, but only in one orientation, as the pieces have generally become quite oval.

What to learn

The lidded boxes and containers at OSV offer lessons in sound construction as well as ideas for contemporary exploration. Eventually everything turned from wood, even end grain, unless centered on the pith of an evenly ringed block of wood, will become oval. This is so for furniture and stair spindles, as well. There may be a few exceptions in woods that have nearly identical rates of radial and tangential shrinkage and expansion. However, lidded containers are still best made from end-grain material, unless you prefer a loose fitting lid or if that is necessitated by a locking arrangement. The lids on some of the larger containers not made from burl evidence the most problems of splitting and excessive movement. because the movement is greater by degree of size. Probably the larger the container the more problematic will be the fit over time; for retaining a fine fit over a long period, the general rule of keeping the diameter under 4 inches is still sound advice. If I were to do a larger covered container, I would use burl, as dimensional movement is generally more uniform in burl.

Finally, there is plenty left to explore regarding locking lids. Whether contemporary turners imitate those methods found in this collection or use it as the basis for further development, rich possibilities are waiting to be explored.

This Peaseware lidded container, 5½″ dia. by 5½″ high, features a tenon on the base that fits the round mortise in the lid, a system common to boxes turned today.

Alan Lacer, of Shoreview, MN, is an internationally recognized turner and teacher and a contributing editor of AW. *Special thanks to Frank White, Gene and Linda Kangas, Del Stubbs, Dick Enstad, and Alan Batty for their help in preparing this article. Photos: Thomas Neill and Conservation Laboratory, Old Sturbridge Village, except where noted.*

DECORATING BOWLS WITH SCRAP

"Woodford jig" helps assemble small cutoffs

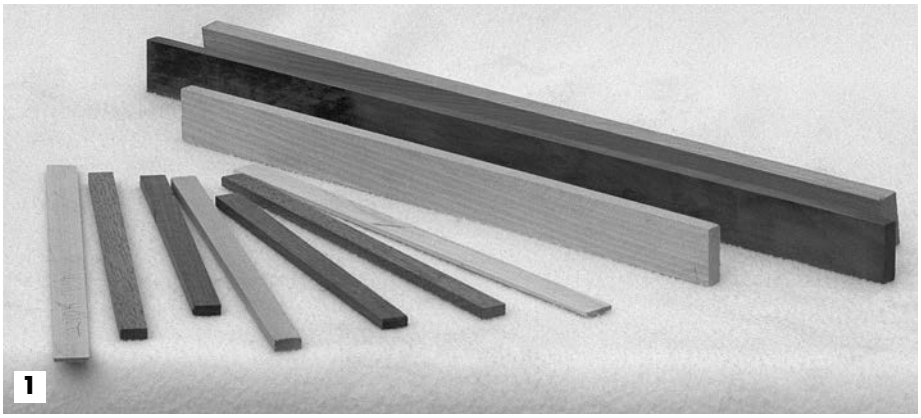
WILLIS M. HUNT

A handsome decorative band is easy to incorporate in a bowl blank—assembling small scrap into a ring using the "Woodford jig." Alternatively, an entire segmented bowl could be constructed by stacking such rings.

IN CUTTING FOR SEGMENTED BOWL ASsemblies, I generate a lot of scrap. Knowing my work, woodworker friends also donate small pieces they can't use. I had been trying to think of an effective but easy way to use these materials to enhance my work. Combining multiple assemblies of different colored species to show end grain at various points around the bowl rim appealed. But an easy way to get this done escaped me. During an apres-ski session with fellow turner Warren Woodford, he came up with a jig/fixture design concept to do this.

The photo above shows the results. The bowl bases are solid for clarity in the photo, but the results are equally good using built-up segmented rings. Four inserted end-grain assemblies have been used here but the concept will work with any number. The Woodford Jig makes it all quick and easy.

Photo 1 shows the kind of scrap highly usable for this process. The thin sticks should be at least 11 to 12 inches long and $^1/_8$ to $^3/_{16}$ inch thick with paired species (each with the same thickness) on each side of the center one. The heavier pieces to the



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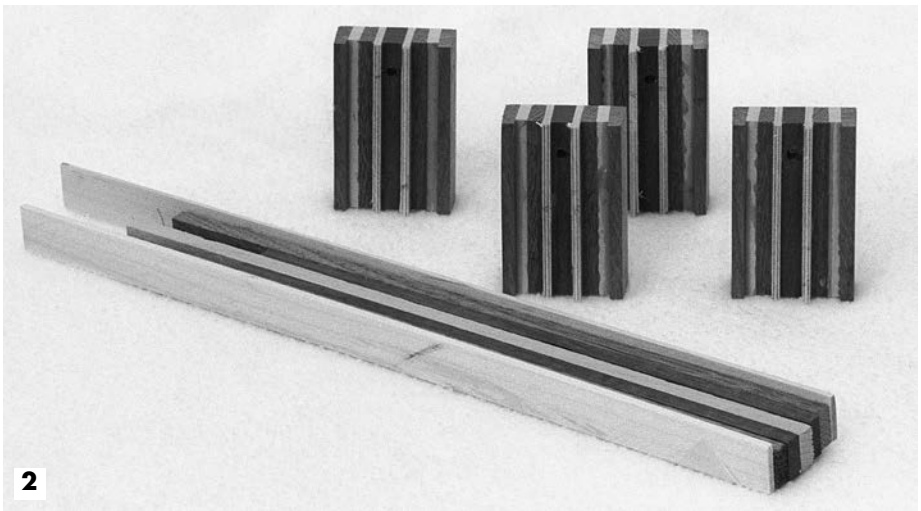

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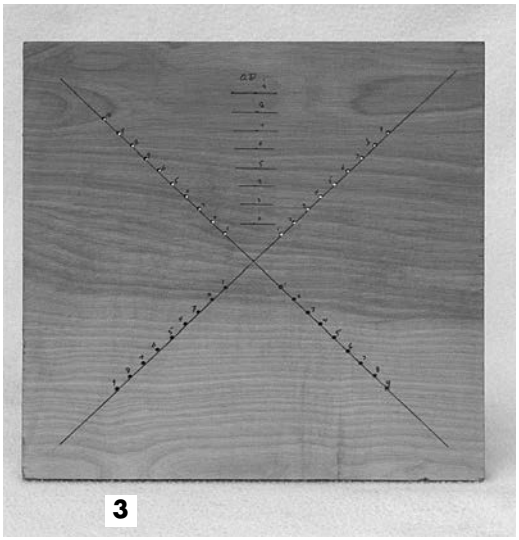
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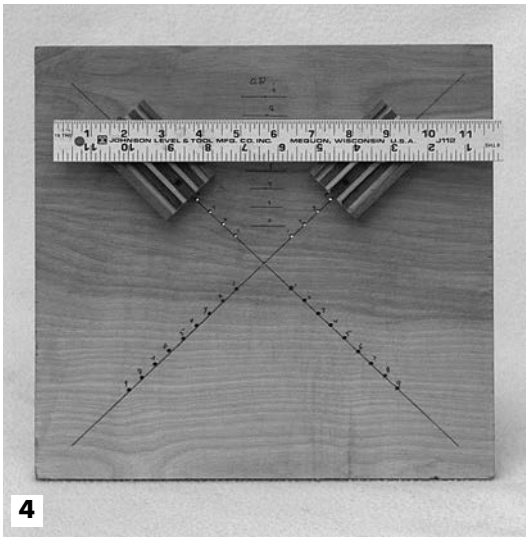
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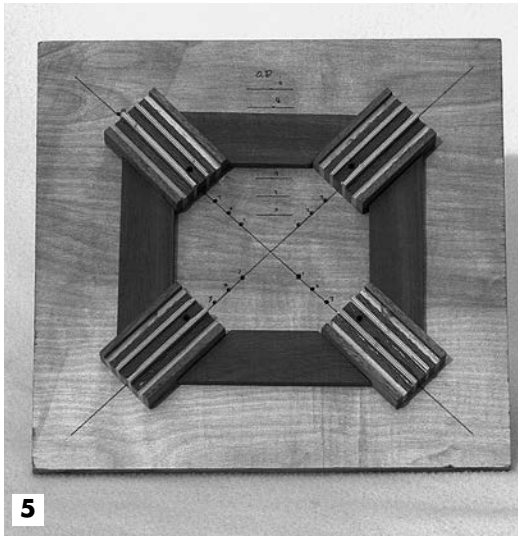
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right rear of the photo are filler gussets that should be $1^1/_2$ to 2 inches wide and $^1/_4$ to $^1/_2$ inch thick. As will be seen, none of these dimensions is critical.

The initial step is to glue the thin strips together as shown in **Photo 2.** The indicated odd number of strips with equal pairs to the side of the center piece works best. Cut the assembly into lengths of about $2^1/_2$ inches. Drill a hole big enough to allow passage of a 4d or 6d finishing nail in the center strip $^1/_4$ to $^1/_2$ inch from one end of each assembly.

