VERNIER CALIPERS MEASURE UP! • CUSTOM-MADE LINT ROLLER • HEAVY-DUTY TOOL HANDLE

AMERICAN WOODTURNER

Journal of the American Association of Woodturners

February 2014 vol 29, no 1 • woodturner.org

FINIAL FUNDAMENTALS

OIL FINISHES FOR TURNED OBJECTS

STABILIZING WOOD: AN ALCHEMIST'S GUIDE

THE LYNN MUSEUM

HermannSielaff Germany

Spinning, spinning, spinning …

A year ago, after winning a local speed-turning competition for tops and months later reaching third place in an international contest, I reflected on those events and realized the joy and fun of those contests did not endure. I decided to investigate making tops whose production techniques are more ambitious, such as combining tops, spheres, and pierced elements.

I started with spin tops and experimented with drilling holes. The holes changed from circular to oval, and then made me wonder what two lenticular halves glued together would reveal. Spokes for tires came next; that challenge was to get the wheel hub exactly centered within the rim. This led to pierced, hollowed spinning tops. The joy of exploring is never-ending!

—Hermann Sielaff

Dedicated to providing education, information, and organization to those interested in woodturning

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office: 651-484-9094
toll free: 877-595-9094
fax: 651-484-1724

email: inquiries@woodturner.org
website: woodturner.org
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Cover – Joe Larese, Finials

Back Cover – Paul S. Petrie Jr., *Dave's Vessel,* 2013, Maple, dye, 5½" × 5¾" (14cm × 15cm)

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EDITORIAL

Editor Betty Scarpino
editorscarpino@gmail.com

Editorial Advisors Kip Christensen
Denise DeRose
John Giem
Malcolm Zander

Journal Production **Albarella Design**
Linnea Overbeck
Art Director
Production Management

EDITORIAL SUBMISSIONS

Send article ideas to:
editorscarpino@gmail.com

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MEMBER SERVICES

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ADVERTISERS

For rates and specifications, contact:
Pierre Productions & Promotions, Inc.
Erica Nelson
763-497-1778
erica@pierreproductions.com

Betsy Pierre
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betsy@pierreproductions.com

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A NOTE ABOUT SAFETY

An accident at the lathe can happen with blinding suddenness; respiratory and other problems can build over years.

Take appropriate precautions when you turn. Safety guidelines are published online at woodturner.org/resources/safety.htm. Following them will help you continue to enjoy woodturning.

From the Editor

Many AAW members are retired. A significant number of members still work full time, looking forward to relaxing and playing in their retirement years. Education and information provided by the AAW offer us opportunities to learn about woodturning and to make connections with other turners locally and throughout the world. These connections enrich our lives.

In his article, "Hemispheres of Influence," David Fry writes about Scott Strobel, who combines a love for woodturning with his career at Yale University. Through the bowls Scott makes and sells, he introduces woodturning to a wide audience. Joe Larese, professional photographer, will change careers in a few years to become a full-time professional woodturner. His photography skills beautifully capture turning finials. In the gallery section that accompanies his article, Joe highlights other turners' spindles, providing examples for aspiring spindle-turners.

Fun-loving and active, Roger Zimmermann seems not to be retired (although he is). In his latest article, "Vernier Calipers Measure Up!," he informs us how to use this useful tool. Through his many articles, Roger has connected with turners around the United States, responding to their email questions and comments.

This will be a transition year for me. I will not be renewing my editing contract in October, but I look forward to joining the growing number of baby boomers pursuing woodturning full time. The connections I made while editing *American Woodturner* have enriched my life in immeasurable ways. Later this year with my inbox empty and woodbin full, my connections with you all will sustain and inspire me as I generate my own piles of shavings.

Betty Scarpino

—Betty Scarpino

From the President

When I talk to AAW local-chapter leaders, the comment I hear most often is too few club members contribute their time and talent to programs and projects. By not stepping up and helping out, members miss out on personally rewarding benefits. Let me explain why.

One of the best-run chapter meetings is Carolina Mountain Woodturners. They have a crew for each part of the meeting. One crew moves in the lathe and equipment. Another sets up the audio/visual equipment. A third crew oversees the video library. A safety officer tapes all the cords to the floor. Others take care of critical parts of the chapter program—everything from collecting dues to selling raffle tickets to providing doughnuts. These combined efforts help create the camaraderie we all enjoy.

Cascade Woodturners, my chapter in Oregon, has a rule that each president will serve only one year. We now have many members who have experience in running the chapter's activities and we all understand the need to volunteer for other duties. Additionally, if only one or two members remain president year after year, it creates an undue burden and leaves the chapter vulnerable if something should happen to these experienced officers.

Let me encourage each of you to step up and help out. Pick something specific to your interests. Maybe start out by being an at-large board member so you can determine where your skills would be of greatest benefit. You could oversee the chapter library, be the go-to person for supplies and maintenance, or organize a group wood or tool buy. Arrive early at the meeting, help set up chairs, and clean up after the demonstration. Offer to demonstrate for a school or for a community fair. Help veterans turn pens and ornaments; when you explain how and why you do something, it will make you a better turner.

Offer to host out-of-town demonstrators or simply help with logistics, travel plans, or supplying materials for chapter demonstrations. Hosting is an enjoyable way to spend one-on-one time with interesting turners from around the country and the world. For more than 20 years, I have hosted turners from all over. The rewards have been many and the friendships lasting. Speaking of traveling, it's time to plan your trip to our annual symposium in Phoenix this June. We have an outstanding lineup of demonstrators and panel discussions. Come rub shoulders for three days with the best from all over the world.

AAW's local chapters are volunteer-run organizations. The key word is *volunteer*. I hope you will start this new year by stepping up and volunteering. Doing so will help your chapter thrive and also encourage other members to share the load. The connections you make will enrich your life.

Dale Larson

Dale Larson
AAW Board President

JOIN US IN PHOENIX, ARIZONA, FOR AAW'S 28TH INTERNATIONAL SYMPOSIUM

JUNE 13-15

Our international symposium is an excellent opportunity to watch world-class demonstrators share their techniques, to find out about the latest innovations in tools and materials, and be inspired by the Instant Gallery and other woodturning exhibits. Join us to experience in person the creative passion of woodturning while enjoying the company of others who share your interests.

SYMPOSIUM HOTEL

Sheraton Phoenix Downtown Hotel

Adjacent to the Phoenix Convention Center

$129/night plus tax

https://www.starwoodmeeting.com/StarGroupsWeb/booking/reservation?id=1309124077&key=49758

Reservations 866-837-4213

Reference AAW or American Association of Woodturners

INVITED DEMONSTRATORS

Alan Carter, Illinois

- Cut and reassembled bowls
- Design opportunities with suspended vessels
- Delicately turned, long stems for goblets and vessels

Steppin' Out, 2013, Birdseye maple, poplar, dye, paint, 7" × 15" × 2" (18cm × 38cm × 5cm)

Jimmy Clewes, Nevada

- Lidded bowl with texture and color
- Iridescent gilt creams and waxes to highlight wood grain
- Tool techniques, design, and wood-grain discussions in all demonstrations

Untitled, 2012-2013, Maple burl, coloring, 4" to 5" tall × 6" to 8" dia (10cm to 13cm × 15cm to 20cm)

J. Paul Fennell, Arizona

- Hollow forms: techniques, tools, and focus
- Developing a personal vocabulary
- Tools and techniques for embellishing turned objects

Wave Patterns, 2013, African sumac, 8" × 6" (20cm × 15cm)

Douglas Fisher, British Columbia

- Off-axis/off-center sculpture
- How to apply, carve, and burn designs
- Techniques for coloring wood
- Inspiration, observation, creativity

Prologue to the Past, 2013, Curly maple, 20" × 2" (50cm × 5cm)

Ron Fleming, Oklahoma

- For three different-styled vessels, one for each rotation, Ron will demonstrate the power tools he uses for each style of carving and also talk about design.

The Gathering, 2013, Sycamore, basswood, acrylics, cast silver, 17" × 24" (43cm × 61cm)

Clay Foster, Indiana

- Efficient tool use, bead making, hand scrapers, and reverse-chucking for turning a wobble pot
- Low-tech, low-cost surface-enhancement techniques
- Where do ideas come from? Where do they go?

With Lucinda.

Ripple #18, Wood, stone, paint, 8" × 21" × 5" (20cm × 53cm × 13cm)

continued

AAW 28TH INTERNATIONAL SYMPOSIUM IN PHOENIX

Todd Hoyer, Arizona

- Understanding wood characteristics for use as decorative elements on vessel forms, a slide presentation.
- Learn how to visualize grain patterns to orient open and closed vessels within a log. A trip to the Instant Gallery included.
- Watch a demonstration on turning a crotch-wood winged vessel.

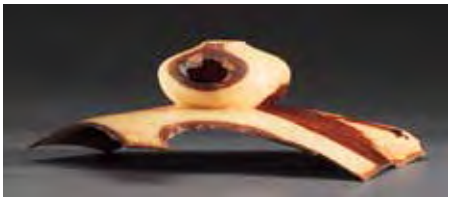
Untitled, 1986, Emory oak, 11" tall (28cm)

Rudolph Lopez, Florida

- Thin-stem, natural-edge goblet from a limb
- Natural-edge wing bowl from a crotch section
- Square-to-round bowls, vases, and hollow forms

Untitled, Elm, 2008, 4" × 10" × 6" (10cm × 25cm × 15cm)

Collection of Allen and Sherry Hockenbery



Michael Mocho, New Mexico

- Small-scale boxes made from combinations of turned components result in a variety of unusual forms. Many simple methods add detail: chatterwork, embossing, fluting, moire patterns, and spiraling. Also covered will be hand-chased threads and how to make articulating connections such as ball and socket joints.

Ikebana Box Detail, 2013, Pear, maple, rosewood, satinwood, koa, chokte kok, 20" tall (50cm)

Christophe Nancey, France

- See the step-by-step process used to create *Danaïtes* from choice of wood, turning, carving, drying, inlaying pewter, burning, and making the patina coloring. The last presentation will be visual, showing Christophe's inspirations and creations for the last ten years

Danaïtes, 2013, Heather root, pewter inlays, linseed oil, pigments, from 3" to 5" high, 2" to 3" wide, 3" to 6" long (7cm to 13cm, 5cm to 7cm, 7cm to 15cm)

Joshua Salesin, California

- Ornamental turning artistry beyond the rose engine, a PowerPoint presentation
- Learn to turn miniature vessels from a variety of palm nuts and seedpods

Pagoda Box (detail), 2010, African blackwood, European boxwood, 11" × 3¾" (28cm × 10cm)

Neil Scobie, Australia

- Gain knowledge of Neil's process of making a project from concept to finished piece. Using several prepared projects and visual presentations, learn Neil's offset-turning methods and his techniques for turning and carving with hand and power tools.

Offset Seedpod, 2013, Silver ash, black palm, 3" × 9" (7cm × 22cm)

Michael Werner, Washington

- Take in the full experience of Michael's playful and uncommon techniques of multi-center turning.

Atlantico, 2005, Figured maple, 2" × 13" (5cm × 33cm)

Calling all AAW Chapter Newsletter Editors and Webmasters

Each year, the AAW holds the Best Chapter Newsletter and Best Chapter Website contests. Closing date for applications is April 1. Winners will be announced in mid-May on AAW's website and at the symposium in Phoenix; there will be a follow-up announcement in the journal. Rules and guidelines and links to winners' newsletters and websites may be found on the AAW website at woodturner.org.

How to Apply

Best Chapter Newsletter

Email a *link only* to your four best newsletters from 2012 to linda@woodturner.org. Do not send the newsletters themselves; the file sizes will overwhelm the judges' inboxes!

The 2013 newsletter winners were Tennessee Association of Woodturners, Randy Thompson, editor; Silicon Valley Woodturners, Mike Lanahan,w editor; and Detroit Area Woodturners, Roger Meeker, editor. Read their newsletters to get an idea of what it takes to put together a winning selection.

Best Chapter Website

Email a link to your chapter's website, as well as the name and contact information for your webmaster, to webmaster@woodturner.org.

Winners of the 2013 contest were New Mexico Woodturners, Dave Stein, webmaster; Central Oklahoma Woodturners, Phil Lokken, webmaster; and Alaska Woodturners, Kristine Chase, webmaster.

For both contests, the judges will be looking for:

- Visually appealing layout
- Current content
- Content that pertains to woodturning
- Content that contributes to AAW's mission statement
- Useful woodturning and news-related information
- Sound writing skills

Hall of Fame

The first-place winners of the chapter newsletter and website competitions have been inducted into AAW's Hall of Fame, prominently honored on our website. The chapters that have won a first place in either category are not eligible for competition in subsequent years. Above all, newsletters and websites should be fun to read and provide useful information for the chapter they serve. ■

AAW Board of Directors

Call for Nominees

The AAW offers much to its members and we are looking for a few good people who can contribute something in return. Do you have the time, energy, and ideas to be a part of the AAW operations, as well as a willingness to help make it a better organization? Be a part of moving the AAW forward—run for a position on the AAW Board of Directors.

The AAW elects a volunteer nine-member board to represent the membership and move the organization forward. If you have been a member in good standing for the past three years, you are eligible. The nominating committee will select the six best candidates. From these six, members will elect three candidates to serve a three-year term, beginning in January 2015.

For information on the duties of board members, call any current board member or visit the AAW website at woodturner.org/info/bod/ for details. ■

If you are interested in serving on the board, please email the following to the executive director (phil@woodturner.org), no later than May 1:

1. A statement of intent, including qualifications and reasons for applying.
2. Letters of recommendation from two individuals who can attest to your organizational and leadership abilities.
3. A high-resolution photograph of yourself.

The nominating committee will review application materials and conduct phone interviews in late May and early June. Candidates will be presented in the journal, ballots will be sent out in the fall, and election results will be announced in late 2014.

Letters to the Editor

Send letters to editorscarpino@gmail.com. Letters may be edited for length and clarity.

Faceshields and Lathe Guards

There has been a lot written about faceshields for woodturning safety. I believe that safety message should be reconsidered. Faceshields alone are not intended to protect turners from heavy flying objects coming off the lathe. Faceshields are intended to be the last resort in safety and they provide only limited protection. The use of lathe guards should be considered safety's "best practice."