Photo 3 shows the bare jig. This one is a 12-inch-square piece of $^3/_4$-inch Baltic birch plywood. Draw corner-to-corner lines at 90 degrees and drill holes for the 4d or 6d nails on each of these lines at $^1/_2$-inch intervals from the center intersection. These holes indicate the finished bowl's outside diameters and are so labeled on each of the four lines. Finally, draw horizontal lines at $^1/_2$-inch intervals from the intersection of the lines towards the top of the jig. Label these also with the diameter each represents.

Now we are ready to start. Here it is assumed that the finished diameter of the bowl will be 7 inches. Insert a finishing nail in hole position #5 in each of the upper lines. Fit one of the cut strip assemblies onto each of these nails, as shown in Photo 4. Adjust them so that the center strip in each lies directly above the line below. Place a ruler horizontally across the assemblies so that it lines up at approximately $7^1/_2$ inches between the 7- and 8-inch horizontal lines on the jig. As shown in **Photo 4,** the distance between the two inside edges of the thin strip pieces is 5 inches. This is the long-side cutting length at 45 degrees for each of four gusset pieces. (Note that the 5-inch length will not be common for all designs of 7-inch diameter bowls. This dimension will vary with the thickness of the strip assemblies used in each case.)

With the four gussets in hand, **Photo 5** shows the assembly ready for gluing (wax paper to protect the jig has been omitted for clarity). All four thin strip assemblies are positioned on nails at the above 5-inch line points on the jig. This assures that the holes will not interfere with cutting to the 7-inch outside diameter of the bowl. As shown, the outer allowance of approximately 2 inches from the hole also is ample to accommodate this finished diameter. Similarly, the approximate 2-inch width of the gussets is plenty, as the inner edges fall inside the positions of the #5 holes.

Assembly gluing is easy—just rub and squeeze. With the center thin strips directly on the guide lines, the gussets fit nicely between (assuming the sides of the strip assemblies are parallel and the 45-degree cuts are accurate).

Applying the ring to the base structure is simple. To receive the ring, true the top of the base flat and square across the lathe axis. Sand the underside of the ring flat. This will be mainly glue squeeze-out, since the ring was put together on the Baltic birch jig platter. Glue the ring to the base, centered as closely as possible. If it is too far off, a hole (or holes) in the strip assemblies may intersect the 7-inch design diameter and the assemblies may be unevenly spaced around the rim.

When the glue has cured well, return the workpiece to the lathe, trim off the butt ends of the strip assemblies, and retrue the top flat and square. Due to the high likelihood of loose chunks flying off the workpiece, this part of the process demands a full face shield. Finally, finish the rim with one or more single species rings. As shown in the finished pieces on the facing page, I have found that very thin ($^1/_8$-inch maximum) contrasting rings above and below the main ring works well to accentuate the different colors and textures in the main ring.

All this may sound complicated, but once your first accent ring has been constructed, you have the jig for future use and the process is easy. If you want to work with more or less than four pieces, only the jig's line layout and gusset cutting angles need be changed to conform.

Will Hunt, of Lexington, MA, wrote on eight-piece ring turnings in the March and June 1996 issues of this journal.

SANDING-DISK HOLDERS

Make your own from nuts and bolts

KING HEIPLE

I'M CONVINCED THAT NO WOODworker ever owned too many screwdrivers or measuring tapes. Now as a woodturner I would add power sanding-disk holders to that company of too-many-is-not-enough tools. In similar fashion they tend to hide all over the shop and usually have the wrong size grit on for the job at hand.

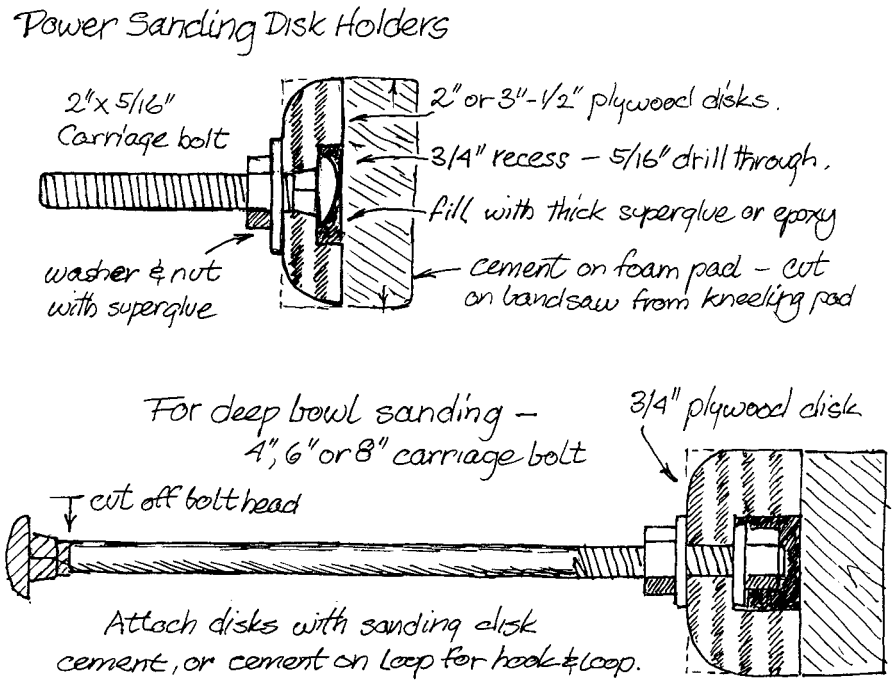
In several hours you can make yourself a dozen professional quality disk holders with the extra advantage of making several with 4-, 6-, or 8-inch shanks to facilitate sanding the bottom of deep vessels.

The figures above right says most of it, but some description may be helpful. First I would use $^5/_{16}$ x 2-inch carriage screws for most routine holders; $^1/_4$-inch is a bit too weak and may bend on edge pressure while sanding. You should have a $^5/_{16}$-inch washer and nut for each holder.

Now is the time to decide if you want a couple of long-shanked ones for deep bowls. Buy appropriate length carriage screws. If the long ones you can find are threaded for only an inch or so, you will need two nuts and two washers for each.

Cut 2- and 3-inch disks from $^1/_2$-inch plywood. Maintain the center mark as you next want to drill a centered $^3/_4$-inch recess halfway through with a Forstner or similar bit and then a $^5/_{16}$-inch hole completely through. For a long-shanked holder $^3/_4$-inch plywood may be necessary for a deeper recess to hold a washer and nut on the inside of the disk.

Pound your carriage screw in flush temporarily then tap it loose and put a few drops of gap filling superglue under it and tap back down. Don't splash superglue in your eyes or on your glasses! Turn over and add a washer and nut on the other side and tighten firmly. A few drops of superglue under the washer and nut help prevent loosening. Now fill the recess around the carriage screw head with either extra-thick superglue or quick-set epoxy.



When everything is hard, mount your new holder in a Jacobs chuck in the headstock of your lathe. Make your disk truly round with another coarse sanding disk, round off the back corner, and smooth the face.

Kneeling pads, found in most hardware stores or housewares departments, have about the right density for making pads. The new ones come with a sealed plastic surface on both sides which is great for cementing them to the wood and to sanding disks or hook-and-loop material. One will provide all the disk pads you need. Don't try to cut the disks out with a knife or scissors; mark them and bandsaw them out. It does a beautiful job. Cement them onto your holders. Again, superglue works great.

You can use sanding-disk cement to put appropriate paper or sanding cloth directly to these or you can easily adapt to hook-and-loop by applying a hook layer to the pad. Hook and loop is available in 2-inch width by the foot from long rolls in most craft supply stores. Don't buy it in bubble packs; you pay triple!

Finally, you can restore your worn-out loop disks by giving them one or two coats of sanding-disk cement and cementing on new surfaces of sanding cloth. sanding-disk cement seems to work much better for this than spray adhesives; apparently, it's much more heat resistant.

You can also put a soft pad on a worn-out snap-lock sanding disk so that you have an option for using this softer system on a snap-lock holder.

King Heiple is a retired orthopedic surgeon and avocational turner from Pepper Pike, OH. Drawing by the author.

Inexpensive Air Filtration

ROBERT ROSAND

AN AIR FILTRATION SYSTEM CAN COST upwards of $700-800. I made one that cost me about $115 and some scrap plywood, and that included a 100-foot roll of air filtration paper (about $75-80).

The system is basically a plywood box that encloses a squirrel-cage furnace fan and motor. Two furnace filters, one on either side, provide support for the filter paper (their purpose is not to filter air), and some plywood louvers direct the flow of outgoing air. The louvers are not necessary, but provide some additional cooling on hot summer days. (See the photo and drawings.)

I have included the dimensions of my unit, but yours ought to vary according to the size blower unit you use. Blower speed, and thus air volume can be modified by changing pulley size. The unit is assembled with drywall screws and construction adhesive, but I left one side fastened with screws only to allow access to the blower motor.

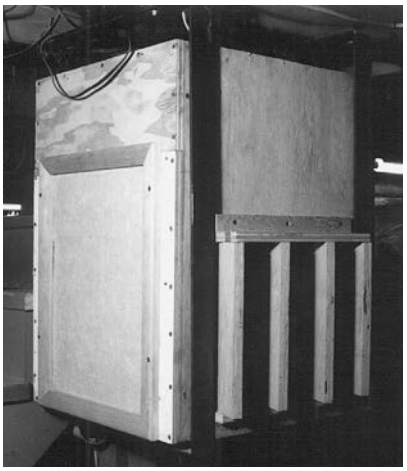
The heart of this system is the "DOP-20" air filtration paper I used. Unfortunately, my source for the "DOP-20" is no longer in business. Though I have found numerous references to the product on the internet, I have yet to find a supplier. Slight modifications in the air filtration unit will allow you to use "Hi Tech" washable filters such as the ones I have found through Allergy Control Products, Inc. (800/422-3878). Their JDS Air-Tech 2000 is a 12x20-inch filter that costs about $74. They'll also make custom sizes. They specify 80 percent efficiency down to 2 microns for this filter.

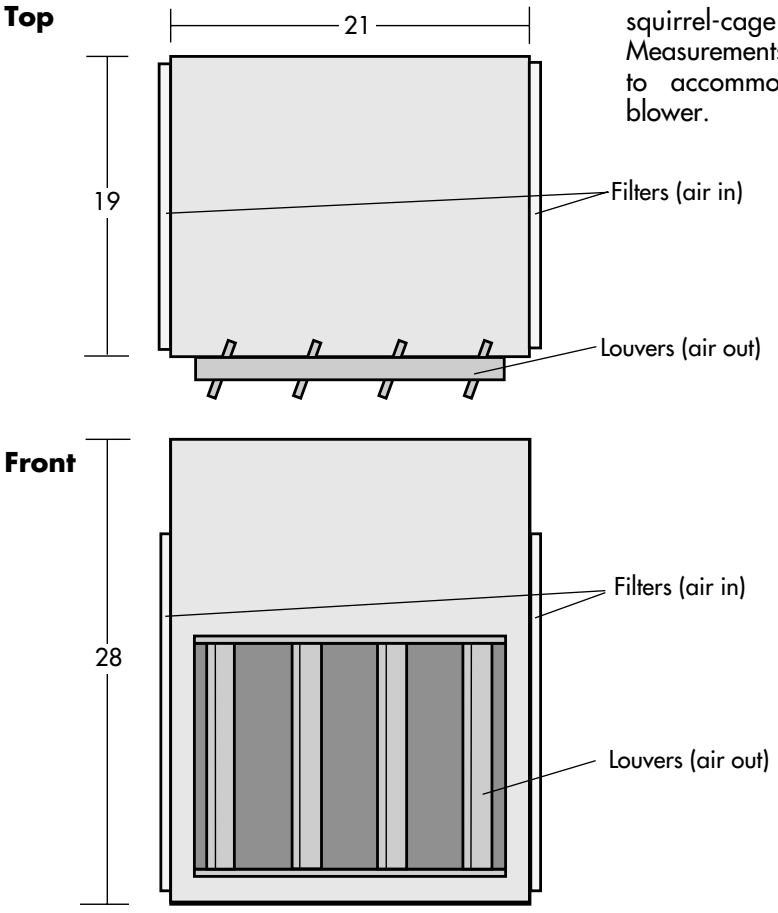
Another alternative involves modifying the air filtration unit to allow it to accept two-stage filters available through Craft Supplies, Highland Hardware, Packard and Woodworkers Supply, the major change being one intake for air rather than two. The filters in Woodworkers supply runs about $40 (no efficiency rating given), while the filters available through Highland Hardware and Craft Supplies run around $95 and $135 respectively. These filters claim an efficiency of 80 percent with 1 micron particles.

Robert Rosand, a professional turner in Bloomsburg, PA, is a frequent contributor to this journal.

Not rocket science!

Author's air-filtration unit is made of plywood and employs a squirrel-cage blower. Measurements will vary to accommodate the blower.





DESIGN AND NARRATIVE

Sing in me, Muse, and through me tell the story

BETTY SCARPINO

"DESIGN AND NARRATIVE," THE exhibition on display this last summer in the new wood studio at Arrowmont School of Arts and Crafts in Gatlinburg, TN, is the outgrowth of a unique class taught by Steve Loar in 1996 and partially funded by the Windgate Foundation. Fourteen students, including myself, took the class as an opportunity to learn, think about, and apply principles of design to our turning. This exhibition, which features creations by each member of the class, shows what can be accomplished with formal training in how to design a piece using a narrative as inspiration. We brought to the class varied interests and experiences and took away new insights into our own work.

Eleven of us considered ourselves to be woodturners, either part-time or full-time: Joren Bass, Nancy Carll, Rodger Jacobs, Joe Mamone, Pat Matranga, Paula Nicks, Rollin Patrick, Max Posey, Richard Preston, and Trent Watts. Of the three others: Jay Harris is a potter, and Scott Dewaard and Thomas Waters make furniture. I mention the names not only because they deserve recognition, but also because most people in the class are not well-known, full time woodturners. Anyone interested in pursuing woodturning beyond technique would be a candidate for such a class.

Noteworthy of this exhibition is the idea of taking risks. Sandra Blain, director of Arrowmont, took a chance finding space in an already busy schedule for a design class that might not be of enough interest to woodturners, instead of a hands-on turning class that would have been a sure draw. In addition, she approved the show, not knowing what would find its way into that exhibition

"Eagle When She Flies"

"Eagle When She Flies" is Pat Matranga's plate and stand, created from Dolly Parton's song of the same title. The lyrics that Pat focused on for her finished piece, "she's a sparrow when she's broken, but she's an eagle when she flies," deal with the qualities of human strength and weakness. She inlayed the image of an eagle's head, incorporating the figure of the wood and turned beads to portray flight. Pat was challenged to depict brokenness and settled on a broken star placed over a knot in the wood, allowing that breaks occur at the weakest point.

Pat turned the plate first, a familiar and still enjoyable activity for her. For several years now, she has been making her living selling functional wood items through galleries here and abroad. Taking time out early in her career to think about design apart from production allowed her to slow the pace and be more playful with her work. This design class has opened the possibilities for the kind of changes that she hopes will make her work special.

A favorite quote of hers from David Pye's book, *The Maker's Eye*, speaks to her relation to her work: "In design, very small differences make all the difference. The difference between the thing that sings and the thing that is forever silent is often very slight indeed. Why one should feel impelled to go on trying to make something which sings I really do not know, but that apparently is the fate of artists in however small a field. Perhaps in the end we do it in the hope that in time to come someone's eye will light when they see a thing we have made and they too will feel the same impulse. Perhaps all good art has been addressed to a generation still unborn."

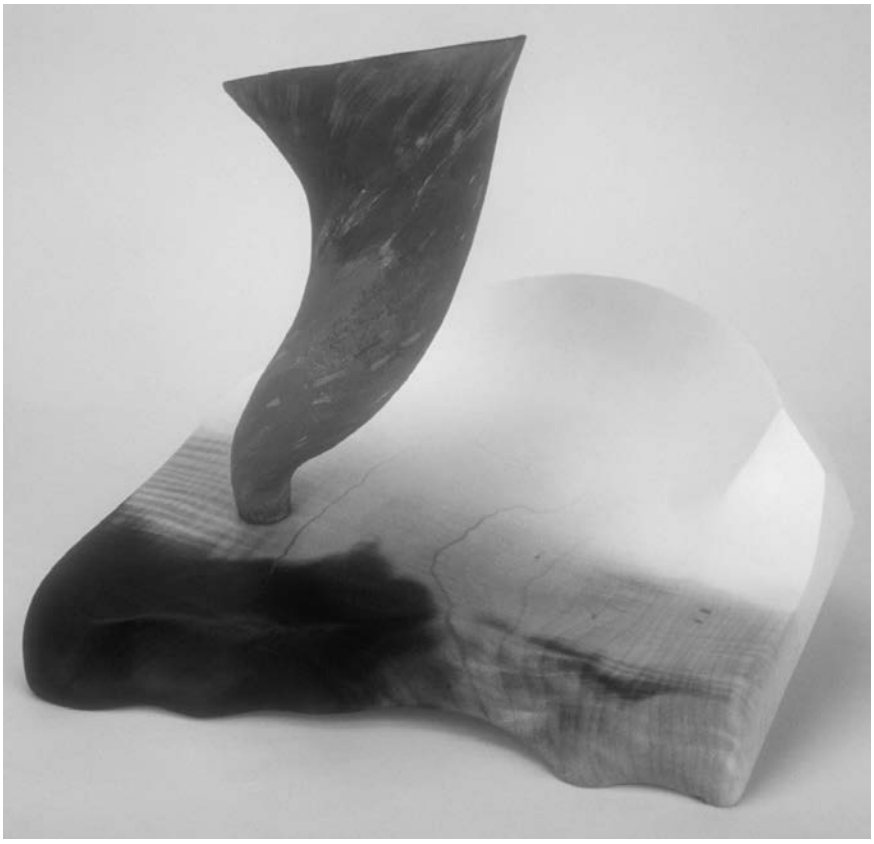
Photos: Papworth Photographic

space. Steve Loar stepped away from an academic setting to work directly within the field of woodturning. Over the year following the class, he corresponded with those needing further guidance to complete their piece. He encouraged us, despite his reservations that a show such as this could be pulled together, especially with the time and distance involved. And fourteen of us opened up to learning a new way of approaching our work, harnessing the power of narrative to inform design.