There is a longstanding and well-recognized hierarchy of hazard control:

1. Elimination (is it really necessary)
2. Substitution (alternate, safer methods)
3. Engineered controls (guards)
4. Administrative controls (education and warnings)
5. Personal protective equipment (PPE)

Far too many woodturners pay attention only to the two lowest levels of safety: training and PPE. Even with PPE, a significant risk for injury exists because the turner and other people in the immediate area are not protected from the potential high impact of a flying object. At best, the turner's PPE may reduce the severity of an injury.

Two other categories—elimination and substitution—should always be fundamental considerations. In tandem, engineering controls are essential: Control the hazard at its source with lathe guards.

The work environment and the task itself should be designed to eliminate or reduce hazards. OSHA recognizes this fact. On their website, a search for woodworking/lathes/kickbacks states, "Lathes used for turning long pieces of wood stock held only between the two centers shall be equipped with long curved guards extending over the tops of the lathes" [29 CFR 1910.213(o) (4)].

Some manufacturers sell lathes with guards; other manufacturers do not. Printing WARNING in the instructions and using warning labels on the machine are not a substitute for a lathe guard. A lathe without a guard is like a car without seatbelts. Seatbelts save lives; so do lathe guards.

Woodturners, woodturning schools, and woodturning organizations need to consider the use of lathe guards the same way we view seatbelt usage. Protect yourself and others around you by using all five levels of the hazard-control hierarchy, and turn safely.

—Larry Sefton, Tennessee

Editor's note:
The mission of the AAW is to be "dedicated to providing education, information, and organization to those interested in woodturning." Larry Sefton's letter is offered as food for thought. I do not use the lathe guard provided with my lathe, which also seems to be the case for every turner I know. The precautions I take before I hit the "on" button have made my thirty-plus years of turning safe ones. Armed with education on safe and appropriate techniques for all aspects of turning, your decisions will be well informed. In your own shops, you get to decide risk factors and comfort levels. The AAW exists to help inform your decisions for a safe, enjoyable woodturning experience.
—Betty Scarpino, Editor

New AAW Staff Member

We are pleased to announce that Kim Rymer has joined our Saint Paul headquarters staff in the new position of marketing and communications director. Kim has 30 years' experience in the areas of marketing communications, brand and reputation management, and public relations leadership. She most recently served as director of communications for the Minnesota Chapter of Volunteers of America, a nonprofit Health & Human Services organization. Kim's responsibilities will include AAW's strategic communications, the general cultivation of relationships with members and our affiliated chapters, and directing strategies that will align the AAW brand with our mission and goals. Please join us in extending our warmest welcome to Kim.

Sponsor a Demonstration Room in Phoenix

We are offering a new opportunity to express your support of AAW by sponsoring a demonstration room during the Phoenix symposium. Whether as an individual member, an AAW vendor, or as a local chapter, this is a way to visibly display your support of the AAW and our programs. We especially want to thank the Wilmington Area Woodturners Association for being the first AAW chapter to commit to sponsoring a room with their chapter's name on the door. Opportunities to participate in this fundraising program still remain. For more information, please contact Phil McDonald, executive director, at 877-595-9094 or phil@woodturner.org.

Calendar of Events

April issue deadline: February 15

Send information to editorscarpino@gmail.com

Australia

March 28–30, TurnFest 2014, Sea World and Water Park, Gold Coast, Queensland. For more information, visit turnfest.com.au.

New Zealand

October 2–5, Woodturning New Zealand International Symposium, Wesley College, Paerata (just south of Auckland). Demonstrators include Cindy Drozda, David Nittmann, Cynthia Gibson, Michael Gibson, Ken Wraight, Robbie Graham, Theo Haralampou, Shane Hewitt, Phil Irons, Richard Raffan, Joey Richardson, Vaughn Richmond, Neville and Emma Walker, and Bruce Wood. For more information, visit sawg.org.nz.

Norway

August 11–14, Woodturning Cruise. Sail along the coast of Norway while taking in woodturning demonstrations by Richard Raffan, Jimmy Clewes, Michael Hosaluk, Nick Agar, Terry Martin, Asmund Vignes, and more. Held every three years. For information, visit woodturningcruise.com.

Arizona

June 13–15, AAW International Symposium, Phoenix. Invited demonstrators are Alan Carter, Jimmy Clewes, J. Paul Fennell, Douglas Fisher, Ron Fleming, Clay Foster, Rudolph Lopez, Michael Mocho, Christophe Nancey, Joshua Salesin, Neil Scobie, Hayley Smith, and Michael Werner. Selected demonstrators will be featured in the April journal. For more information, visit woodturner.org.

Colorado

September 12–14, Rocky Mountain Woodturning Symposium, held at The Ranch, Larimer County Fairgrounds. For the latest information, visit rmwoodturningsymposium.com.

Florida

February 12–16, International Wood Collectors Society Southeast Regional Winter Woodfest Meeting, Lake Yale Conference Center near Eustis. The 30 sessions will focus on wood technology and identification, carving and turning demonstrations, and craft programs. A wood auction will be held Saturday. For more information, visit woodcollectors.org.

Hawaii

March 8–28, "16th Annual Woodturning Exhibit," Wailoa Center, Hilo. Artist reception March 27 and demonstrations March 8, 15, and 22. An online auction will be held during the exhibit. For more information, visit bigislandwoodturners.org.

Idaho

February 22–23, Idaho Artistry in Wood Show, Boise Hotel and Conference Center. Competitors from all skill levels display a variety of woodworking items. The show features demonstrations, vendors, raffles, auction, and banquet. For information, entry forms, and discount coupons, visit idahoartistryinwood.org.

Illinois

August 15–17, Turn-On! Chicago 2014 symposium held at The Conference Center at the University of Saint Mary of the Lake in Mundelein. This event includes featured demonstrators Trent Bosch, Binh Pho, Nick Cook, Andi Wolfe, Dick Sing, Alan Carter, Lyle Jamieson, Barry Gross, Steve Sinner, and Jason Swanson. Also included are hands-on events, tradeshow, onsite meals, banquet, and auction. For full event information, visit turnonchicago.com.

Minnesota

Ongoing exhibit: "Touch This!" featuring fascinating facts about wood and woodturning, as well as pieces you can touch. For more information, visit galleryofwoodart.org.

New York

March 29 and 30, Totally Turning Symposium, Saratoga Springs, held at the City Center Complex concurrent with the NWA Woodworkers Showcase. Presenters include David Marks, Nick Agar, Dale Larson, Mark Sfirri, Alan Carter, Kurt Hertzog, David Nittmann, Lyle Jamieson, Steve Sinner, Paul Petrie, Joe Herrmann, Rick Angus, John Franklin, and Giles Gilson. Find out more at totallyturning.com.

Ohio

October 3, 4, Ornamental Turners International biennial symposium, Hyatt Hotel in Columbus. There will be practical, theoretical, and historical lectures as well as live demonstrations on ornamental turning. For more information, visit ornamentalturners.org.

South Dakota

June 21, The Siouxland Woodturners will celebrate their 10th anniversary with a one-day symposium featuring Alan Lacer, held at the Community Life Center in Sioux Falls. For more information, visit siouxlandwoodturners.org.

Cliff Johns, *Holo Hula (Pole Dancer),* 2013, Bermuda Cedar, 42" × 10" (107cm × 25cm)

People's Choice and Artists' Choice Awards, Big Island Woodturners Show and First Place Sculpture, Hawaii Forestry Industry Association Show. *Holo Hula* was selected for the Art in Embassies Exhibit, to be showcased in the residence of the U.S. Ambassador in Canberra, Australia.

Photo: Isla Harmon

Utah

May 15–17, 35th Annual Utah Woodturning Symposium, Utah Valley University campus, Events Center, Orem. This year's theme will be "A Tribute to Dale Nish." Demonstrators include: Kip Christensen, Hans Weissflog, Jakob Weissflog, Art Majerus, Ray Key, Mike Mahoney, Steve Gray, Stuart Mortimer, Bonnie Klein, Kirk DeHeer, Bill Ooms, Nelson Cassinger, Al Stirt, David Ellsworth, Kurt Hertzog, Jerry Kermode, Glenn Lucas, Don Russell, Tom Sorenson, Keith Tompkins, Richard Raffan, Rex Burningham, Joe Wagner, and more. Additional information is available at utahwoodturning.com.

Virginia

May 2 and 3, 2nd Annual Mid-Atlantic Penturners Gathering, Woodcraft Store, Richmond. Demonstrations, vendors, contests, and door prizes highlight the event. Visit midatlanticpen.com for a review of the 2013 event and to learn more about the organization.

Washington

March 22, A Day With Cindy Drozda, Anacortes First Baptist Church, Anacortes, sponsored by Northwest Washington Woodturners. Cindy Drozda will demonstrate lidded bowls and discuss tools, sharpening, and techniques for coloring wood. For more information, visit nwwwt.org or email Rick Anderson at info@nwwwt.org.

July 26, Creativity in Woodturning, seventh annual symposium, Lacey, sponsored by the Woodturners of Olympia. Featured demonstrator is Richard Raffan from Australia and local demonstrator is Nick Stagg from Oregon. For more information and to register for hands-on classes with Richard, visit woodturnersofolympia.org. ■

Turners Without Borders Continues to Reach Out

In 2013, Turners Without Borders (TWB) continued to develop its outreach program to represent the AAW internationally and to develop turning cultures across the world. Last October, Andi Wolfe represented TWB at an International Wood Culture Society (IWCS) conference in Changsha, China, while in November, Terry Martin once again demonstrated in China as part of an IWCS event in Nanning that celebrated links with the South-East Asian region.

In March 2014, seven AAW members from different countries will be demonstrating at the IWCS World Wood Day in China. This will be the first-ever event in China to host a large group of international turners. The IWCS is concurrently partnering a wood-art collaboration with Rongsheng Art Village and several AAW members will be involved.

IWCS and AAW are partnering to set up a woodturning program for children who are deaf at Wenzhou Special School, China. Also, from 2014, TWB will develop a Spanish language outreach, starting with the FERINART festival in San Juan, Puerto Rico, May 2–11. Dynamic AAW member Carmen de la Paz will be demonstrating and giving a five-day workshop to local wood artists. TWB is sourcing material and logistic support for both of these programs that underpin expansion of the AAW presence around the world. ■

—Terry Martin, Chair of TWB

IWCS staff and Terry Martin enjoyed their visit to Wenzhou Special School where they met the teachers and deaf students. In 2014, a turning program will be developed at this school.

The welcome in China is sometimes amazing. At the Rongsheng Art Village in Donxiang, the large red banner said, "Warmly Welcome...Terry Martin, woodturner in American Association of Woodturners to visit here!" We were treated as very special guests. (L to R) Guan Ganming, General Manager of Rongsheng Art Village; Su Jinling, General Secretary, IWCS; Mike Hou, Executive President, IWCS; Yu Rongsheng, Chairman of Rongsheng Art Village Board; Terry Martin; Liu Hui, Director of Department of Promotions, Donxiang Government, Jiangxi Province.

EOG Helps Montanans Turn

Last year, the Great Falls Woodturners Club (GFWC) conducted a learn-to-turn event for youngsters in our community at the club's meeting venue at the Great Falls College MSU carpentry shop. The club invited students to join club members for a woodturning educational class to launch the youngsters into the world of woodturning.

Eight ready-to-learn boys and girls from the local high school and home-school programs attended the session. A club member started by presenting a demonstration on turning beads and coves, emphasizing how to prepare the wood for mounting and to use appropriate tools and safety gear. Then a mentor partnered with each student for a hands-on experience. Our club, through an Educational Opportunity Grant (EOG), purchased the lathes used by the students; club members brought in additional lathes.

Each young learner successfully turned a prepared stick into a simple bead-and-cove rod to get the sense of the project. When the students were feeling comfortable with the lathe and turning tools, another club member demonstrated how to turn a pen starting with a pen blank. The students then returned to their lathes, and mentors coached and assisted each learner to turn his or her own pen.

After students completed the shaping of pens, they were partnered with a club member to assemble the turned masterpieces into functional pens. Club members were impressed with the students' creativity—one student even incorporated beads and coves into his pen.

Students, coaches, and parents reveled in the students' creations. Club members are proud of these potential future turners! All the youngsters seemed to take great satisfaction in their success in transforming a chunk of wood into a functional, beautiful object.

We appreciate the generosity of AAW's EOG program for making this woodturning event possible for our community. ■

—Sam Sampedro

Mentors from the Great Falls Woodturners Club helped students turn pens.

A young student concentrated on woodturning techniques.

Tennessee Chapter Receives an EOG

The Tennessee Association of Woodturners (TAW) 2013 EOG allowed our club to continue supporting the woodturning workshops we previously developed with Narrow Gate Foundation in Williamsport (see *AW*, vol 28, no 2). We were able to provide new drive centers, six spindle gouges, six detail gouges, abrasives, a Rikon disc sander, and plywood to build steady rests.

TAW volunteers assist in leading Narrow Gate students through a rotating cycle of woodturning classes that include spindle turning, bowl and platter turning, and a turned chalice. Open turning sessions are available for Narrow Gate students to enhance their turning skills. TAW volunteers also assist with other woodturning classes offered in the Narrow Gate workshop. Narrow Gate recently upgraded the woodturning facilities to include six fully equipped Delta midi lathes.

TAW members have provided additional support by volunteering hours to build custom woodturning storage cabinets. These heavy-duty cabinets are mobile and have ample storage space for tools and accessories.

We are in our third year of the TAW and Narrow Gate partnership and have seen this program continue to grow and thrive. Students who had never spent time on a lathe have successfully turned their first bowls and platters. Some of the first graduates of the program are now helping teach beginning turning classes.

In addition to providing support and instruction in the craft of woodturning, we also mentor and provide positive life experiences for these young men. We are modeling the importance of creating something, which is a foundation of our volunteer efforts.