Our lives are full of stories. Books, films, television, music, and art reflect in words and images how we live our lives. We relate to these narratives with emotion, sometimes dancing to a lively song, or worse yet, singing in the shower, sometimes crying during movies such as "Old Yeller" or "Gone With the Wind." The power of stories to teach us, inspire us, console us, and remind us is present in many of today's popular songs. In this class we would tap into the stories embedded in those songs for design ideas in order to create a sculpture that, in turn, would tell a story or evoke an emotion.

One of the key elements that made our week at Arrowmont a success was the high level of interaction we established with each other. Instead of letting the differences of our varied backgrounds separate us, we shared personal experiences in a way that helped classmates understand a variety of options for solving design problems. In the small groups that formed throughout the week, we bounced ideas off each other without fear of rejection or disapproval. Immediate feedback in a setting like this creates a learning atmosphere charged with enthusiasm.

Steve Loar had the class participate in a number of formal design exercises, building on concepts learned the summer before in a two-



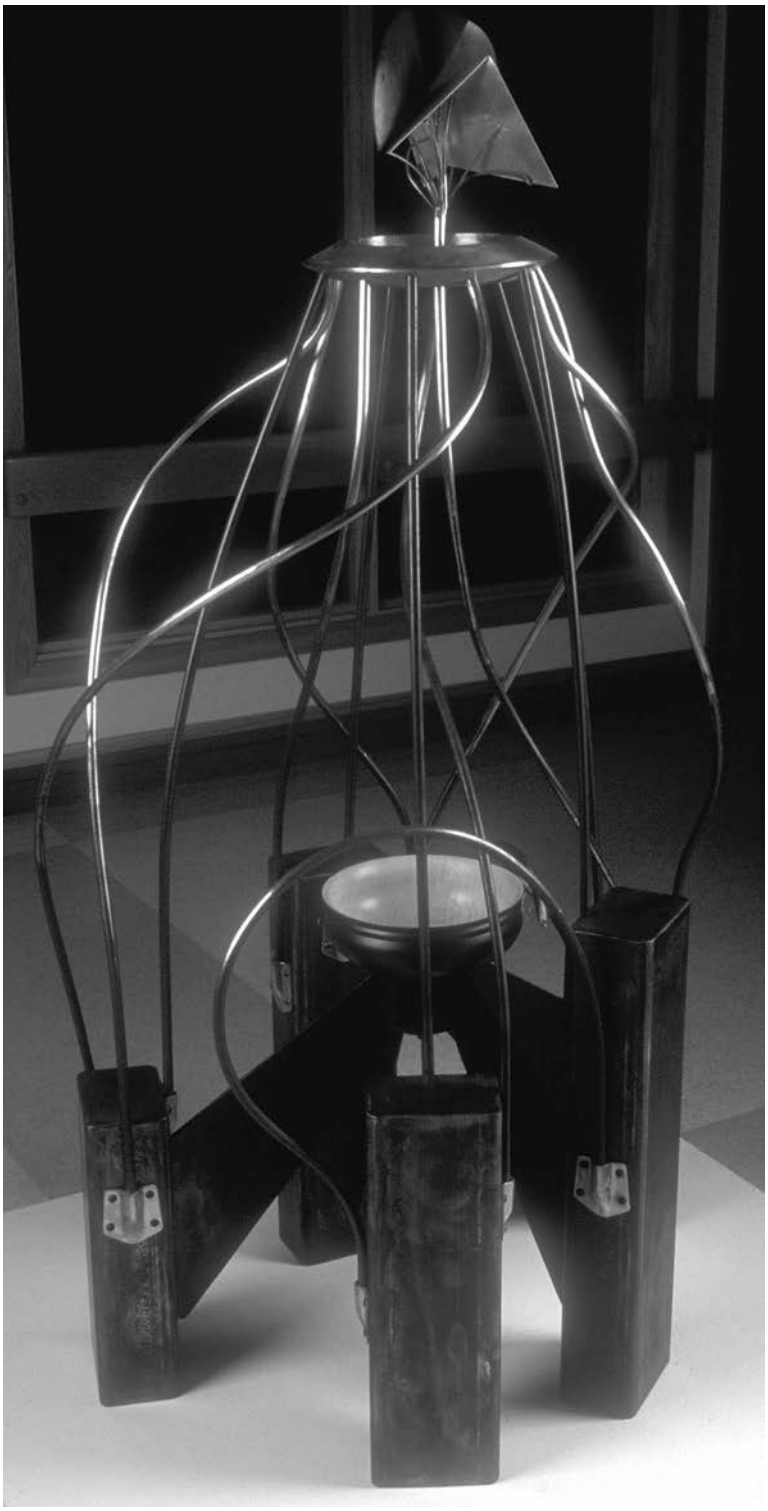
"Harsh and Unforgiving"

A spontaneous piece that Trent Watts made in the summer class of 1995 was a small human figure, head cut open, and brain area stuffed with cotton. It was representative of how he felt after much talk about design and after participating in a number of three-dimensional class projects. It wasn't that Trent didn't get it. He was simply overwhelmed with so much new information.

In the "Design and Narrative" class, Trent focused his emotional energy on designing a sculpture based on the songs of Connie Kaldor, a singer/songwriter from his hometown province of Saskatchewan, Canada. Kaldor's songs are stories about the prairies and contain strong images of the struggle to survive in a harsh environment. This struggle brings out the pioneering spirit in people to make do with what is at hand. In spite of its harshness, people view the land as beautiful.

In his piece, Trent wanted to capture his environment, in particular the changing of the seasons. For this he used color: White represents snow, suddenly changing to green for spring. Brown is for summer, with the whirlwind representing hot summer days, wind swirling the dust around. Blue and white inside the whirlwind suggest the expanse of sky and clouds.

Associating with a group, using their energy and input, is important to Trent's way of working. The "Design and Narrative" class provided an ideal setting for high-energy interaction. Realizing how important that interaction is to him, Trent has started an informal woodturning group that meets once a month to continue the give and take of design and making.



"In the Factory of Birth"

Joe Mamone not only does woodturning, he studies and makes metal sculpture. The things he creates are for his own personal satisfaction. Over the years, Joe has taken a number of classes at Arrowmont, but had not yet developed his own working style. He was feeling unfulfilled, simply making copies of other turners' work. His desire to find his own way led him to take the "Design and Narrative" class.

In "Factory of Birth," Joe combined his woodturning knowledge, his metal sculpture, and the song, "Factory of Birth" by the Who, to make a statement that confronts his concerns for his work and its influences. In the months after the class while working on designing his piece, Joe thought long and hard about this song and what the words meant to him. At first he tried to portray the whole song. Finally he zeroed in on these lines:

In the factory of birth,
everything I do's been done before.
At each end of my life
is an open door.

Joe's statement sums up the process he followed in making "Factory of Birth":

"I have been fortunate to have been able to study with many well known turners. Throughout this process, I began to see that everything *has* been done before. Now that I have come to that revelation, how would I move past this obstacle to something that is truly mine? I applied my life experience and my varied interests and everything that has influenced me to produce my 'Factory of Birth.' Because whether we admit it or not, everything we do has a thread of our past through it. We are affected by what has come before and we affect what will come after. So as the song says, 'at each end of my life is an open door.'"

week class taught by Loar and John Jordan, which eight of us had taken. (See Rodger Jacobs' "Design Class at Arrowmont," AW, March 1996.) The final assignment was to use the songs that each person had selected, previous to the class, to develop a narrative sculpture inspired by the meanings and potential imagery contained in the lyrics. At times we struggled to understand the meaning of words and phrases of our song. I discovered that the song I selected, "She Moves On," by Paul Simon, was not what it appeared to be on the surface. Much to my delight, interest, and amazement, the lyrics deal with how inspiration comes and goes in a person's life, precisely what we were learning about in this class.