The TAW and Narrow Gate Foundation sincerely appreciate the financial support of the AAW to help us continue our relationship. ■

—Jeff Brockett

Testimonials from students:

It's awesome that a simple block of wood can become a piece of art, a new creation. I'm thankful to have instructors who take the time to teach us. The TAW has taught me that listening to and following instructions will have a rewarding payoff. —Colton

Having the opportunity to work in the woodshop has been a huge blessing. It's been amazing to learn how to express myself through woodworking. —McKenzie

Not only have I learned about woodturning, I've learned the value of working with my hands. —Connor

Thanks for all you do. The guys, including myself have been encouraged and blessed with a gift we will possess for the rest of our lives! —Eric

TAW members built lathe stations.

Narrow Gate students display items purchased with EOG funds.

Bringing Woodturning to the Blind

Allen Miller and Andi Sullivan

During AAW's 2013 international symposium in Tampa, and in coordination with AAW's Accessible Lathe Program, we organized a program for the Tampa chapter of the Lighthouse for the Blind, a nonprofit organization. With the assistance of Lighthouse staff members Sheryl Brown and Chelsea Bridges, we had eight blind individuals from the Lighthouse attend a session in which they were able to handle turned objects. Afterward, with individual assistance, they each successfully turned a pen in the Youth room, thanks to the gracious help of Larry Miller, Joe Ruminski and several volunteers. The response to this program was fantastic. The attendees were extremely enthusiastic and are eager to continue their woodturning experience.

To develop an ongoing woodturning program at the Lighthouse for the Blind in Tampa, we enlisted the help of donors to supply a lathe, sufficient tools, supplies, and funds to get the program started. Since this was to be the first program to provide woodturning instruction to blind and visually impaired individuals, we had to overcome several barriers.

We readily obtained the enthusiastic support of the Lighthouse and they provided a suitable work area. The Lighthouse became an AAW chapter to provide appropriate insurance coverage and developed consent and release documents in Spanish and English for our volunteer instructors. New students read, or have read to them, the consent forms prior to turning, and a chapter meeting is held prior to each session.

Once everything was in place, we had our first session with six students. Since then the response has been more than we had imagined. We initially

Carol Reyes "seeing" with her hands a small box made by Andi Wolfe.

Photo: Andi Wolfe

Willie Nelson Jr. contemplates John Wessels' piece.

Photo: Andi Wolfe

José Rilo and his granddaughter Rachel examine Andi Wolfe's textured box.

Photo: Andi Wolfe

Several members of the Lighthouse group visit the Instant Gallery.

Photo: Andi Wolfe

Allen Miller helps Carol Reyes to turn her own pen.

Photo: Andi Wolfe

Andi Sullivan explores J. Paul Fennell's deeply textured hollow form.

Photo: Malcolm Zander

planned to have one session a month and now have two. More than 40 students have participated and there is a waiting list.

We are still very much in a learning phase. Our students have varying disabilities, which influences our teaching program. In addition, some of our repeat students are advancing, while still taking classes with beginners. We try to tailor our instruction to each individual, to keep it interesting for everyone.

We primarily have been turning pens; there is a wide variety of experience that can be gained in this activity. The ongoing challenge is to allow the six students per session adequate time for practice. Important in this type of teaching is continuity of instruction—students do better with only one or two instructors. We hope to recruit turners from nearby local chapters to assist, with the long-term goal of teaching someone at the Lighthouse to become the principal instructor.

Our aim is to set up a woodturning program at the Lighthouse for the Blind in each city where the AAW's symposium is held. For Phoenix, we will again have a panel discussion, interactive tactile session, tour of the Instant Gallery and hands-on turning for the visually impaired. We intend to raise sufficient funds and sign up local volunteers to run a woodturning program at the Phoenix Lighthouse for the Blind. Contact Allen Miller and Andi Sullivan at admiller923@gmail.com if you would like to help.

These Tampa Lighthouse activities were videotaped by Mike Hou from the International Wood Culture Society. See http://vimeo.com/groups/205403/videos/81100469 ■

A pewter-and-red-ivory bowl by John Wessels is a tactile magnet for exploring fingers.

Photo: Andi Wolfe

Mary Graham turns her first pen under the instruction of Joe Ruminski.

Photo: Andi Wolfe

Willie Nelson Jr proudly shows his first turned pen.

Photo: Malcolm Zander

Don Bessicks assists Mary Graham in polishing her pen.

Photo: Andi Wolfe

Do you know someone with a disability who might get enjoyment out of woodturning? There are a number of such people in the AAW membership, from partially or minimally sighted persons to turners in wheelchairs. For many of them, woodturning has turned their life around, and their stories are inspiring.

The AAW now has a new discussion sub-forum where members wishing to help disabled folks learn woodturning may interact with those who could use their assistance. Those with disabilities of any kind may tell their stories, and seek and find assistance with turning. This sub-forum is available at aawforum.org/vbforum/forumdisplay.php?f=20.

The sub-forum is also linked to the new AAW program, Woodturning Beyond Barriers, which is developing resources and approaches for teaching woodturning to those with disabilities. See woodturner.org/accessibility/index.htm.

Visit these two websites to learn how you can help a disabled person in your area discover woodturning. It can be a rewarding experience for you both.

Tips

Band clamp for lathe

I like to use my lathe as a stationary work-holder to do detail work on turnings. The lathe serves as a third hand, holding the workpiece securely, allowing me to use both hands.

I clamp the spindle using a band clamp over the spindle (or chuck) and around the bed of the lathe. I tighten the strap sufficiently to prevent the workpiece from moving, but not so tightly that I cannot easily reposition the work as needed. When I am ready to work on another section of my piece, I just grab the strap and give it a little tug.

Caution: To be extra careful—if you think you might forget the clamp—unplug the lathe before clamping the spindle.

—Wes Jones, Georgia

Share your turning ideas!

If we publish your tip, we'll pay you $35. Email your tips along with relevant photos or illustrations to editorscarpino@gmail.com.

—Betty Scarpino, Editor

Fingernail-grind jig

Using the fingernail jig with the V-notch rod is a balancing act—the bottom of the jig wants to move all around and I sometimes get faceted grinds. My solution was to use an 18" (46cm) length of ¾"- (19mm-) square tubing. Using a V block, I drilled a 5⁄16" (8mm) hole. I used a 5⁄16" cap-head bolt that uses an Allen wrench. I drilled out the hex socket with a ⅜" (10mm) drill bit. A friend tack welded the bolt, but you may use JB Weld, or even a nut to hold the bolt.

I then lightly ground the sharp edges on the leg of the fingernail jig. This allows smooth movement and better control to achieve a consistent grind.

Alternately, you could turn the V-notch bar over and drill the hole there. That way you don't need to buy a new piece of steel. Mike Moore pointed that out when I sharpened his gouge, using my new adapter bar.

—John Kaner, Alaska

Finish-drying stands

After applying finish to a woodturning, the item has to be placed somewhere to dry on something with minimal surface contact. I have made drying stands from dowels, nails, wires, and similar objects, but with mixed results and satisfaction. Items often did not balance correctly, or there was too much surface contact, or whatever I had set up was not the proper size for what I needed. In addition, any system I used took up too much storage space.

All of these problems disappeared when I began using short lengths of bandsaw blades as drying stands. Just cut an old bandsaw blade into short sections using tin snips or wire cutters. Bend those segments into V shapes, and arrange the segments as needed to support your objects. The points of the bandsaw blades provide minimal contact with the wood, yet the V's are stable and can be placed in any configuration and spacing required. Dozens of these stands can be stored in a small box.

Another advantage of this application is finally discovering a reason to save all those old bandsaw blades that are too dull to use but too good to discard.

—Hershel Miller, Tennessee

Avoid dents when buffing

How many times have you been buffing a turning when the wheel rips it out of your hands and smashes it into the bed of the lathe, leaving a dent in the wood? I have had it happen one too many times and decided to do something about it.

I took kitchen-shelving material and taped it onto the leading edge of the lathe bed. (I also tried pipe insulation, which worked fine.) After taping on the kitchen shelving, I buffed a fishing rod handle and, sure enough, the wheel ripped it out of my hands and it banged into the edge of the lathe bed. I picked the piece up off the floor and guess what? No dents or nicks.

—Dale Peterson, Wisconsin

Two-tier tool storage

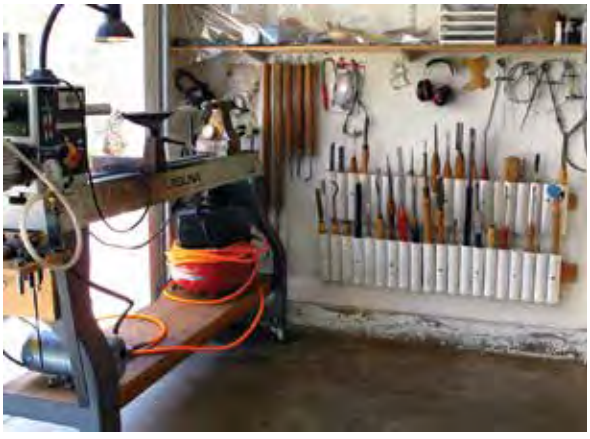
Keeping two cars in the garage brought challenges when I began woodturning. I had only 18" (46cm) where I could store my lathe. Having a lathe on wheels is less than ideal, but it works well. After removing both cars, I roll my lathe 90 degrees out from the wall, and my gouges are within easy reach to my right. I am tall, so the added height of the heavy-duty wheel casters put the live center at elbow height.

A wall proved to be the answer for storing gouges. I ripped two boards with a slight trapezoid angle to ensure the PVC tubes lean away from the wall, allowing the bottom row to clear the top row. Also, with the top row angling outward, gouges easily clear the shelf above and provide room to hang calipers, glasses, and ear protection. Both backboards are anchored to the wall studs by three long wood screws.

I cut three 2"- (5cm-) inside-diameter PVC pipes into 10"- (25cm-) length tubes. I drilled a ⅜" (10mm) hole, 1" (25mm) from the bottom, directly through the opposite sides of each tube, and I then aligned twenty tubes side-by-side, hole-to-hole in order to slide a ¼"- (6mm-) diameter steel rod through the holes, connecting twenty tubes together. The rod creates a bottom in each tube, upon which the tool handles sit. The narrow steel rod also allows shavings to fall through to the floor. I then placed the tubes side-by-side flat on the garage floor (over newspaper), and used PVC clear cement to glue the tubes together along their lengths. After the glue cured, I turned the single block of tubes over and glued the reverse side for added stability. The tubes became one solid row.

To secure each row of tubes against the horizontal boards, I drilled a ⅜" (10mm) hole on the front portion of the tubes in the upper half of every fourth tube. Through those holes I then drilled ⅛" (3mm) holes through the other side. Using a magnetized screwdriver to hold the mounting screws, I pushed them through the larger holes to reach the smaller holes. Once in, the screwheads securely hold the tubes' inside edge against the wooden board. Because each tube is securely glued to the others, not every tube needs to be anchored.

—Dennis L. Richardson, California ▸



TIPS

Remove a tailstock easily

Removing the tailstock from my Powermatic 3520 by myself is not easy—it is heavy. And, I remove and reinstall the tailstock often. A swing-away platform is too pricey and would get in the way when turning over the end of the bed.

My solution was a cart with wood ways onto which I could slide the tailstock and wheel it out of the way. The wood ways are ½" (13mm) maple and can be easily replaced when worn *(Photos 1, 2, 3)*.

I also have an 18" (45cm) bed extension that weighs 80 lbs (36kg), which is impossible for one person to install. Since I plan to use the extension in only the lower position, I was able to configure the cart to hold the extension in position for mounting and store it when not in use *(Photos 4, 5, 6)*. The cart has a ½" maple block that the ways of the extension slide onto. The block is adjustable for angle and height using five-star threaded knobs and carriage bolts through the block and top of the enclosure. Installing or removing the extension is now a one-handed, fingertip operation.

The bed extension mounts either in line with the bed or below the ways to create a bowl lathe with a 30" (76cm) swing. The bed extension comes with an extension for the toolrest so all the rests can be used with the banjo in the lower position. I could leave the extension in the lower position all the time, but using the lathe is more convenient if removable parts can be stored out of the way.

An added bonus is five new shelves and some magnetic strips on the sides of the cart to keep chuck keys, toolrests, and accessories close at hand (gouges, scrapers, and other tools ride in their own cart). The cart has four full-swivel casters to make it easy to line up with the lathe. The casters all lock, but that's just overkill.

—Andrew Kuby, Illinois


1


2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4


5


6

What to Do Immediately After a Hand Injury

Woodturning projects require planning and preparation before the first cut is even made. You have planned how to get the job done safely and efficiently; having a well-thought-out plan when things go wrong is just as important. The majority of woodworking injuries involve the hands; any laceration that appears deep warrants a trip to the emergency room (ER). Signs of a serious injury:

- *Arterial injury:* Blood actively pumping from a wound, a large amount of swelling around the injury, and pale and cool skin beyond the injury.
- *Nerve injury:* Numbness or weakness of the hand or finger beyond the area of injury.
- *Tendon injury:* Loss of movement or pain with active motion.
- *Broken bone:* Pain, swelling, bruising, and sometimes difficulty moving the affected joint.

Following a step-wise guide for what to do immediately after an injury will help maximize a favorable outcome:

Have a well-stocked first-aid kit. Gauze pads of various sizes, gauze rolls, tape, ACE wrap, scissors, and Ziploc bags should be included. Keep a phone available in your workshop.

Apply proper wound care/first aid. When a serious injury occurs, it is important to sit down and avoid panicking. Bleeding and fainting are the only immediately life-threatening complications of a hand injury. Call an emergency contact or 911. Reach for your first-aid kit and take a good look at the injury. If a wound is actively bleeding, apply gentle pressure with a clean gauze or cloth. A tourniquet is usually less effective than manual pressure and has a higher chance of worsening the injury if applied incorrectly. If you feel dizzy or light-headed, lie down after you have called for help and unlocked the door for emergency medical services.

If the bleeding is not severe and you are not feeling dizzy, rinse the wound with tap water, especially if it is full of wood dust and dirt. Do not attempt to remove any clotted blood as this may cause the wound to bleed further. Do not attempt to remove any particulate matter that does not easily come off with water. Do not use astringents or chemicals such as alcohol or hydrogen peroxide. Wrap the affected body part in a roll of gauze or clean cloth. The idea is to make the dressing snug enough to provide some compression but not so tight it restricts blood flow.