Using our understanding of the song as a point of departure, we sketched images evoked by the storyline. We were looking for some-

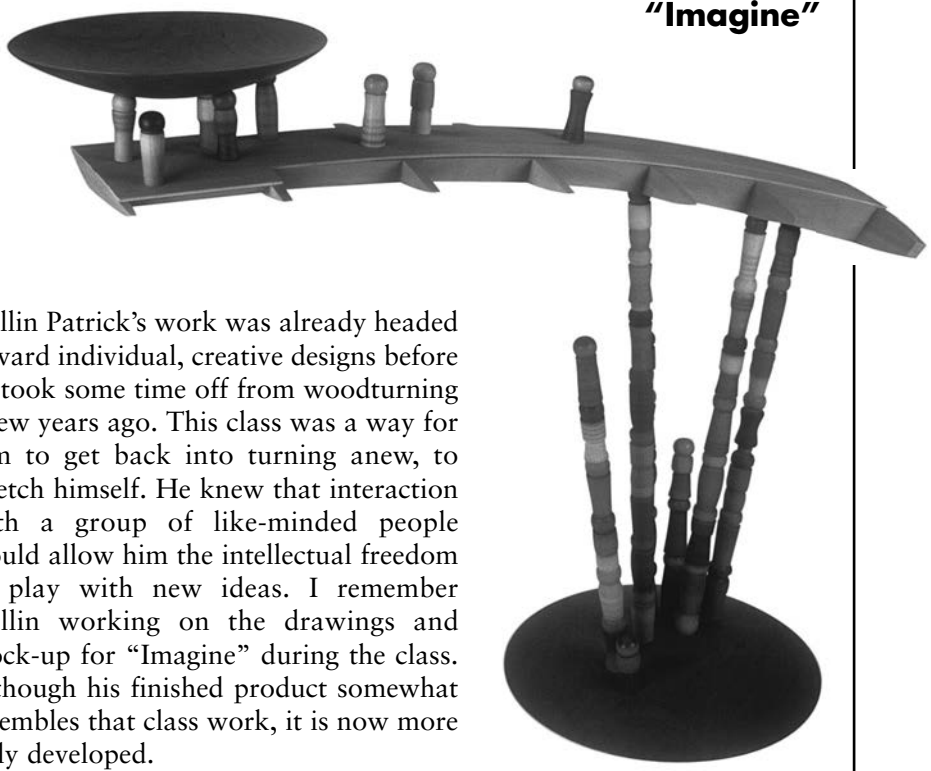
thing in the lyrics that we could personally relate to, be inspired by, and express in a turned item. It might be only one word or a phrase, although the entire song's story could be used. The design exercise, as it related to individual's songs, often became quite personal, and many of us found that we needed to work more quietly on our own, stepping back from interaction with others.

Steve talked individually with each student about his or her song. He asked difficult questions and pushed us at times. We made drawings and mock-ups. By the end of the week many of us had a detailed sketch or at least an idea of what we would make for the group show, to be worked on over the next few months.

A quick glance at the show will tell observers that the pieces are interesting, varied, and expressive, even though for many of us this was our first time exhibiting. There are no Steve Loar-like creations, a tribute to Steve's ability and efforts to encourage students to do their own work.

Some of the pieces in the "Design and Narrative" exhibition you will like better than others. Some people took their first steps into thinking about design that week. For others, the process was a continuation of study about design. Much of the actual work on exhibition pieces took place in the months following, as each of us considered all that we had learned. Everyone in the class achieved a higher level of understanding of what it takes to develop work that is individualistic. When you look at this exhibition, as well as others like it, I challenge you to view it with the same understanding, and find something useful or provocative in each creation.

This exhibition of student's designs from a week of inspirational work at Arrowmont stands to influence the field of woodturning. It seems fitting, then, that the first major exhibit in Arrowmont's new wood studio is composed of work created by a design class. Surely it is a sign of things to come. The effects will ripple through the years, as many of the people from this class continue their own careers. Each of us had our work influenced by the classroom experience and we will, in turn, influence others.



"Imagine"

Rollin Patrick's work was already headed toward individual, creative designs before he took some time off from woodturning a few years ago. This class was a way for him to get back into turning anew, to stretch himself. He knew that interaction with a group of like-minded people would allow him the intellectual freedom to play with new ideas. I remember Rollin working on the drawings and mock-up for "Imagine" during the class. Although his finished product somewhat resembles that class work, it is now more fully developed.

The key lines from Rollin's song, "Imagine" by John Lennon, are portrayed in this piece:

Imagine all the people living for today.
Imagine there's no countries…
Imagine all the people living life in peace…
I hope some day you'll join us
and the world will be as one.

There are many more words and phrases to the song, but Rollin chose to focus on the portion that struck a chord in him and that could be portrayed in a finished piece.

The bridge symbolizes the joining of people together as they cross over into a place of wholeness. Rollin soon realized that his first idea of how to portray the people, in the form of broken bowls crossing over the bridge to become whole bowls, was too busy. He simplified the design to give the suggestion of people.

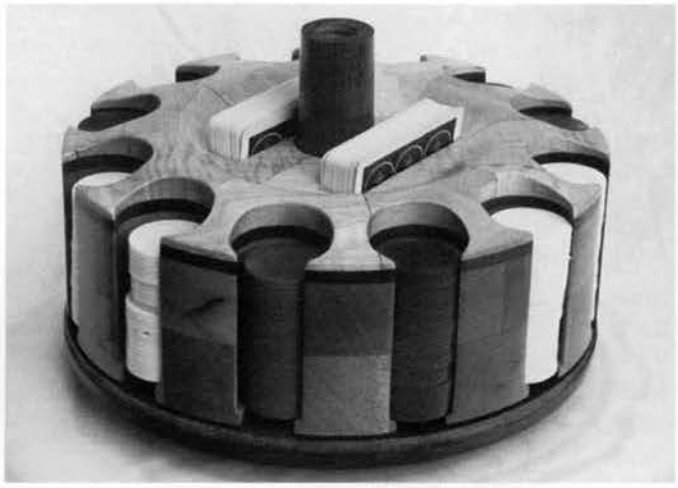
The technical concerns for how to support the piece evolved as well: he first wanted to attach the piece to a wall, but realizing that there might not be suitable wall space, he provided a self-contained support system for the bridge. Self-supporting, the piece is more powerful and more effectively conveys its message.

Betty Scarpino, a contributing editor of AW, *turns wood in Indianapolis, IN. For information on design and other workshops at Arrowmont, call 423/436-5860.*

PHOTOS FROM THE MAILBAG

This 11" high goblet is made of Honduras mahogany, lacewood, ebony, tulipwood, oak, and an ostrich egg.

—Paul Burri, Goleta, CA



The chip/card, holder is made of mahogany, ipe, and fiddle-back maple. The cover is of walnut, lacewood, fiddle-back maple and wedge segments. The base has a redheart center shaft, threaded to receive the segmented-ring carrying handle that also serves to lock the top on the base.

—Howard O. Evans, Austin, TX

This 18" high mashrabeya table features 638 pieces. *—M. Maybalian, Fairview, NJ*

This $3\frac{1}{2}$" dia hollow form of carob with ebony inlay features a piece of dichroic glass that reflects a colorful image when you peer inside. *—Ben Fischer, Santa Monica, CA*

On exhibit at the State Museum of Pennsylvania in Harrisburg through September 7, "Sisyphus Imu" is based on the myth of the Corinthian king condemned to repeatedly roll a heavy stone to the top of a steep hill in Hades, only to have it roll down again—a reflection on my career as an artist. The figure was turned on five axes, two of which have rendered it hollow from all viewpoints.

—Dennis Mueller, Hatboro, PA

FITNESS IN THE WORKSHOP

WOODTURNING IS AN ABSORBING ACTIVity; often we find ourselves so fully engaged at the lathe that we are unaware of how much we are taxing our body. There are consequences to overusing the body this way. I see them as an amateur woodturner and as a professional physical therapist. Although I still have occasional "catches" in my amateur role, my professional side has figured out how to prevent the liabilities of improper physical positioning and movements. Physical comfort while working and freedom from disabling aches and pains when we're done is really a safety issue that is best understood in terms of the ergonomic requirements of a workshop and the physical activities in it.

We all strive to avoid turning mishaps, rightly abhorring the loss of a piece. As well, we don't assign our human form to scrap, regardless of its condition. But all too often we forego preventive measures and jeopardize our health, perhaps mistaking our priorities, perhaps not fully understanding how to do right by ourselves.

You are familiar, perhaps from personal experience, with the terms *repetitive motion injury, overuse syndrome,* and, more specifically, *carpal tunnel syndrome,* and *golf* and *tennis elbows.* All of these represent accumulative trauma with resultant microscopic tears and/or irritation of muscular or tendinous tissue. Controlling the pain and inflammation with medication often only masks the condition and is not the solution. Determining the cause and its prevention is. I have prevented most of that personally, but in my enthusiasm, I find myself during extended periods of time at my lathe (a lovely Conover) trying to defy needed rest for my muscles. I feel it first as muscle soreness in my neck. Certain muscles of the body sustain static postures rather well while others do not. Try holding your arm out from your side for a minute or so. Backs and legs and even necks fare somewhat better, but it is human nature to demand more, sometimes abusing our capabilities. We force our pliable body into submission, expecting it to comply; occasionally it rebels.

As beneficial as a "cure" can be, identifying the cause and then preventing the problem is the best approach. We must start with understanding some basics. We know that objects shouldn't fall over, and we try to prevent such occurrences. However, we seldom take time to analyze why an object tumbles or not. Everything, person or object, has a center of gravity (CG). It is an imaginary point representing the object's center of weight, pulled, so to speak, toward the earth's center. For earthly purposes, we are all subject to this force. The CG lies within the confines of a stable object's or person's base of support or "footprint."

Picture a pyramid, and you are picturing stability. A long cylinder resting on end is less stable; its footprint is relatively small, but so long as the CG remains directly above that footprint, it won't topple. A ball or an inverted cone have miniscule footprints. The former will roll with the least provocation and the latter won't even stand up.

Look at your shop equipment—a good base or "footprint?" Of course. Much like that of a cube.

Now consider yourself standing in your shop. You're more like a cylinder. If the CG gets outside of its footprint, a crash is imminent, unless you can get the line of force passing through the CG back within its footprint quickly enough, like balancing a dowel on the end of your finger.

If an object's shape or position changes, the location of its CG also will change. In the human body, its location depends on anatomical structure, posture, current position, and whether external weights are being supported. Because we are segmented, our body is capable of numerous positions, and our CG moves about much more than that of an inanimate object. What we do with our head and limbs necessitates considering the relationship of their individual CGs to our body's main CG which may also be in motion at the same time.

Say you are pushed. You automatically will adjust your footprint by moving your foot or perhaps even jumping into a new position to keep your CG under control. Muscles contract rapidly for a moment, then relax as you regain your footing.

Now extend one arm outside your "footprint." Here, too, you accommodate for the change in your balance by muscular contractions, but these contractions are steady. Keep this up long enough and you will experience fatigue. Continue the practice and you will experience discomfort, socalled overuse syndrome, and finally disability.

When you bend forward at your lathe or other piece of shop equipment, you unconsciously reposition your feet, thereby enlarging your footprint. Or you should. The more your CG shifts toward the perimeter of your footprint, such as when you lift or hold some object (tool, piece of wood, etc.) the more muscular effort is required to maintain overall stability. A wider stance places fewer demands on your muscular system.

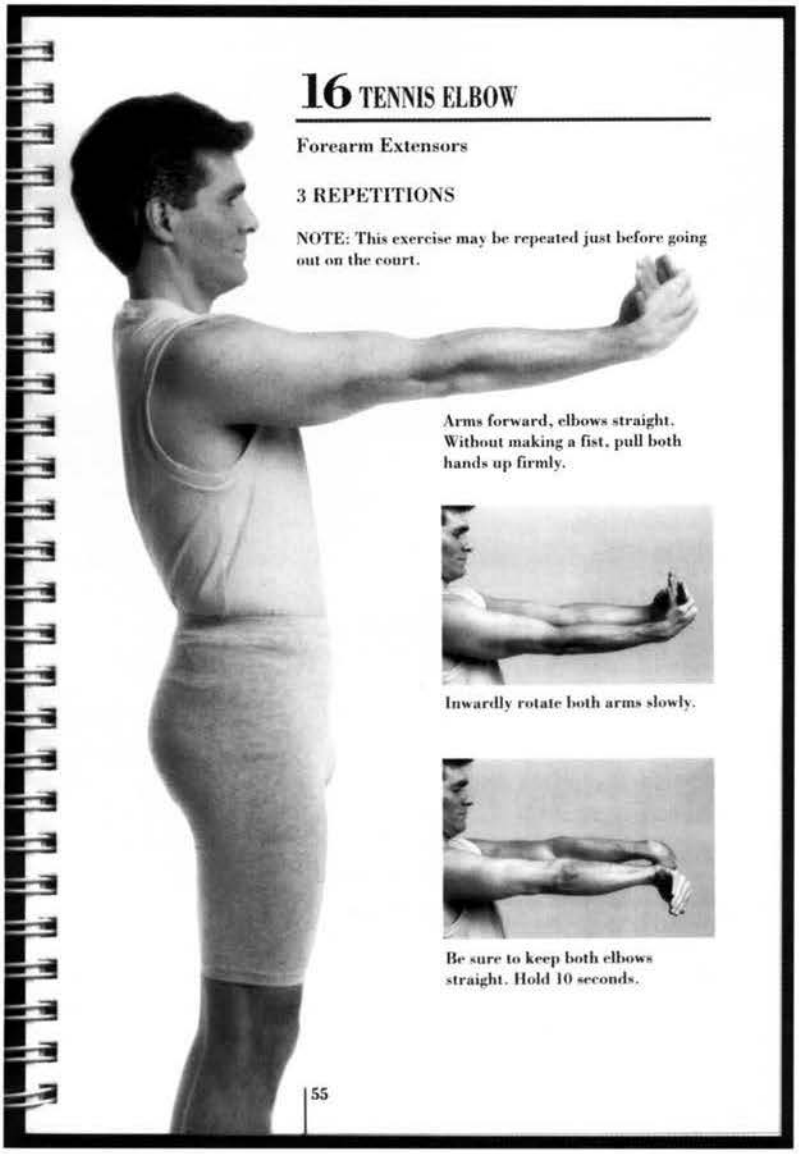
What about those appendages of your segmented body that have their own CG in relation to the whole body's CG and base of support? Cantilevering or moving a limb outside the footprint's perimeter, or even tilting your head on its own base of support (shoulders), calls on dynamic, postural changes of those segments and muscular adjustments

of the rest of your body. Maintaining any posture requires countering muscular activity and presents potential muscular fatigue. Something as simple as the focal length of your eyeglasses can affect head and neck posture adversely, hence your overall posture. Consider the constant work required by back muscles to compensate for the forward displacement of the CG that having a bit of a belly entails. Now picture yourself leaning over your lathe, taking the final passes on the inside of a deep bowl.

Rhythmic or at least occasional changes of position reduce the buildup of muscular fatigue which is best relieved before muscle discomfort, twitches, or spasm signal trouble. Recognize the cause and you are forewarned. You can prevent overuse symptoms and avoid chronic, disabling conditions. The body works most efficiently if it can move freely and relaxed. Skill in any activity demonstrates this, making challenging maneuvers seem effortless.

I recently self-published a book about a new technique of stretching to regain and maintain the physical mobility we all have relinquished since childhood. The method, called "active" stretching, incorporates the principle of reciprocal innervation of muscles, set forth by Sir Charles Sherrington at the turn of this century. He proved in the laboratory what we all know naturally, that when our muscles contract, the opposing ones are inhibited and relax. Stretching procedures that take this into account eliminate force and are the only safe way to stretch.

Although *The Flexibility Manual* is a total body method, involving a series of interrelated "exercises," the page reproduced here will show how straightforward and beneficial this method can be. The jarring forces of an improper backhand tennis stroke are perhaps less damaging than a woodturning "catch" and much less problematic than the repetitive stresses absorbed when hollowing end grain. But regular exercises like this can really make a difference.



16 TENNIS ELBOW

Forearm Extensors

3 REPETITIONS

NOTE: This exercise may be repeated just before going out on the court.

Arms forward, elbows straight. Without making a fist, pull both hands up firmly.

Inwardly rotate both arms slowly.

Be sure to keep both elbows straight. Hold 10 seconds.

55

The important thing to recognize when stretching muscles to alleviate stress, soreness, and tightness is that force is counterproductive. Active stretching utilizes normal neuromuscular activity, slowly contracting one set of muscles in order to relax, stretch, and restore flexibility to the opposing set. There is no bouncing, no pain for gain, no elaborate body positions, no danger of overdoing it.

The exercise here is only a sample, of what you can do for every muscle in your body. If you actively stretch gently and consistently every day and not merely to "get by," you will benefit. Your body no doubt has acquired its current state, if not of aches and pains, of reduced flexibility and range of motion, over a long period of neglect. Be patient and enjoy the gradual improvement. When reestablishing physical mobility in your life, remember that something overlooked is equal to new wealth when its usefulness is discovered. —*Howard K. Peters, B.S., P.T.*

Howard Peters, a woodturner and physical therapist, operates Sports Kinetics in Berwyn, PA. For more information on his book and accompanying video, contact him at 610/647-3299.

POWERMATIC MODEL 3520

Powermatic 3520 specifications:

Distance between centers	*34½"*
Swing over bed	*20"*
Spindle speeds	*0–1400 / 0–3200*
Motor	*2-hp, 220-v, 3-phase*
Lathe (input)	*220v, 3- or 1-phase*
Spindle thread size	*1¼" x 8*
Headstock/tailstock taper	*#2 Morse*
Height	*44" (adjustable)*
Weight	*650 lbs.*
Tailstock quill travel	*over 4"*
Overall length	*50"*
Manufacturer's suggested retail price	*$4,191*

Optional accessories:

- *Indexing mechanism*
- *Full bed extension (a bed and one leg)*
- *18" bed extension (bolts on with no floor support)*
- *Free-standing floor tool rest*
- *2" spindle nose extension*
- *14" extension for 25" swing (To support standard tool-rest base while turning over the end of ways. The required longer shank tool rest is to be standard for newer machines, optional for older machines)*
- *Various faceplates and tool rests*

MY EARLIEST RECOLLECTION OF RUDE Osolnik is seeing him whack a tool post lock with a tool handle to keep a tool rest from moving. At the time I considered this quite savage treatment of equipment. Years later, having experienced damage to myself and workpieces from tool rests that moved, I now consider this quite appropriate behavior. In fact, I might whack it even harder.