If the injury involves a completely severed part, rinse the severed part in water, wrap it in a clean damp cloth or gauze, and place it in a sealed Ziploc bag. Place the bag in a container of ice. If this is not possible, use cold water instead of ice. Doing so will help preserve the part for possible reattachment. Do not place the severed part in direct contact with ice. Try to save even the smallest piece of tissue, including skin and nails.

If the injury involves a partially amputated part, do not attempt to force it back into place. Wrap the part in clean gauze and apply a dressing.

Know your medical history/ keep copies of medical records handy. Medical history includes knowing your (1) medical problems, (2) previous surgeries and injuries, (3) current medications, (4) drug allergies, and (5) tetanus immunization history. Store a folder containing this information in a readily accessible location.

Do not eat or drink anything. Most non life-threatening surgeries are performed on an empty stomach (usually eight hours after a meal) in order to minimize complications from anesthesia. Many patients with hand injuries have had surgery delayed because they have had something to eat or drink on the way to the ER.

Know what to expect. In the ER, a triage nurse will be the first person to evaluate you and determine the priority of your condition. Give the pertinent facts, including the time of the injury, the amount of bleeding, and what was done to the wound. Depending on the severity, the wait can take hours. Again, it is important not to eat or drink anything. A doctor will evaluate you and determine if further studies such as X-rays are needed, and whether consultation with a surgical specialist will be required.

Always think safety. Keep your eyes, brain, and hands in the same place. ■

—Joshua Choo M.D. and Morton Kasdan, M.D.

Vernier Calipers

Measure Up!

Roger Zimmermann

A collection of vernier calipers, including dial and digital calipers.

A vernier caliper is an indispensable part of my woodturning toolbox. In my teaching of woodturning I have found most people are missing out on the use of this simple, but handy measuring device. There are two aspects of the vernier caliper that, once understood, will take the mystery out of the tool. Once mastered, it will become your go-to measuring device.

Vernier calipers range in price from a couple of dollars to about $30. Each model has its pluses and minuses, but they all perform the same measurements. Some read only in fractional inches, some have both inch and metric scales, and some will provide a digital readout in either system.

Reading the scales

Good calipers are capable of precise readings, often to 0.001" (0.025mm), but any degree of precision requires learning to interpret the vernier scale. The $2 plastic vernier caliper in *Photo 1* has both English (top) and metric (bottom) scales, with an inner and outer scale for each type of readout. The bottom line of the English scale reads 1/16" increments, while the upper scale reads 1/128" increments. For a reading to the nearest 1/128", use the bottom line of the scale to measure to the nearest 1/16", and add to that reading any additional length in 1/128" increments. For example, the zero mark of the short (1/128") vernier scale in *Photo 1* aligns just to the

right of the 9/16" mark on the inner scale. This means the dimension is slightly more than 9/16" (or 72/128"). Reading along the short (1/128") vernier scale again, we see the "6" mark most closely aligns with a mark on the inner scale, meaning the actual measurement in this example is 72/128" + 6/128" = 78/128" or 39/64". The metric scale operates in the same fashion, but relies on the bottom two scale lines.

Practice a little and you will quickly find accurate measurements are easier than my description leads you to believe. Helpful resources on the Internet include Wikipedia's entry for the "vernier scale," with animated examples of caliper measurements.

Enter the digital age and you can get a vernier caliper that takes the math out of the equation and gives you a direct readout in decimal or fractional inches, or metric—just make sure to keep a spare battery on hand! I find the fractional vernier calipers to be unnecessarily difficult and recommend either a mechanical one reading in thousandths or the digital calipers, as they are relatively inexpensive.

While reading the vernier scale is a useful skill, calipers in the woodturner's shop are often used to transfer direct measurements. Sizing a tenon to fit into a predrilled or turned recess can be accomplished by setting the caliper opening to the diameter of the recess, and transferring the dimension to the tenon, bypassing the math altogether.

Using the vernier caliper

Vernier calipers employ four methods to measure the following dimensions:

- The large jaws measure external dimensions, such as the diameter of a spindle or tenon *(Photo 2)*.
- The small jaws measure internal dimensions, such as the inside of a lidded box, mortise, or drill hole *(Photo 3)*.
- The protruding piece at the tail end measures depth or length, such as the length of a tenon or depth of a bowl *(Photo 4)*.
- The shoulder on the small upper sliding jaw measures the depth of a step, offset, or recess such as a rabbet or groove *(Photo 5)*.

Both sets of jaws have sharp points—especially on metal calipers—and attempting to use the calipers on spinning stock may result in a dangerous catch when a point digs into the rotating wood. To use calipers as a sizing gauge for rotating spindles, the points must first be ground off the jaws. The calipers should never be used for internal measurements on spinning stock; friction generated between plastic calipers and spinning stock may melt the calipers. For the safest practice, turn off the lathe when using calipers.

Vernier calipers have many applications in a turner's shop, including fitting lids, turning down a pen blank to perfectly match components, making snug-fitting mortise and tenon joints, and determining the depth of bowls and boxes. Add this handy tool to your shop and watch the quality of your turnings jump up a notch! ■

Roger Zimmermann is the president of the Wisconsin Valley Woodturners. A retired engineer, he has been turning for more than 35 years. You can email Roger at Latheybum@aol.com.


1
Plastic calipers, set to 39/64".


2
The outside jaws measure external diameter.


3
The internal diameter is measured with the caliper's smaller inside jaws.

4
A depth probe is connected to the sliding jaw and cleverly provides a precise way to measure length or depth.

5
The sliding inside jaw is slightly offset, providing a step-measurement option.

HEAVY-DUTY TOOL HANDLE

Jeff Kieserman

Most of our go-to turning tools are sold with wood handles, and even when turners make their own handles, they are naturally attracted to wood. Although wood handles are time-tested and work quite well, many turners are finding that metal handles transmit less vibration to the turner, resulting in a better cut and less fatigue at the end of the day. I have made several handles out of standard plumbing pipe and aluminum round stock. Length and diameter can be customized to accommodate body size and turning style. For me, a long tool handle lets me brace the tool against my body and use body motion to achieve flowing lines and clean, easy cuts. My turning technique is influenced by my friend and turning teacher, Robert Jay, a former Tai Chi instructor. Various body-movement techniques adapted from the art of Tai Chi encourage smooth and consistent cuts that require minimal physical effort.

The handle in this article is designed for a ⅝" (15mm) bowl gouge. I have made smaller versions—smaller in length and diameter—and each performed well.

Plumbing pipe is available from home-improvement centers. Choose the diameter that feels the best in your hand, but make sure the inner diameter (ID) of the pipe accommodates the diameter of the tool shank plus the aluminum insert. I have used up to 1"- (25mm-) diameter black pipe, ranging from 12" to 30" (30cm to 76cm) long.

Round aluminum stock for a handle insert is available from metal distributors and industrial suppliers, or can be ordered online from MSCdirect.com or speedymetals.com. The stock should be about ¼" larger in diameter than the pipe's outer diameter (OD), which will allow a comfortable transition between the cushioned grip and the exposed end of the tool insert.

For the aluminum insert, I use an overall length of 4" (10cm), with half the length inserted into the handle. Some of my handles are dedicated to one tool, but each end of the handle can be drilled to accommodate different-sized tools. Be sure the insert, once drilled for the tool, has enough wall thickness for the necessary strength.

Making the handle

Aluminum can be turned and drilled using a wood lathe. For this project, a drillpress is also handy and a hacksaw is essential. To turn the aluminum, the lathe should run at moderate speeds while turning and finishing. I have tested several turning tools to shape the aluminum, including a skew chisel, a bowl gouge, a parting tool, and a round-nosed scraper. Each tool cuts as though it was up against dense wood, so sharpen tools accordingly.

Once turned, drilled, and tapped, the aluminum insert is ideally driven into the pipe with a mallet, requiring no epoxy. But if a precise fit cannot be achieved, it is better to err toward a slightly undersized insert and a small amount of two-part epoxy to secure the insert in the pipe.

If you are starting with a handled tool, you will need to remove the original wood handle from your tool. The handle can sometimes be dislodged by carefully hammering the top of

1

The blackened chamfer of the aluminum stock helps determine the correct diameter to fit the ID of the pipe. A center drill is shown, poised to drill a starting hole.

2

Turn the aluminum to size a short section at a time. Stop the lathe to test-fit the pipe as you go.

The stock has been drilled to maximum depth on one end and flipped in the chuck for final sizing, shaping, and drilling.

The aluminum insert is drilled, tapped, and two setscrews installed. Choose setscrews that will seat below the surface when tightened.

The butt end of a handle for a single-purpose tool.

the handle around the base of the tool steel. An open-end wrench, closely surrounding the tool and covering most of the handle, can often be an aid in hammering the handle loose. Another option is to cut off the ferrule with a hacksaw, and split the handle off with a wood chisel. Be sure to protect your tool steel by wrapping it or use soft jaws in a vise.

Use a hacksaw to cut the pipe to length while also removing any threads from the pipe ends. Remove burs with round and flat files. Cut the aluminum stock to length and mount it into a four-jaw chuck with approximately 2½" (6cm) exposed for cutting. Long-nose jaws work well in this application.

To size the aluminum to fit the pipe ID, turn a chamfer on the end. Blacken the chamfer with a marker. Spinning the lathe slowly by hand, make contact between the aluminum and the pipe. This will transfer the ID of the pipe onto the aluminum stock *(Photo 1)*. Slowly work the end of the aluminum down to the ID of the pipe. Once a small section fits well, continue cutting down the remainder of the 2" length. Periodically test for fit with the lathe ***off*** *(Photo 2)*. Square the shoulder of the insert with a parting tool.

With the lathe running slowly, drill a hole in the aluminum to receive the tool shaft. Machinists use a cutting lubricant during drilling operations to reduce friction and extend the life of cutting bits. Retracting the drill bit every inch or so and adding a few drops of 3-in-1 household oil or motor oil will suffice for the occasional metalworker. *Photo 1* shows a center drill ready to start establishing a center hole. Next, switch to a standard twist drill bit to complete drilling. A center punch may be used in lieu of a center drill to prevent the twist drill bit from wandering, but the result can be less precise.

Flip the aluminum end-for-end and remount it into the chuck to finish the opposite end, sizing and tapering this end for a finished appearance *(Photo 3)*. You may need to drill this end as well, as standard drill bits are often too short to drill the entire 4" length. Again, start the hole with a center drill or punch.


Jeff Kieserman holds his new, handled tool.

Drill and tap the exposed end of the aluminum insert for setscrews to hold the shaft of the tool—this is where a drillpress comes in handy—and install the end into the pipe *(Photo 4)*. Duplicate the turning procedure to make an insert for the opposite end of the handle. This handle is dedicated to one gouge, so I made a stoppered end *(Photo 5)*.

For additional weight and vibration dampening, experiment with filling the handle with steel shot. To accomplish this, you may want to glue a plug (wood is fine) into the handle to keep the shot from falling out when the tool steel is removed. Just remember to insert the plug deep enough to avoid interference with the tool shaft!

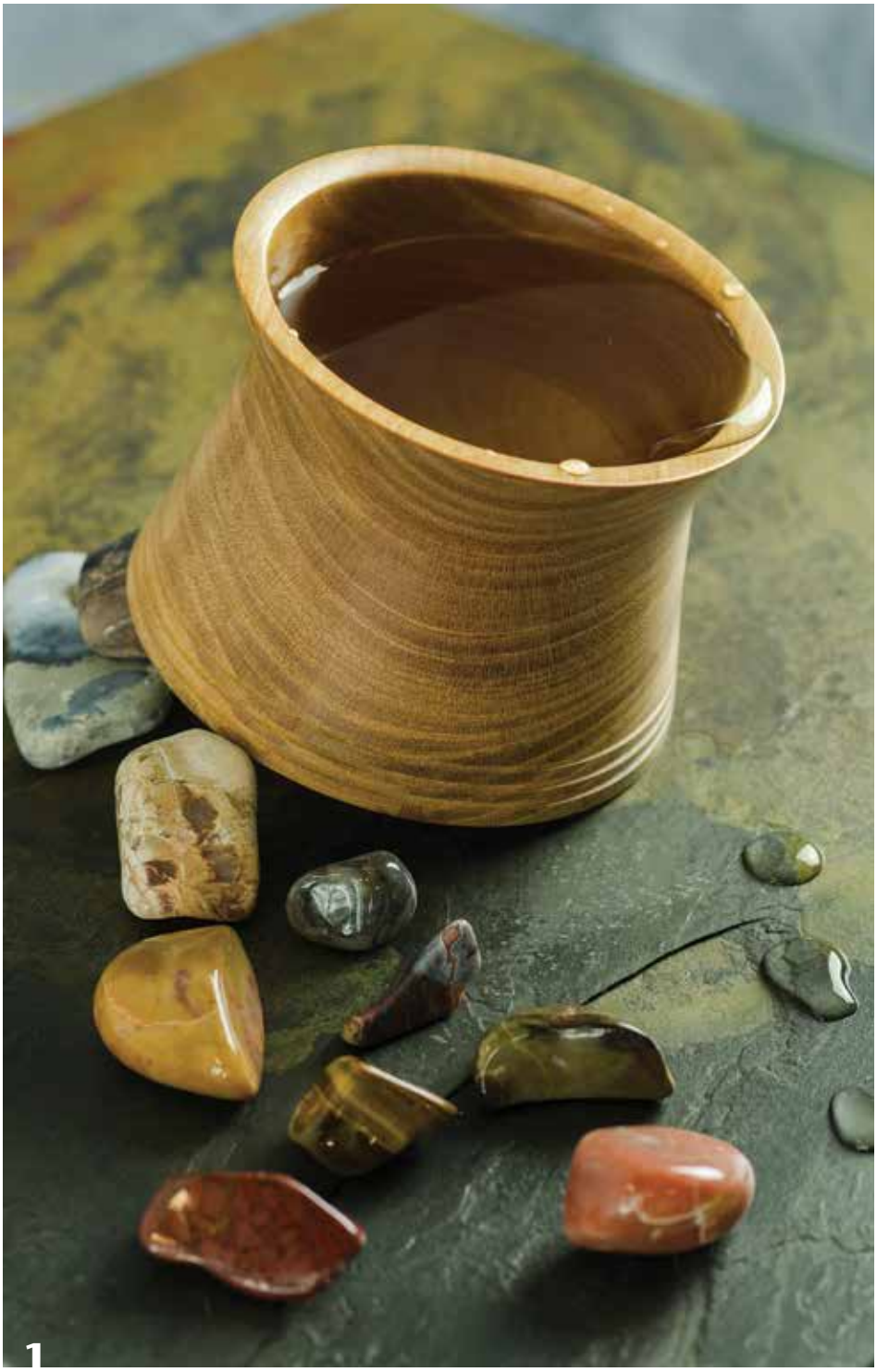
I like to cover my handles with bicycle handlebar wrap for a secure, insulated, and cushioned grip. The wrap is available from sporting goods stores or bicycle shops in various textures, materials, and colors.

Enjoy your stable, weighty, and comfortable handle! ■

Jeff is a member of DelVal Turners in Moorestown, New Jersey. Please feel free to contact him at jkck616@gmail.com.

STABILIZING WOOD:
An Alchemist's Guide

Don McIvor



1

Medieval alchemists must have enjoyed great job security. They spent their days looking for a way to turn base metals into gold or on the alternate career track, in pursuit of a universal elixir. Plenty of woodworkers might argue that using chemicals to change wood's inherent properties can be dismissed as modern alchemy. But the wood products industry has invested decades of research in pursuit of ways to change—marketers would say enhance—the properties of wood, and turners can benefit from their efforts.

Heat (an idea that is thousands of years old), pressure, various waxes, epoxy and plastic resins, and a laundry list of chemicals and bulking agents have all been unleashed on wood with varying degrees of success to make it harder, stronger, more stable, resistant to decay or insect attack, resistant to chemicals or abrasion...the list goes on. For turners, the list of possibilities is somewhat shortened as concerns like insect attack or bending load limits rarely cross our minds.

One treatment most of us are familiar with is polyethylene glycol (PEG), which has long been available as a means for treating green wood and preventing loss during the drying process (*AW* vol 15, no 1). Epoxy resin, another trick in the alchemist's bag, is most often used as a surface treatment or void filler, but can also be used to impregnate a turned piece for durability or to enhance light transmission (*AW* vol 27, no 6). Stabilizing wood by impregnating it with liquid acrylic is an idea that has also been around for at least two decades, but the technology lay primarily in the purview of

Wooden service items exposed to cycles of wetting and drying present a chronic challenge. Weighed before and after holding water for 14 hours, this cherry vessel, stabilized before finishing with cyanoacrylate, gained 1 gram and showed no sign of distortion or staining.

A pair of shaving brushes turned from stabilized spalted maple.

This piece of holly had great promise but was so soft from spalting it was a challenge to get an acceptable surface finish. Stabilizing bulked the wood to the point where it would even accept threads.

The threaded spalted holly finial adds visual interest to this small Indian rosewood urn. There is no finish on the finial, just a sanded and buffed surface.

companies with the space and capital to conduct the process. For a number of reasons, the process can now be scaled down for the home shop, opening some creative opportunities for the turner.

Straightforward process

The process of stabilizing wood is straightforward, although it is a little finicky and demands attention to detail. Because the physical changes from impregnation occur at microscopic and molecular scales, understanding what stabilizing accomplishes may help you attain better and more consistent results.

Wood as a substance has two basic components, cell walls and the space within the cell walls known as the lumen. While a tree is alive, the lumen provides space for the movement of water. After the tree dies, moisture escapes from the drying wood, leaving behind the now-empty space in the lumens. The stabilizing process takes advantage of the lumens, filling the space with a liquid compound, which is then hardened through heating or chemical conversion. To be effective, the compound used to impregnate the wood needs to have a sufficiently low viscosity to be drawn into the voids. Here comes the modern alchemy part.

The most commonly used ingredient in wood stabilizing products is methyl methacrylate (MMA). MMA is a monomer—a small molecule that will fit in microscopic spaces while anxiously hoping to link up with other molecules of its MMA kin. MMA is mixed with a catalyst before it is placed in a vacuum chamber and drawn into the wood. The catalyzed MMA remains fluid and workable until it is exposed to heat, at which time the catalyst initiates the reaction that converts the monomer MMA into ▸

As with any chemical in the workshop, you should read and adhere to the manufacturer's handling instructions. Methyl methacrylate is flammable in some formulations—keep it away from any source of ignition. It is irritating to the respiratory system and skin and may cause dermatitis on skin contact. Use it with good ventilation and avoid getting it in your eyes or on your skin or clothing. If you do get it on skin or clothes or in eyes, wash it off with large quantities of water. It permeates all types of disposable gloves.

In theory, you can stabilize anything that has space to absorb the MMA, including a shelf fungus. Not all experiments bear repeating, even if the result is poor man's African blackwood.

Building and Using a Vacuum Chamber

Stabilized wood is widely available from a number of commercial sources, and some companies provide stabilization services for wood that you supply. But the equipment and materials for doing the job yourself are readily available, giving you complete control over the process. Hold Fast markets a complete outfit that uses an air compressor to generate a vacuum. This system, and stabilizing resin, can be purchased through Packard Woodworks, and likely an increasing number of other outlets. A quick search of eBay will turn up additional options. Stabilizing solution is available through Curtis Seeback (TurnTex.com).

Making a chamber is also easy, and any turner with a vacuum chuck has already incurred the largest expense—a vacuum pump. To make a chamber, you will need the items depicted in *Photo 6*.

- a selection of ¼" pneumatic fittings (dry vacuum gauge to measure up to 30", ¼" NPTM hose barb, NPTF cross, 2 NPTM hex nipples, ball valve). I added a quick disconnect coupler to the vacuum hose on my system so I can easily switch between my vacuum chuck and the chamber. Also consider whether you need to buy any ¼" vacuum hose—I had a piece left over from setting up my chuck.
- Teflon (plumber's) tape.
- You will need the chamber itself, which can be a pot salvaged from a thrift store. I recommend stainless steel, and make sure the rim is flat so that it will seal against the lid. Remember that the larger the pot, the more MMA you will have to buy to cover your treated items. Get something close to the size you need or, better yet, collect a few different sizes, as one lid with its pneumatic fittings should work on all of them.
- You need to be able to see the contents of the vacuum chamber to monitor treatment progress, so I recommend a sheet of clear acrylic for a lid. The lid needs to be thick enough to withstand the vacuum (½" should be fine, I used ¾"), and large enough to extend beyond the rim of your largest pot.
- A gasket to fit between the lid and the chamber. A medium-to-thick piece of closed-cell packing foam works well.
- A ¼" 18 NPT drill bit and thread tap.
- A hold-down weight to keep your wood under the surface of the MMA during treatment. I made a weight from hardware cloth and drill rod attached with electrical ties.

Steps

1. Using the tap and bit set, drill a hole in the approximate center of your lid, then use the tap to cut the female threads into the hole. Use one of your male ¼" fittings to check for fit and assure that the female threads are clean.
2. Assemble the pneumatic fittings, wrapping male threads with a layer of Teflon tape before assembly to reduce air leaks. Thread the assembled pneumatic fittings into the hole in the lid *(Photo 7)*.
3. Cut your gasket material to overlap the chamber's lid and create an opening to allow a view into the chamber.
4. Place the gasket on the top of the chamber, then set the lid with its pneumatic fittings on the gasket, and hook up the chamber to your vacuum. Turn on the vacuum pump and close the ball valve to check the performance. Depending on your elevation and the strength of your pump, you should show a vacuum in the range of 23–26". The stronger the vacuum, the more effective the system will be.

Basic process

Detailed instructions for stabilization should be included with your stabilizing solution. The basic process is as follows.

1. I rough turn some pieces to minimize the amount of wood I will need to remove after treatment (and therefore the amount of MMA left on the shop floor with shavings). Wood to be stabilized should be as dry as possible—at a maximum 10 percent moisture content. You may want to place your wood in a low temperature (~180˚F) oven for 8 hours prior to stabilizing to force out the last bit of moisture. Be sure to allow the wood to return to room temperature before proceeding with treatment.
2. Place wood to be stabilized into the chamber.
3. Cover wood with hold-down weight and add enough MMA to cover the wood by a ½" to 1". Place the gasket and lid on the chamber.
4. Make sure the ball valve on top of the lid is open and turn on the vacuum pump. Slowly close the ball valve. The wood will bubble and the MMA will foam and you want to control this process so that it proceeds slowly and you don't draw MMA into your vacuum pump.
5. Once the foaming has subsided, completely close the valve and leave the wood to soak under vacuum until bubbling stops. This typically takes 1 to 3 hours.
6. Slowly release the vacuum using the ball valve, and then turn off the vacuum pump. The MMA level will go down as the solution is drawn into the wood. Leave the wood to soak—overnight is fine if you are using a stainless chamber.
7. Remove the wood from the chamber, let it drain, and remove excess liquid from the outside (an old credit card makes a good squeegee for dimensioned lumber).
8. Wrap each piece of wood in foil and place it in a 200˚F oven for 90 minutes (thick stock may require additional time).
9. Unwrap and cool the wood *(Photo 8)*. Excess hardened acrylic on the outside of the wood can be scraped, sanded, or trimmed with a saw. Or, just turn off the excess acrylic as you excavate your way down to reveal the hidden treasure in your chunk of wood.

(6) The vacuum chamber with lid and vacuum fittings, closed cell foam gasket, weight, and a selection of wood ready for treatment.

(7) A close-up shows the vacuum connection threaded into the chamber's lid. The center is the NPTF cross, the ball valve on the left, gauge on top, hose barb on the right. Hex nipples connect the ball valve to the vacuum unit, and the unit to the chamber lid.

(8) Stabilized spalted holly and spalted maple fresh out of the oven looks discouraging, but the magic begins as soon as the shavings start flying.

a single, complex chain polymer that is linked throughout the treated wood—all that liquid MMA becomes one big plastic molecule interwoven throughout the cell walls, thereby changing the properties of the treated wood.

As with any of the myriad ways we have contrived to alter wood, stabilization has its limits and is suited for select circumstances. I began investigating the technique in pursuit of shaving mugs for my clients that would hold up under the harsh treatment of repeated cycles of wetting and exposure to soap, followed by a drying cycle *(Photo 1)*. The tag line of my woodworking business is "creating family heirlooms"; if my pieces are ending up in the burn pile because they cannot hold up under use, I am not living up to my credo. Stabilizing does greatly improve water repellency (the rate of water uptake), but an extra step to seal open pores is still required to improve water resistance (the amount of water uptake).

I have discovered additional advantages and opportunities as a result of working with stabilized wood. One of the great benefits is that previously unusable wood can be pressed into service with gratifying results. Spalted, punky, and soft woods with poor working qualities readily take up the MMA solution and work like a dream after stabilizing *(Photo 2)*. After working with stabilized spalted woods, I realized that one of my other challenges in woodturning—hand-thread chasing—might be addressed. Relatively few species of woods have properties that lend themselves to threading, but filling the lumens with acrylic appears to improve the capacity of many species to accept threads. The options for timber for threaded finials, for example, are few and may not achieve the look I am striving for. Stabilizing can give some of our domestic hardwoods the properties they need to accept threads *(Photos 3, 4)*.

Materials not previously acceptable for any turning job may now become a source of inspiration and exploration *(Photo 5)*. The vacuum chamber that is integral to the stabilizing process can also be used to cast materials in acrylic or epoxy, a process that utilizes the vacuum to remove trapped air bubbles prior to the hardening of the casting material. Finally, MMA readily accepts dyes, so a piece of timber can be uniformly colored prior to working.

Insights, cautions, considerations

I have accumulated a few other insights while working with stabilized wood. Gluing, for example, is best done with adhesives compatible with plastics. Drilling of stabilized materials requires care and should proceed in small increments, as heat will cause the plastic to melt, bind the bit, make a mess, and potentially crack the wood.

Lung protection is always a worthy precaution, even more so with stabilized wood, as working it sends tiny plastic particles into the air, especially during sanding. Like drilling, sanding should be done to avoid heat build-up—turn the lathe speed down, use a light touch and let the abrasive do the work, and check the abrasive frequently for clogging. Sanding alone often produces an amazing finished surface, but if you want to gild the lily, a friction polish works well. Sealing with any topcoat will provide additional protection.

Although commercial enterprises have developed the equipment to stabilize items as large as slabs for use as countertops (imagine the effect!), in our home shops the realities of space and expense constrain us. Fortunately, that pricey MMA that is not absorbed into the wood during the treatment process can be collected and saved for the next batch. But at about $100 per gallon, you will want to think carefully about how you can put the technique to best use. A large vacuum chamber can be built, but it will require a large volume of MMA to cover materials placed in it, and a large piece of treated wood will retain a lot of MMA, possibly increasing its cost beyond what the market will bear. Because of these factors, stabilization is likely to remain best suited for smaller projects like pen turning, finials, small threaded boxes, bottle stoppers, and utility handles.

As you experiment you will also find that some species of wood are more amenable to stabilization than others. Now that you know the fundamental theory behind the technique, you can readily understand that less dense species of wood with more inherent lumen space are more likely to take in more MMA, producing better results. Dense tropical hardwoods have little space for the MMA to fill, and the oil in some species interferes with curing. But don't give up hope without a trial run. Curtis Seebeck, a woodturner who markets Cactus Juice Stabilizing Resin, reports that one of his clients successfully stabilizes ebony. Experimenting with a scrap or cutoff before committing the best of your stock is always prudent. To understand how much MMA your wood absorbs, weigh your wood before and after treatment to track the weight gained through stabilizing.