Rude will not have to do this with the new Powermatic 3520 wood lathe. Between Rude and Powermatic they have incorporated a tool post lock that actually holds. This is one of many signs of Rude's involvement. When developing the new Powermatic 3520 wood lathe, Rude was asked for his input. This is something domestic U.S. tool manufacturers would have been well served to do before major advances were made and superior equipment was designed and built elsewhere.

The new Powermatic 3520 is conceptually a major advance, with the movable headstock and integrated drive making it possible to turn between centers, with minimal ways (as a short-bed bowl lathe), or past the end of the ways—all within a relatively small space. How it shakes out with other machines (see "Big, Brawny & Sophisticated" by Ken Keoughan in *AW*, December 1996) based on value, cost, and function, only time will tell. It probably has significantly less capacity for heavier, eccentric, or larger work than the lathes in the Keoughan article. Powermatic's ability to refine the design and produce a reliable, precision machine based on Rude's concepts will be pivotal.

I have had experience with two of the new Powermatic 3520 lathes; the first was during three days of demonstrating on a prototype at the Indianapolis Woodworking Show and the latter was with a production model supplied to Bob Costin for his woodworking business near Crawfordsville, IN.

While at the show I rough-turned a series of bowls from green sycamore. Initially I had difficulty achieving the turning speeds I wanted without excessive vibration. Removing the leveling screws and shimming under the legs helped enough to obtain a reasonable speed though still less than I would normally use. The machine had enough power to take very aggressive cuts.

The positive locking of the tool rest post was a real pleasure. I liked it a lot, though there were problems with it. The locking segments in the tool-rest base can become misaligned when the post is withdrawn; however, they can be readily realigned. Movement and locking of the tool-rest base was erratic. This was more problematic, and consistently so, on Costin's lathe. To unlock and move the tool-rest base required a rotation of the handle enough above the horizontal to make one hand movement almost impossible. This could be helped by adjusting the takeup in the base so that the handle would be lower or further clockwise in the locked position. However, at the show I had a problem with scraping my knuckles on the sharp lower edge of the tool rest base with the handle in this position. A closer look at Bob's lathe indicated a variation in bed thickness, not to mention a crown to the bed, that probably either caused or contributed to the movement difficulty. According to Powermatic, the measurements I made were outside of their specifications and steps have been taken to reduce the variation in subsequent machines. I understand that Powermatic plans to replace the bed. Easy, consistent, reliable locking, unlocking, and movement of the tool-rest base is something I think woodturners can expect and should demand on a lathe, particularly one in this price range.

The long tool-rest base is really wonderful for getting access for bowl work, particularly for turning on the back side of pieces, where the tool-rest base cannot be moved past the work. While I did not experience any difficulty traced to it, the 18-inch tool-rest clamp shaft might deflect or take a set if clamped aggressively, which could cause problems with movement and clamping.

The movable headstock with integrated drive really makes this a versatile machine. I was able to lock the headstock securely at the right-hand end of the ways, providing excellent access for bowl turning. I was, however, not using the tailstock to support the work and do not know whether or not it would have shifted the headstock. There was some diffi-

culty in locking both the headstock and tailstock on Costin's lathe. I understand that Powermatic is adding a bushing or collar to the tailstock clamping mechanism to improve clamping. On the production lathe the headstock locking lever has been moved to a better position than on the prototype; however, it is now possible to skin a hand on the bottom of the inverter case.

Having the drive motor mounted directly on the headstock and the drive belt tensioned the way it is eliminates motor bounce and the resultant headstock deflection. I found it simple and easy to shift the poly-vee belt for speed range and torque changing. (I regularly cut bowl centers out at relatively high speed and low torque to preserve myself and the work). The machine is not set up to reverse spindle rotation and perhaps should not be, given the lack of a means to lock faceplates or chucks to the spindle. However, some turners do regularly reverse rotation and may expect to be able to with a machine in this price range.

The optional indexing mechanism has some play in it, lacks convenient referencing, and the external knob interferes with turning tool access around the headstock. It needs improvement.

While I did not make a direct evaluation of headstock/tailstock alignment, it is hard to believe it could be very close with the observed bed way clearances to the headstock and the tailstock, combined with bed crown. These characteristics plus bed thickness variation could make it difficult to satisfactorily fit bed extensions so that the headstock, tailstock, and tool-rest base can be readily moved across the interface. Powermatic is aware of this and working on solutions.

The spindle nose is relatively short, positioning the work close to the headstock, which should help with stability. On the other hand, the short nose reduces clearance to the headstock for working on that side or swinging a natural-edge piece. The optional 2-inch spindle extension can be obtained to manage this. It would also help in clearing the indexing mechanism knob.

The only way to lock the spindle is to use a wrench on the flats cut on the spindle nose. This is really inconvenient and also removes a critical portion of the spindle nose shoulder for aligning chucks and faceplates. While I did not notice an alignment problem with my Axminster chuck, Bob Costin has reported severe alignment problems with two different chucks on his lathe. He indicated that Powermatic has agreed to provide a replacement spindle but that he will have to provide the installation.

While I did not use it or see it in person, the free-standing floor stand looks like it would provide good foot access and stability. Without trying it, I cannot tell how well it would fit around the end of the lathe.

Vibration can be really complex to analyze and deal with; it became pronounced on both machines with a small increase in speed. The frame material is cast iron which as a material has excellent vibration absorption properties; however, the center of gravity of the machine seems rather high (the stance is narrow, front to back, for one thing) and could contribute to instability. With this machine I would load the base with sand, the bottom of the box perhaps even a little lower than the cast-in supports, leaving enough room for toes and trash between the bottom of the box and the floor. It is hard for me to believe that the leveling/height-adjusting screws would be anything other than a problem. If they are used, jamming two nuts together at the top would provide a way to make adjustments more conveniently from above. Another nut jammed against the top side of the casting would help to stabilize the pads.

The Baldor inverter is programmed by Powermatic for switching on and off, torque control, speed control, and ramping up and down. While the speed control is a too sensitive, making adjustments a little fitful, I liked the way the machine held speed under load. In their installation and operating manual Baldor indicates that a standard ventilated NEMA 1 enclosure should be used where the control will be subjected to large amounts of airborne material. This may indicate that precautions should be taken with sanding dust or other particulates.

The Powermatic 3520 operating manual cries out for some professional help and needs a complete rewrite. It is truly a mess and is similar to the manual for my Powermatic 81 bandsaw. Nevertheless, I like the bandsaw a lot.

Other turners had these comments on the machine:

It's the best lathe I've turned on. I like the uniform torque and quietness of the 2-hp AC motor and inverter. It's wonderful that the headstock moves the length of the bed, making it possible to turn outboard right-handed. I have no problem moving the headstock, tailstock, or tool rest the length of the bed or locking them. I do position the headstock against the left stop for spindle turning.

I've had no problem with chuck alignment after putting a washer between the spindle shoulder and the chuck to get alignment from only one side of the spindle threads.

Price is competitive, and it is made in the USA.

—Charles Alvis, Nashville, TN

Having other Powermatic machines, I did not hesitate to acquire their new lathe, as I have always been impressed with the construction and performance of their machines. However, I feel this

machine may have been marketed before all the engineering and testing had been completed.

The first problem I encountered was center-to-center alignment. Powermatic was responsive to this problem, and after four attempts to correct it, finally replaced the entire machine. I also had severe runout problems which were traced to the wrong pitch on the spindle threads. I am told that Powermatic is replacing the spindle on newer machines, and is correcting the problems on existing machines. More engineering is required on the indexing mechanism (there's no real spindle lock), speed dial, and on/off switch. I also think the tailstock locking could be improved by replacing the round disk with a square plate to get more bite.

I think the lathe has many good features and no doubt will equal the quality and performance of other Powermatic machines when these early problems are resolved.

—Bill Cook, Architectural Cabinets, Kennesaw, GA

The new design is good, but I have not had a good time at all with this lathe. I have had locking problems with both the headstock and tailstock; both have been replaced. The headstock locking plate definitely needs to be changed from a casting to steel in order to withstand the stress of securing a 200-pound headstock to the ways; ours failed, releasing the headstock while turning. Adding the stop collar to the tailstock has improved locking there, but has not eliminated the problem.

The inverter being open to dust is a problem; on other lathes it's enclosed.

I would prefer to be able to reverse the spindle rotation.

I found manufacturing tolerances to be sloppy, not what should be expected for the price, or from Powermatic.

—Robert Sonday, Operations Manager, Arrowmont Wood Studio

I had the opportunity to work on the new Powermatic lathe during a week of instruction at the John C. Campbell Folk School. The machine's strengths include its overall mass, the ease of converting to a bowl lathe, plenty of power for most applications, and a rather compact structure. On the other hand, I found it a bit top-heavy (the legs don't have enough splay), subject to vibration with larger work (sand might help here), somewhat noisy (the motor fan was annoying as well as the buzz from either the motor or converter), and awkward around the headstock (the boxy shape and short spindle provide little clearance for work in this area, and the space between the motor housing and the small handwheel creates a pinch point). I found the speed control too sensitive (I inadvertently turned the lathe on several times by lightly brushing against the switch).