Knowing how creative woodturners are, I am interested to see what other innovative ideas come out of access to a vacuum chamber and stabilized wood. Ever exploring for better ways to waterproof wood, my next alchemy will include using the vacuum chamber to impregnate wood with wax. Wish me luck. ■

Don McIvor is a full-time turner and artist living in Washington State. He is the author of two books and numerous articles, including contributions to American Woodturner *and* Woodturning Design. *He can be reached through his website, mcivorwoodworks.com.*

Anatomy of a Cone: Pens With a Sense of Humor

Rick O'Ryan

Included with a mostly closed Coulter cone hollow form is a pen from an opened Coulter cone. The vessel shows the scale character near the outside of the cone, and the magnetic vertex pen shows the character at the base of the scales.

An egg, a top, or a finial can nicely display the beauty inside a cone. Turn a cone, leave it fat, add pen hardware, and the result is pens that beg to be picked up, examined, and used. A smile appears as the pen scribbles a few words. Some people laugh outright. One or two of the designs are easier to write with than others, but they all elicit humor.

Eldarica pine (also known as Afghan or Mondale pine) is plentiful where I live in New Mexico, so those were the first to end up on my shop floor when they disintegrated as I attempted to turn them. Discussions with a turner in the Netherlands led to an understanding of the characteristics of closed cones and the difficulties associated with finding not-yet-opened cones, which are usually still attached farther up on a tree. The closed cone has not released its seeds, so the tree has not yet cast it loose. Sometimes an open dry cone can be reclosed by soaking it in water.

While exploring Eldarica cones, I found an eBay store that sold cones from California trees—some native like Coulter, some introduced like Chir. Coulters and sugar pines had caught my attention years ago because of their size. I ordered a couple boxes and explored the differences between various species. A few trips into the New Mexico forest and I returned with limber pinecones.

Layers of beauty

Inside cones with large central cores, I found layers of beauty and character that changed with the distance from the center and often bent axis of the cone. This led to an exploration of which species would work well for various pen kits. The farther from the axis, the more character the cone contained; I looked for pen kits that would support larger-diameter and longer wood barrels. My pens got fatter and smiles grew more frequent. I was encouraged to see how fat I could make a pen—out there somewhere was a hand that could grasp it perfectly.

Closer to the center axis, at the area where the scales of the cone begin to develop, the characteristics lend themselves to being displayed in smaller-diameter objects. In the cones of many species, there is a core of brown, nondescript MDF-like material. Toward the outside of this material, the base of the scale starts. Outside this core is often a thin white layer of harder woody material. As the base of the scale extends through the white layer, it becomes more defined and distinct. Outside the white layer, there is often another nondescript brown layer within which the base of the scale begins to differentiate into light-colored woody strands.

Species vary in character at the base of the scale as it grows out beyond the white woody layer. In Chir pines, the look resembles a horseshoe. In Jeffrey pine, it appears like a cloverleaf or clubs from playing cards. In Coulter pine, the base leaves the white layer as a circle of white woody material with a brown center. The circle soon breaks on the side facing the stem of the cone and flattens considerably, resembling a bear claw as it separates into the strands that hold the scale material together.

The complex and loose characteristics of cones require one to use copious quantities of cyanoacrylate (CA) glue to stabilize the cone for turning. Several times I have had reactions to the CA fumes. It is imperative to have a well-ventilated shop space and stand upwind from any airflow. Currently, I am experimenting with stabilizing by pulling a vacuum on cones soaking in resin.

Enjoy the anatomy of various kinds of cones. A fat cone pen may materialize in your shop. They make people smile. ■

Rick O'Ryan has been a member of the AAW since the late 1980s and a woodturner since the early 1960s. More of Rick's work can be seen at woodsongs.net.

Go Ask Alice is a closed Coulter cone and Cholla. This is what came of a cone vessel breaking up during hollowing. A partially turned Cholla base with carved stem ties the pieces of the cone back together.

The long leaf pine from South Carolina has a smaller core area than the Chir, Jeffrey, and Coulter, and hence does not make a large-diameter object. There is very little material outside the white woody layer, making it more evident.

A Coulter cone breaks up during turning.

Eldarica closed cone, featuring the scales at the base of the cone.

Open Coulter cones. The cone layers seen in the pen can be correlated with the cone section on the left.

Very papery on the outside and ready to crumble at a moment's notice, the Deodar Cedar cone (Cedrus deodara) does have some woody material in it, but the lack of structural integrity requires CA glue to be applied early on. The pattern made by the stabilized paper scales is lovely.

The cross section of the cones at the clicker end shows the MDF-like core, the white woody layer around the core, and the MDF-like material wrapping around that. The base of the scales develops at the intersection of the inner core and the inside surface of the white woody layer. The darker color of the cone on the right appears to be from a cone that had weathered longer on the ground.

The structure of Eldarica cones resembles the long leaf, but the cones are smaller. The closed cone is a fairly tight structure; in some cases, it can be turned to display the outermost character of this cone (as seen on the pen on the right). Also evident in this pen is the beautiful cross section at the base of the cone. The two on the left were made from open cones and feature the seeds (Eldarica pine nuts).

The scales near the base of the cone, to the left, show the side strands that hold the scale together. As one goes out on the cone to the tip, the strands are shown in cross section.

Three pens made from open Jeffrey cones, which usually exhibit a wonderful playing-card club pattern in cross section of the scale near the base.

Each of these pens was made from an open Chir cone similar to the cut cone to the right. The smaller closed cone at the left shows the seed area that presents turning challenges.

OFFSET-TURNED DOUGHNUT SCULPTURE

Neil Scobie

I made a pair of linked doughnuts years ago that remain one of my favorite forms. I like the way they beg to be touched, spun around, and explored. Considering a project for my upcoming demonstration schedule, I decided to highlight the techniques used to make the linked doughnuts, but with the design modified to allow me to complete the project within my allotted 90 minutes.

I enjoy solving the problems that arise around a new turning project. After defining the steps to make the piece, turning a couple of prototypes determines if the project is achievable and the process safe. Using scrap lumber for the prototypes means little more than time is ventured. I worked out the design for this project while driving home from a woodturning symposium earlier this year, and was pleased to discover the turning process was much easier than I guessed.

A set of Cole jaws is essential for this project, along with either wooden jaws or extended screws and spacers to hold the blank. I have found the shopmade wooden jaws illustrated in *Figure 1* to be safe and effective.

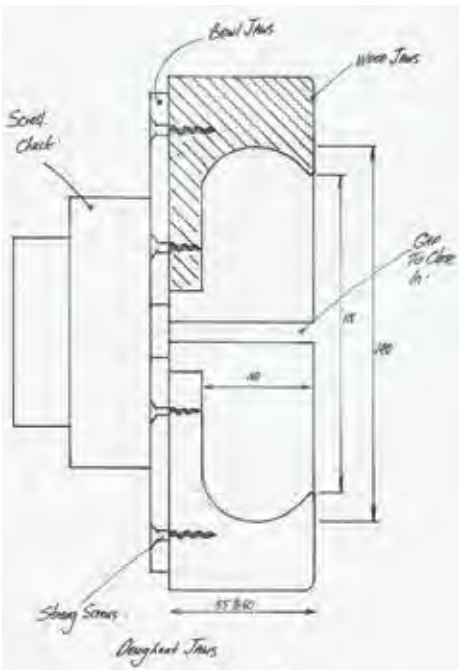


Figure 1. Schematic plan for shopmade auxiliary wood jaws mounted on Cole jaws. (Numbers are millimeters.)

118 = 4½"
140 = 5½"
40 = 1½"
55-60 = 2 ⅛"–2⅓"

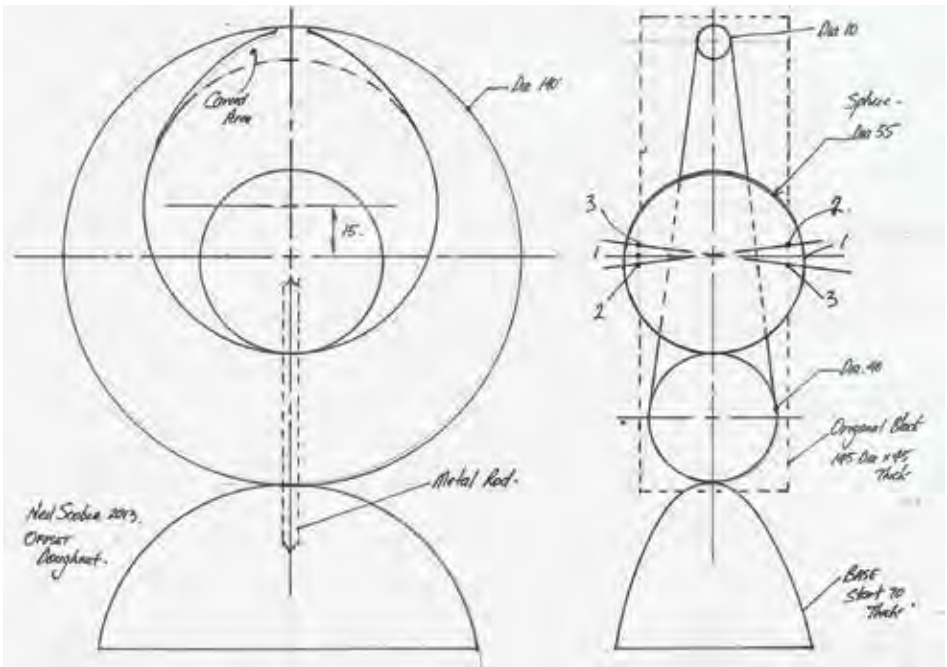


Figure 2. Front and side view of doughnut sculpture. On the side view, note the positions of centers #1, #2, and #3. (Numbers are millimeters.)

140 = 5½"
59 = ½"
39 = ⅓"
55 = 2⅛
40 = 1½"
145 × 45 = 5¾" × 1¾"
70 = 2¾"

Turn the doughnut form

1. Lay out the 5¾" × 1¾" (145mm × 45mm) blank. Aligning the centers on the same axis on both sides of the blank is critical, so it is easiest to start with a square blank, finding and marking the true center on each side by drawing diagonal lines from each corner.

   The rotational centers are marked on true center (#1) and 3/16" (4.5mm) on either side of true center *(Photo 1)*. Starting with the obverse face and with the three centers oriented vertically, number the top center as #2 and the bottom center as #3. Flip the blank over as if turning the page of a book to show its reverse side and number the top center as #3 and the bottom center as #2. This will ensure that the blank, mounted between #2 or #3 centers, will be canted off its vertical axis, allowing the form to taper in thickness.

   Indent each point with a center punch to make the task of mounting the blank between tailstock and drive centers easier. Trim the blank to round using a bandsaw.
2. Mount the blank onto the lathe, placing the true centers (#1) between the drive and tailstock centers. True the blank and turn the outer curve of the form on the tailstock side *(Photo 2)*, referring to *Figure 2* for guidance. A 3/8" or ½" (10mm or 13mm) deep-fluted bowl gouge works well, rolling the tool on its side and using the cutting edge on the bottom half of the tool.
3. A Morse taper extension in the headstock permits access to the reverse face of the blank *(Photo 3)*. If you do not have an extension, reverse the blank between the lathe centers and continue cutting from the tailstock side.
4. Remount the blank to rotate on the #2 centers. This will produce an offset perimeter and a form that will be thinner at the top. Remove material from the tailstock face of the blank, and remove material only in the shadow line created by the off-center rotation *(Photo 4)*. Do not remove material past the solid line defined by the rotating bottom of the form. Sand this section to 180 grit before moving on.
5. Reverse the form and remount it on the #3 centers. Again, remove material from the tailstock face, turning away the shadow line until a satisfactory curve is achieved at the bottom of the form *(Photo 5)*. The bottom of the form will be about 1½" (40mm) thick, and the top about 3/8" (10mm) thick *(Photo 6)*. My form is a little lopsided at this point, but I found I could correct this problem when turning the inside hole. Sand this side to 180 grit to blend the curves at the bottom of the form. ▸

Turn the Doughnut Form

Turn the Hole in the Doughnut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Turn the hole in the doughnut

6. To facilitate turning an offset hole in the doughnut, I made a small block and affixed it to the thin side of the form using hot-melt glue *(Photo 7)*. A 9/16" (15mm) offset is required for this project, a number I determined by drawing the doughnut to scale on paper with a compass, then evaluating different locations for the hole.

   To make the offset block, use a bandsaw to cut a curved notch in the end of the block, approximating the curve of the top of the doughnut. Leave the block a little long, glue it in place, and then trim it to its final dimension (9/16") after the glue has set.
7. Clamp the offset doughnut in the wood or Cole jaws so the plane of the exposed face is parallel to the front of the wood jaws *(Photo 8)*.
8. Using a small bowl gouge, shape the interior form of the doughnut by making a series of light cuts toward the center *(Photo 9)*. Continue shaping until the internal curve is formed and about half the thickness of the blank is removed *(Photo 10)*. Sand the new surface, blending the inner and outer curves.
9. Reverse the doughnut in the jaws, again aligning the uncut face parallel to the front of the jaws. Repeat Step 8, removing the inner part of the doughnut *(Photo 11)*. Try to create symmetry by matching the curve created on the first side. Approaching the center, the cut will break through to form the doughnut hole. Sand this side to complement the first side. If necessary, the doughnut can be re-chucked to expose the first side for refining the shape. It is best to sand away as many facets as possible before removing the piece from the lathe.

Sand and finish the doughnut form

10. Saw off the bulk of the glue block and clamp the doughnut in a wood vise to chisel off the waste *(Photo 12)*. Hot-melt glue resists sanding, so carefully pare off as much as you can.
11. A shopmade drum sander makes the job of sanding the doughnut easy *(Photo 13)*. The drum is a 12" (300mm) section of 3/4" (20mm) diameter PVC pipe held between centers with small turned inserts in each end. A sleeve of tubular foam pipe insulation slips over the PVC and is wrapped with a few layers of cloth-backed abrasive secured on each end with electrical tape. Two grades of abrasive can be mounted side-by-side, so two or three drums can handily cover the desired range of abrasives. I use the drums to sand up to 400 grit and find only a little additional hand sanding is needed to complete the task.
12. Decide if you prefer the resolution of a complete ring or the tension of a broken circle *(Photo 14)*. For the latter, place the form on a soft foam pad and use a small pull saw to make two cuts about 1" (25mm) apart *(Photo 15)*.
13. With a carving knife, trim back the ends of the cut sections so they come to a point *(Photo 16)*. I decided to remove excess material from the inside of the form, leaving the outer ring to follow a continuous—if broken—line.
14. Opening the form requires a trip back to the soft drum sander to remove the knife marks *(Photo 17)*. Take care to avoid catching the points on the sander. Finish up by hand sanding 400- or 600-grit abrasive.

Sand and Finish the Doughnut Form


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The base

15. I glued two pieces of burl to a 1"-thick center block using paper joints. I then cut a 5" × 2¾" (125mm × 70mm) blank from the glued-up blocks *(Photo 18)*. This arrangement produces two bases. The paper joints are made by sandwiching a piece of drafting paper coated on both sides with PVA glue between each wood joint.
16. Although the blank is mounted between centers, the grain orientation requires faceplate-turning techniques and a bowl gouge to shape the outside of the form on the tailstock side. I aimed for a parabolic curve, which is slightly pointier than a semicircle at the outside edge of the curve.
17. Flip the blank around and remount it between centers to turn the second side *(Photo 19)*. Reproduce the curve turned on the first side *(Photo 20)* and sand the form to completion.
18. The form should split apart at the paper glue joint with the aid of a wide chisel *(Photo 21)*. Remove the glue residue by scraping and sand the base on a disc sander. ▸

The Base


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The Sphere


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The sphere

19. Cut a blank for the sphere sized about 1" longer than the diameter of the completed sphere and about ⅜" (10mm) larger in diameter. True the blank between centers, keeping the resulting cylinder slightly larger than the completed sphere.
20. Using a spindle gouge, shape the sphere by cutting from the center toward the ends *(Photo 22)*. Leave about 3⅜" diameter at either end to support the turning.
21. I turn spheres by eye, periodically checking progress with a vernier calliper. If the length of the diagonals are equal to the center diameter, the shape will be sufficiently close to a sphere *(Photo 23)*. Sand the surface to your final grit while the form is on the lathe.
22. Use a handsaw to part the sphere from the waste wood, leaving a little excess wood outside the curve of the sphere *(Photo 24)*. Return to the soft drum sanders to blend the cut ends into the sphere shape.

Drilling the holes

23. I use a 3⁄16" (4.5mm) rod to connect the sculpture's elements. The rod extends about ¾" (20mm) into the base and ball and passes through the doughnut. It is possible to drill the necessary holes by eye, but a drillpress improves precision. The doughnut needs to be clamped for the drillpress; I use a machine vise with plywood jaws *(Photo 25)*. A small rubber cylinder keeps the sphere upright and stable for drilling *(Photo 26)*.

Drill the Holes


25


26

Finishing and assembling

I applied four coats of oil finish, rubbing back the surface between coats with 0000 steel wool. After the finish cured, I assembled the sculpture using the rod glued in place with two-part epoxy.

This form takes a little practice and your first offset doughnut may not be your best; save your prized timber until you have completed a couple of practice pieces. To adapt the sculpture to your own style, try varying the design of the stand or sphere. Nothing ventured, nothing gained is a good motto! ■

Neil Scobie is an artist-woodturner and carver who lives near the sea in Bucca Creek on the east coast of Australia. His home on the web is neilandlizscobie.com.

Lint Free *in Style*

Daniel Fobert

Turned lint rollers are quick, easy, and inexpensive to produce. They make good gifts, appreciated by well-dressed individuals, pet owners, professionals, tailors, and seamstresses.

To make a roller, you need two lengths of 2" × 2" (50mm) spindle stock—one 4¼" (108mm) long, the other 9" (230mm) long—a couple of pieces of scrap wood, a 10-24 hanger bolt (a piece of hardware with woodscrew threads on one end and bolt threads on the other), a 10-24 threaded brass insert, and a 7mm pen mandrel.

For the tack rolls, the Evercare 60-sheet brand is the best. It has a cardboard tube, so it rolls freely. You can easily find these rollers at supermarkets and pharmacies—big-box stores do not always stock Evercare brand. If you cannot find Evercare tack rolls, adjust your measurements to match the size of a different brand.

Drill a hole in one end of a blank. This hole is used when installing tack rolls and tightening the tack roll holder to the handle.

Drill a smaller hole the length of the blank.

Turn the tack-roll holder

Mount the 4¼"(108mm) spindle blank into a four-jaw chuck. Use a 1$\frac{1}{16}$" Forstner bit to drill a 2"-(51mm-) deep hole in the end. This hole will allow you to use your thumb and index finger when you install tack rolls and tighten the barrel to the handle *(Photo 1)*.

Use a 6" long ¼" (152mm × 6mm) drill bit to drill the rest of the way through the blank *(Photo 2)*. The smaller hole accommodates the brass insert (later installed into the other end) and the pen mandrel. Clean up and finish the thumbhole. ▸

Turn a pair of guide spools from scrap stock *(Figure 1 and Photo 3)*. Like the guide bushings used in pen turning, these help establish the correct diameter for the tack-roll holder. I make many lint rollers, so I use custom-made metal guide spools, which are shown in the process photo.

Slide the smaller, plain guide spool onto a pen mandrel. Next, slide on the blank for the roller; be sure the large hole faces toward the tailstock. Finally, slide on the other guide spool—its tenon should fit into the hole in the roller blank. Hold the pieces in place with a nut threaded onto the mandrel. Fit the mandrel's Morse taper into the headstock spindle and draw up the tailstock to hold the free end of the mandrel.

Rough-turn the blank to a cylinder about 1⅝" (41mm) in diameter. Leave a ⅛" (3mm) ring at the tailstock end. The ring will serve as a stop to keep the tack roll from sliding off in use. Turn the rest of the barrel to 1½" (38mm) in diameter *(Photo 4)*.

Sand the roller smooth and apply your favorite finish.

Turn a pair of guide spools to fit onto a pen mandrel.

Use the guide spools to set the diameter of the cylinder and of the ring. (The guide spools in this photo are metal, which are custom made.)

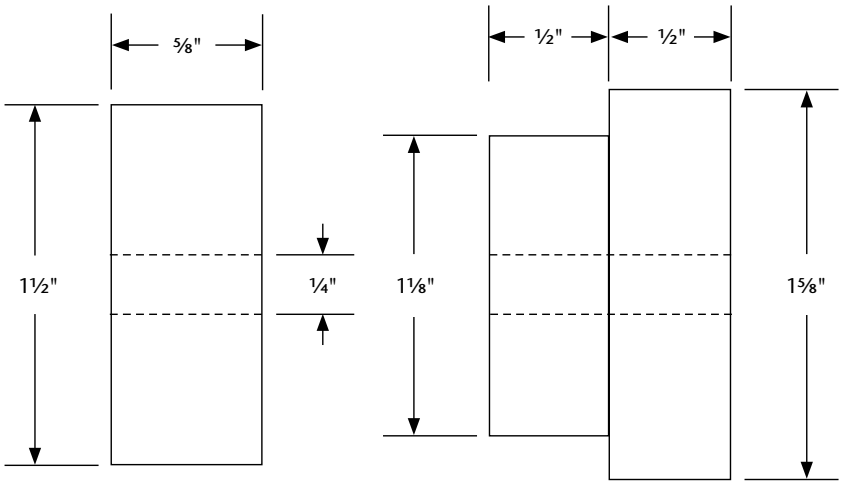


Figure 1. Guide Spools

Turn the handle

The design of the handle can be decorative, but it requires a 1⅝" (41mm) hilt to stop the tack roll from riding up the handle. In addition to drilling a 9/64" (4mm) hole for the hanger bolt, you will turn a recess for the tack-roll holder to ensure a square seat so there is no gap between the handle and the tack-roll holder.

Square the ends of the 9" (230mm) spindle blank and mount it into a four-jaw chuck.

Drill a 9/64" (4mm) hole, 1¼" (32mm) deep into the end *(Photo 5)*.

Use the hanger bolt to cut threads in the hole: Fit the bolt-threaded end into a Jacobs chuck mounted in the tailstock. Advance the tailstock by hand to screw the hanger bolt into the blank *(Photo 6)*. Back the bolt out and remove the Jacobs chuck. Cutting the threads in the hole now will make it easier later to install the hanger bolt.

Support the blank with a live center and turn it to a 2" (51mm) cylinder.

At the tailstock end of the blank, turn the last 1" (25mm) or so to a 1⅝" (41mm) final diameter.

Retract the live center and carefully cut a recess about 1/16" (2mm) deep in the center; stop the recess about 3/16" (5mm) from the edge *(Photo 7)*. This recess is a seat for the tack-roll holder and allows the holder and handle to come together square.

Reinstall the live center to support the work and turn the handle to the desired shape *(Photo 8)*. Stop periodically and feel the handle for comfort and rough spots.

Sand and finish the bulk of the handle. Part it off, and then sand and finish the end.

Install the hardware

Begin by threading the 10-24 brass insert into the tack-roll holder. Unless you own a special tool designed for installing these

inserts (I don't), you will need to take steps to prevent the threads from binding as you try to screw the insert into endgrain. Here is the method I devised.

Screw a square washer onto a drive bolt. Thread on the insert, with its flat side facing the washer *(Photo 9)*. Use a T-handle Allen wrench and screw the insert, slot first, into the small hole in the end of the tack-roll holder. Stop when the washer meets the wood *(Photo 10)*. Hold the washer with a wrench and back out the drive bolt. The drive bolt should move freely, while the insert stays put.

Next, screw the hanger bolt into the handle. Off the lathe, hold the bolt (by its bolt threads) using a Jacobs chuck *(Photo 11)*. You will use the chuck for leverage so that you can more easily thread the hanger bolt into the hole. Screw the wood threads into the hole until only the bolt threads are showing.

Remove the chuck, hold the bolt in a vise *(Photo 12)*, and saw off all but ¼" (6mm) of the bolt. Grind or file off any burrs or damaged thread ends.

The stub of the bolt threads into the insert in the tack-roll holder to hold the two pieces together *(Photo 13)*. To change lint rollers, just unscrew the handle, slide off the old roller, slip on a new one, and thread everything together again. ■

Drill a hole in the end of the blank to accommodate the threaded insert.

Screw in the wood threads, and then remove the hanger bolt.

Turn a shallow recess on the end, so the handle and the roller barrel will meet evenly.

Finish shaping the handle.

I use a square washer, a drive bolt, and a T-handled Allen wrench to screw the brass insert into the tack-roll holder.

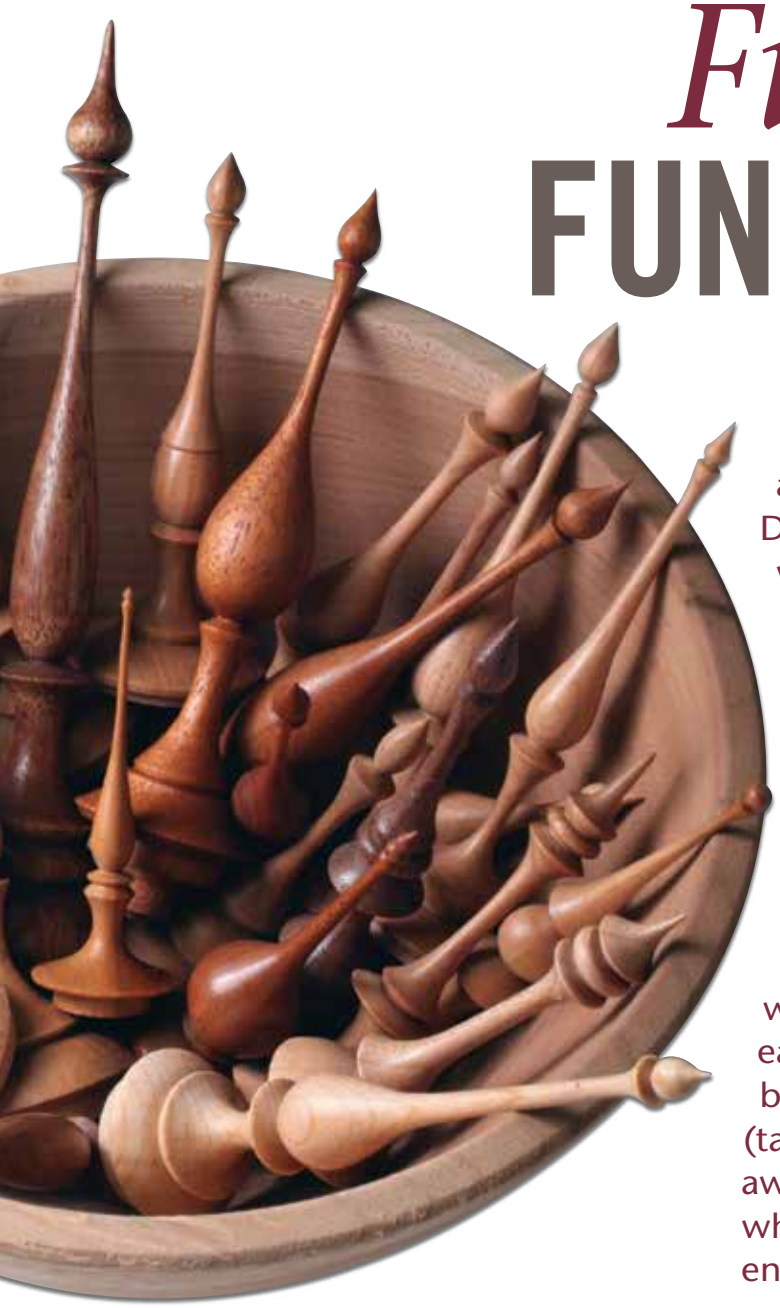
Screw the brass insert into the tack roll holder. Stop when the washer touches the wood. Remove the drive bolt and washer.

Use a Jacobs chuck to help screw the hanger bolt into the handle.

Saw off most of the exposed bolt. A hacksaw works well.

The completed roller. The bolt in the handle threads into the insert in the tack-roll holder. There is a thumb hole on the end of the tack-roll holder that helps you install a new tack roll.