I noticed that the headstock sometimes failed to completely lock if even modest pressure was applied with the tailstock handwheel. I initially attributed this to the slickness of the ways of the bed. A bit of wear and a little rust might actually improve this nuisance. It is also possible that the headstock locking mechanism needs some attention.

Overall this is a lathe with several innovative ideas, but it requires some refinement.

—Alan Lacer, Shoreview, MN

You are probably wondering what all this means. Initially I thought a review of a new Powermatic lathe would be a piece of cake: just have fun for several days turning on a machine made by a premier manufacturer with help from woodturning's Grand Master, then write a review saying it was wonderful, and get back to the lucrative business of woodturning. As you can see, it turned out to be more complicated than that, and I do not have a simple straightforward conclusion. But I do offer some constructive thoughts:

If you already own a Powermatic 3520 or anticipate taking delivery on one I would check the following:

• ***Bed thickness variation.*** Check by moving and clamping the tool-rest base over the entire length of the bed. You should be able to move the tool-rest base freely over the length of a clean bed with the locking lever in the horizontal position and lock securely with less than 30 degrees of clockwise rotation. If you cannot do this, you likely need a replacement bed. Confirm this by measuring bed thickness; total variation should be .010 inch or less.

• ***Chuck or faceplate runout.*** Either one should be located by the shoulder at the base of the threads and the right side of the thread grooves. If the threads start to get tight before the end of the chuck or the faceplate reaches the shoulder at the base of the threads then good alignment usually cannot be achieved. There is likely a thread relief problem with the chuck or faceplate or inadequate clearance between the threads on the spindle nose and the chuck or faceplate. Powermatic should know which spindles were made with enough clearance to accommodate generally used chucks and replace yours if it is a problem. If there is a thread relief problem, then you will probably need to machine away some of the initial threads in your chuck or faceplate or use a precision washer between the spindle shoulder and the chuck or faceplate. I am assuming that the shoulder by the threads, the threads, and the bearing seats were all machined by Powermatic in the same setup and are not eccentric.

• ***Spindle runout (center to center).*** This can be checked by turning a spindle between centers and then reversing ends. If you use a hard piece of wood and are careful in locating the centers, any shadow in the spinning wood is probably due to an eccentric rotation of the drive center. This is likely due to the bearing seats

and the Morse taper not being on the same axis. A replacement spindle with the bearing seats and the Morse taper on the same axis would be required to fix this. This is important if you want to run pieces through more than one lathe, flip a spindle end for end between centers, or have accuracy and predictability for multi-axis turning.

•***Spindle/bed parallelism.*** Because of the clearance between the ways for the headstock and tailstock locating projections, parallelism in the horizontal plane is dependent on how straight and parallel you clamp the headstock and tailstock. Parallelism in both the horizontal and vertical planes can be checked as follows: 1) Place a center in both the headstock and tailstock, position the centers together, and note displacement. 2) With the center remaining in the tailstock, move it to the right end of the ways, place a drill chuck with Morse taper in the headstock, chuck a pointed metal rod as long as will fit, bend the rod until it rotates about a point, and with the tailstock center moved up to the metal rod tip, note the displacement between the two. 3) Any difference in displacement is due to a lack of parallelism. This parallelism and alignment becomes important when a) holding a drill in the tailstock and advancing it deeply into a piece rotating on the headstock, or b) supporting a workpiece with the tailstock when it is rigidly attached to the headstock, particularly if the workpiece is long or glued to a mounting block. If you intend to do this kind of work, it would be worth checking.

•***Headstock & tailstock locking.*** Moving the headstock all the way to the left against the stop should keep it from moving for spindle turning. It may be necessary to reinforce the stop and to have it on both sides. You could request the stop collar from Powermatic to improve tailstock locking. It should help with spindle turning and may be enough to adequately support facework. Most tailstocks move some, and it is difficult to say what is good enough. This may tell us, though, that locking the headstock will be problematic.

If you are considering the purchase of a Powermatic 3520, don't give up on it. As with many new products, the manufacturer deserves some time to work out engineering and production problems. But be careful. If you are not thoroughly familiar with how to check out a lathe, know that some of the problems may not come up until you try to do a particular operation sometime in the future.

After years of advancing woodturning and contributing a lot to many , including me, it is only fitting that Rude Osolnik share with us in a tangible way what a really excellent wood lathe can be; now it's up to Powermatic to follow through. A promising start has been made, but a task remains. I've never known Rude to be shy in such situations, and I'm sure he would not want us to be either. —*David Beery*

David Beery holds B.S.E.E. and M.S.I.A. degrees from Purdue University. First an amateur, now a professional turner for several years, he is president of the Central Indiana Chapter and works at Brown Ridge Studio near Bloomington, IN.

EDITOR'S NOTE:

I talked with Gerald Motley, Sales Manager at Powermatic, apprising him of the problems cited in this review. Motley's responses are as follows:

•The problem in early machines with headstock-tailstock alignment has been corrected in machines now in production. The bearing seats in a number of existing units have been remachined and this service is available to owners of earlier Powermatic 3520s, free of charge.

•The problem of spindle threads not matching the threads of existing chucks has been corrected in machines now in production, and a new spindle is available to owners of earlier Powermatic 3520s, free of charge.

•The sensitive speed control has been replaced and reverse rotation has been added. This upgrade, replacing the speed control panel, is available for a nominal charge.

•Powermatic is in the process of improving the indexing mechanism and including a spindle lock.

•Baldor assures Powermatic that dust is not a problem with their unenclosed solid-state inverter. There have been no reported failures to date.

•The cast-iron headstock locking plate grips better than steel and is adequate for pressures necessary to secure the headstock against lateral loads from the tailstock of up to 500 pounds.

•Powermatic supports its products and welcomes feedback and suggested improvements. Problems, questions, and suggestions should be directed to Gerald Motley, 800/248-0144, ext 228.

Carving on Turning by Chris Pye. *Guild of Master Craftsman, 1995; distributed by Sterling, 800/848-1186. Paperback, 176 pages, $14.95.*

I first saw Chris Pye's work in 1991 at the Association of Woodturners of Great Britain symposium in Loughboro, England. He presented a few turned and carved posts for a four-poster bed. I was repeatedly drawn back to these posts and considered them the best pieces there. This was unusual, as I rarely am attracted to this sort of work. These pieces, however, exhibited such a straightforward and refined skill and intelligence in both design and execution that I couldn't stay away. When I met Chris, he showed the same clarity and intelligence.

His book is an accurate reflection of the man and his work. I find both the writing and the photographs clear and easy to understand. As I can not find any substantial criticism to make regarding the book, I will make this review a guide to its content, giving a sense of its scope.

As might be inferred from the title, the book is primarily about carving on turned work. Chris distinguishes between carving and shaping. "Carving involves the traditional tools and methods. The wood itself is only a support for the light and shadow of forms and details created by the carving cuts themselves....Shaping is where the grain and figuring of the wood are given a place of at least equal prominence to the form of a piece." While shaping gets some attention, the main focus is on carving with traditional tools.

The book begins with a chapter on design and the combining of turning and carving. There is not much information on turning , as the author assumes the reader has "at least a basic understanding and competence in woodturning, both between centers and faceplate work." There is an excellent chapter on choosing and sharpening carving tools, including a description of sharpening a V-tool that has helped me better understand the process.

After this, the book consists of a series of projects illustrating various types of carving, from "decorative marks" to lettering, from high- and low-relief carving to carving in the round. Each chapter introduces new skills. The book serves as a reference for various ways of carving on turning. To successfully complete some of the projects requires quite a bit of skill. Most of the information to acquire these skills is included in the book. As the author says, "There are only two things you need to do if you want to learn how to carve: you need to start somewhere and then continue. You will eventually discover, from others or by trial and error, what you need to know."

This book will help reduce some of the trial and error. For anyone who wants to combine carving and turning, I give Chris Pye's *Carving on Turning* the highest recommendation

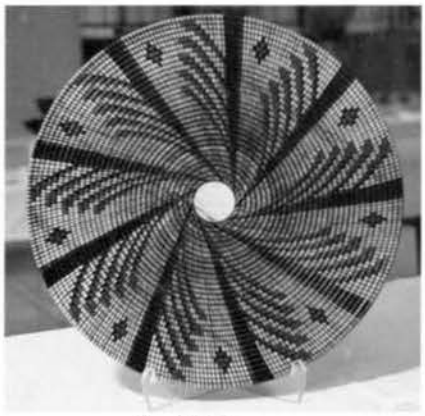
—*Alan Stirt*

Alan Stirt is a professional turner in Enosburg Falls, VT, widely known for his own carved bowls.

WOODTURNING FIESTA: INSTANT GALLERY

James R. Johnson

Jerry Brownrigg



David Nittmann

Bob Hawks

Simon Levy

Photos: Rick Mastelli and Larry Mart