Dan Fobert is a retired Chrysler diagnostician and field service representative. He has also been a luthier for 15 years, building more than 75 instruments and publishing several articles, including ones in Mel Bay *and* American Lutherie. *Dan teaches beginning and intermediate inlay and is an intermediate woodturner and machinist who dabbles in robotics.*



Finial FUNDAMENTALS

Joe Larese

I became interested in turning delicate finials after watching Cindy Drozda's *Finial Star* DVD. Until then, most of my lidded boxes were topped by furniture-style knobs that were nothing like Cindy's slender and elegant work. With plenty of practice and perseverance, I began turning long, thin finials, and I soon realized the reason for my success was twofold. First, I developed the skills necessary to make fine cuts. Second, and just as important, I followed the process shared in this article that separates the task into manageable steps, with the finial divided into working sections, each of which is completed before the next begins. Working the blank from right to left (tailstock to headstock), the trick is to clear away enough wood to make the necessary cuts while keeping enough mass on the headstock end to support the delicate work.

Turn the first taper with a spindle-roughing gouge.

Reduce the first working section to ¼" (6mm) diameter with a parting tool.

Use a ⅜" (10mm) spindle gouge to create a sloped taper to meet the ¼"- (6mm-) diameter tip section.

Add a concave section to create the flame tip.

Polish the flame tip.

Use a miniature live center with protective plastic tip.

Using the mini live center, reduce the next working section to ⅜".

Many of the finials I make are designed to cap the top of a turned box. For that reason, the finial base is usually a large, semicircular bead that leads to a cove, or a V cut that blends into a cove. The cove acts as a finger hold, allowing the lid to be easily lifted, and I size the cove to fit small fingers. From there, the finial can become much thinner, and I usually turn a long vase shape that rises to a graceful curve, ending in a flame-shaped tip that rests on a "saucer." This shape also works well for the icicle part of a turned holiday ornament, but the larger bead is omitted and replaced with a taper sized to the opening of the globe portion of the ornament. I mix and change the shape of various elements, but I try to avoid excess. One of my favorite finials was made by Jean-François Escoulen. An elongated flame emerges from a small cove flanked by two delicate beads to make a simple, beautiful shape.

Preparing the blank

Start with a 2"- (5cm-) diameter blank about 5" (13cm) long. Straight grained, air-dried cherry, soft maple, and birch are good practice woods. Make sure to form a tenon and shoulder that allow the four-jaw chuck to give the best possible support. Mount the blank and bring up the tailstock with a live center, removing the point from the live center if possible. The point of the live center will create a hole at the tip of your turning, which is not a desirable feature. I prefer to use a spindle-roughing gouge to turn a taper from the midway point down to the live center *(Photo 1)*.

Turning the tip and saucer

Use a parting tool and a series of cuts to reduce the tip to about ¼" (6mm) diameter by 1" (25mm) long *(Photo 2)*. Switch to the ⅜" (10mm) spindle gouge to taper the stock material to meet the ¼" diameter tip section *(Photo 3)*. Creating this transition is critical and this step is repeated whenever there are two different adjoining diameters. Leaving a square shoulder between these varying diameters will likely result in a serious catch.

Readjust the toolrest and concentrate on the ¼"-diameter working section to make the next cuts. Using a ⅜" spindle gouge, create an ellipse that will eventually form a flame-shaped tip. Remove the tailstock and gently use the freshly sharpened edge of the spindle gouge to cut a concave portion at the very tip *(Photo 4)*.

It is important to shape, sand, and polish the tip while having the support of the thicker material on the headstock end. I usually start ▸

Using the long point of the skew chisel, define the intersection of the flame tip and saucer.

Restore the taper on the stock to meet the new ⅜" working section.

Use a finger for support when making a delicate cut.


11
Restore the taper to meet the section for the elongated vase.


12
A peeling cut with the skew chisel begins to define the vase shape.


13
A planing cut with the skew chisel showing finger support for the thin shaft.


14
A planing cut with the skew chisel further defines the vase shape.

with 220 grit and use small pieces of abrasive, shaping each to complement the curve of the cut surface. Creating a sharp crease in the abrasive helps to get into tight intersections and avoids rounding over crisp details. I usually sand to 600 grit and use a Tripoli product to polish each portion *(Photo 5)*.

A miniature live center can be used to support the work (see sidebar) *(Photos 6, 7)*. Use the spindle gouge or the long point of a ½" (13mm) skew chisel to make a V cut to define the base of the flame *(Photo 8)*. Sand and polish the intersection at the flame's base before using a parting tool to reduce another inch of the blank down to about ⅜" (9mm) diameter. Reshape the adjacent taper down to the newly established ⅜" diameter *(Photo 9)*.

To transition from the flame to the next sections, cut a saucer approximately the same diameter as the widest part of the flame, and complete the saucer with a finishing shear cut. Working from that diameter, use the ⅜" spindle gouge and an underhand grip to make a gentle sweeping cove cut to the left. I use my index finger to provide support and cut in from the right to form a wide cove, the bottom of which is the thinnest part of the finial. Care must be taken because excess pressure will cause chatter and could break the finial *(Photo 10)*. Sand and polish the just-completed section under the saucer.


15
A peeling cut with the skew reduces the stock diameter for the next cove.


16
Form the base of the finial using a ⅜" spindle gouge.


17
Make a V cut with the long point of the skew chisel to define the vase-to-cove transition.

Use a ⅜" spindle gouge to cut the cove.

Define the intersection between beads with the skew chisel.

The completed finial before parting off the lathe.

Turning the shaft

Starting about 1" (25mm) from the chuck, re-turn a taper to provide the clearance to form the shaft and the elongated vase shape *(Photo 11)*. In a series of cuts, use a portion of the skew chisel to peel away waste to rough out the vase shape *(Photo 12)*. Using an underhand grip and supporting the shaft with a finger, orient the skew chisel to make planing cuts to shape the shaft and the vase *(Photos 13, 14)*. Again, sand and polish this portion before moving on.

Turning the base and cove

Using the skew chisel, peel down a portion to the left of the vase base to a diameter of about ¾" (19mm) to block in the portion of the finial that will be a cove *(Photo 15)*. At this point, I like to define the end of the finial base with a parting tool, shear cut the finished diameter, and turn a large bead to meet the cove intersection *(Photo 16)*. These cuts go quickly because the blank has plenty of support. Using the long point of the skew chisel, resume defining the intersection of the vase and what will become the cove *(Photo 17)*.

Turn a cove that will connect the vase base with the large bead at the base of the finial *(Photo 18)*. At this point I elected to add a smaller bead with the ¼" (6mm) spindle gouge, followed by careful use of the skew chisel's long point to create a crisp transition at the intersection of the two beads *(Photo 19)*. Sanding the cove and bead completes the finial *(Photo 20)*. ■

Joe Larese is a member of the Nutmeg Woodturners League in Connecticut and the Kaatskill Woodturners in New York. He has written a number of articles for American Woodturner *and is a regular contributor to* Fine Woodworking's *blog "Finding Center." Joe can be contacted through his website, joelarese.com.*

Mini live center

The torque needed to turn the bearings on a standard live center is capable of twisting and breaking a thin finial. For that reason, I make miniature live centers with a small sealed bearing that spins easily. Router bit pilot bearings are excellent quality, reasonably priced, and can be readily found by searching online for "replacement router bit bearings."

Turn a blank to match the Morse taper of your tailstock or consider purchasing an arbor blank that has a Morse taper. I get mine from Victor Machinery Exchange (under "Product Index" and then "Arbors, blank" on their website).

I place the arbor blank in the headstock spindle and drill a slightly oversized hole to fit the outside diameter of the router bit bearing, then change to a smaller bit and drill a deeper hole to provide clearance for the tip of the finial. I carefully place a couple of drops of epoxy on the outer part of the bearing (avoid getting any epoxy on the inner portion), and gently bring up the tailstock with a cone center to align the bearing.

Cushioning material should be used to protect the part of the finial that is sanded and polished. I have good luck using the cut-off ends of glue spouts. The tiny cone shape helps center and protect the finial tip.

Making light cuts and supporting the work are the most important aspects of successfully turning delicate finials. The miniature live center will become a useful accessory as you gain experience.


Drill the arbor blank to receive a bearing insert.

Finials GALLERY

Keith Tompkins, Untitled, 2010, Walnut burl, ebony, 5" × 6" × 14" (13cm × 15cm × 36cm)

Keith Tompkins, Untitled, 2007, Cherry burl, ebony, 6" × 4" (15cm × 10cm)

Several years ago, I set upon a quest to create a finial that was sleek, fluid, and graceful without copying the traditional finials we have grown to love. My inspiration for this design comes from visualizing the curves of honey flowing down a string, just before it drips.
—Scott Hackler

I push myself, even if it means the possibility of losing a piece—I can always pick up another length of wood. By pushing limits, I get closer to experiencing my full capabilities.
—Ashley Harwood

Keith Burns, untitled, 2012, Bradford pear, dye, 8" × 3½" (20cm × 9cm)

Keith Burns, untitled, 2013, Black ash burl, African blackwood, 4¾" × 4½" (12cm × 11cm)

Ultra thin and fragile finials are proof of technical expertise, but they are frequently impractical for functional or even decorative vessels. I strive for practical finials that complement the vessels they adorn. The finial forest shown here was an exercise in exploring finial forms.
—Jamie Donaldson

In the late 1960s, my standard open-spiral work progressed into twisted hollow forms. Developing a twisted finial to decorate the top of my work seemed a natural progression. The twisted finial and thin, twisted-stemmed goblets are now my personal signature.
—Stuart Mortimer

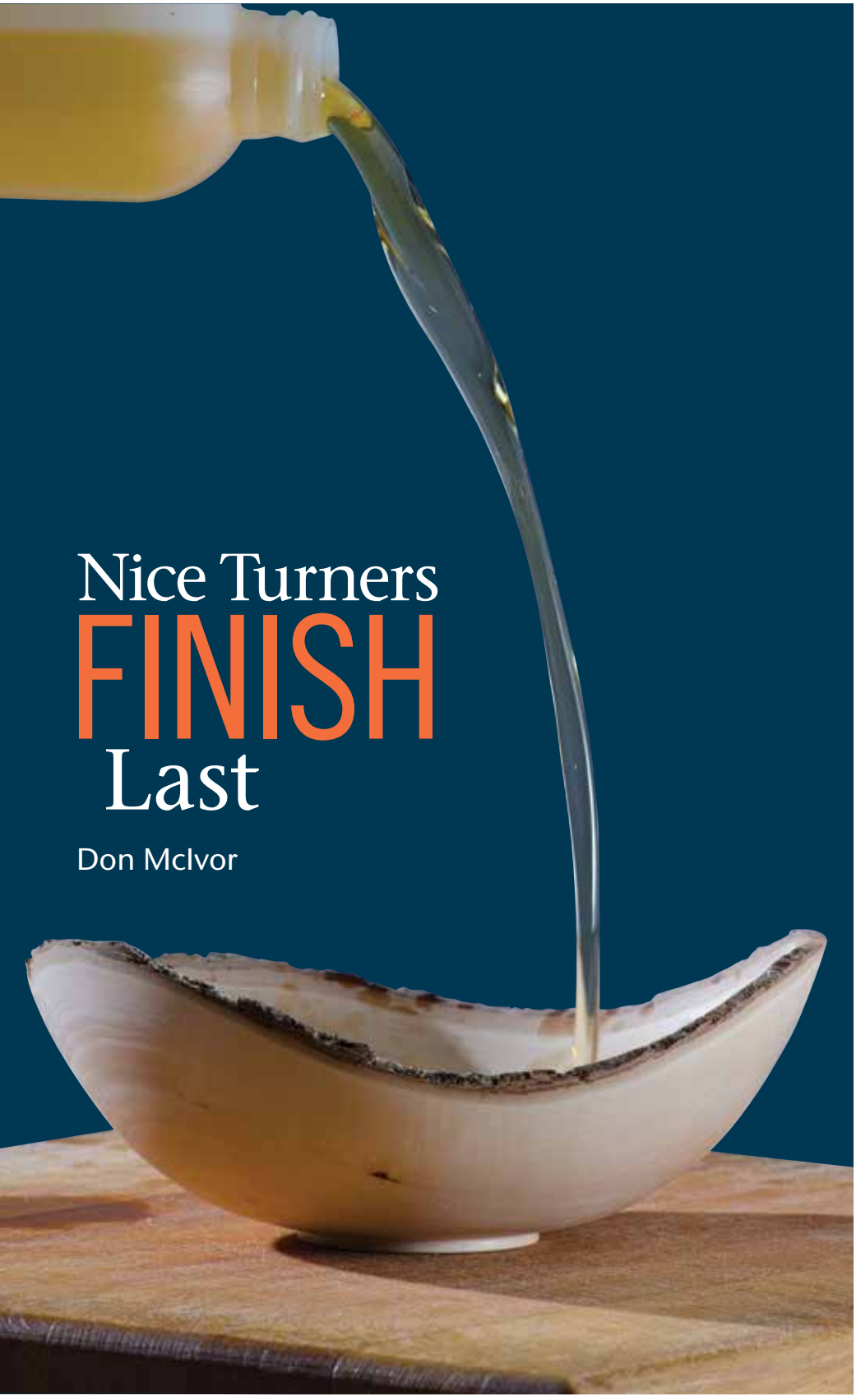
Jean-François Escoulen, boxes.

Cindy Drozda, *Sue's Blue Waterfall,* 2012, Maple burl, African blackwood, dye, moonstone, paua shell, 14k gold, 8" × 10" (20cm × 25cm)

Cindy Drozda, *Cleopatra,* Boxelder burl, dye, African blackwood, akoya pearl, 14k gold, 12" × 8½" (30cm × 22cm)

Finials are the final touch of elegance for a vessel or reliquary. It is a matter of understanding the transition between beads, coves, ogees, and fillets, and then putting the elements together in a way that pleases the eye.
—Steve Sherman

The finials made for the large fixed-tool rose engine pieces are inspired by the work of central European ivory turners of the 17th and 18th centuries. They are the last element to be completed, and with the end in sight, the temptation to rush is hard to resist. Part of the challenge is maintaining the patience and attention to detail that brought all the rest of the piece to fruition.
—Jean Claude Charpignon



Nice Turners FINISH Last

Don McIvor

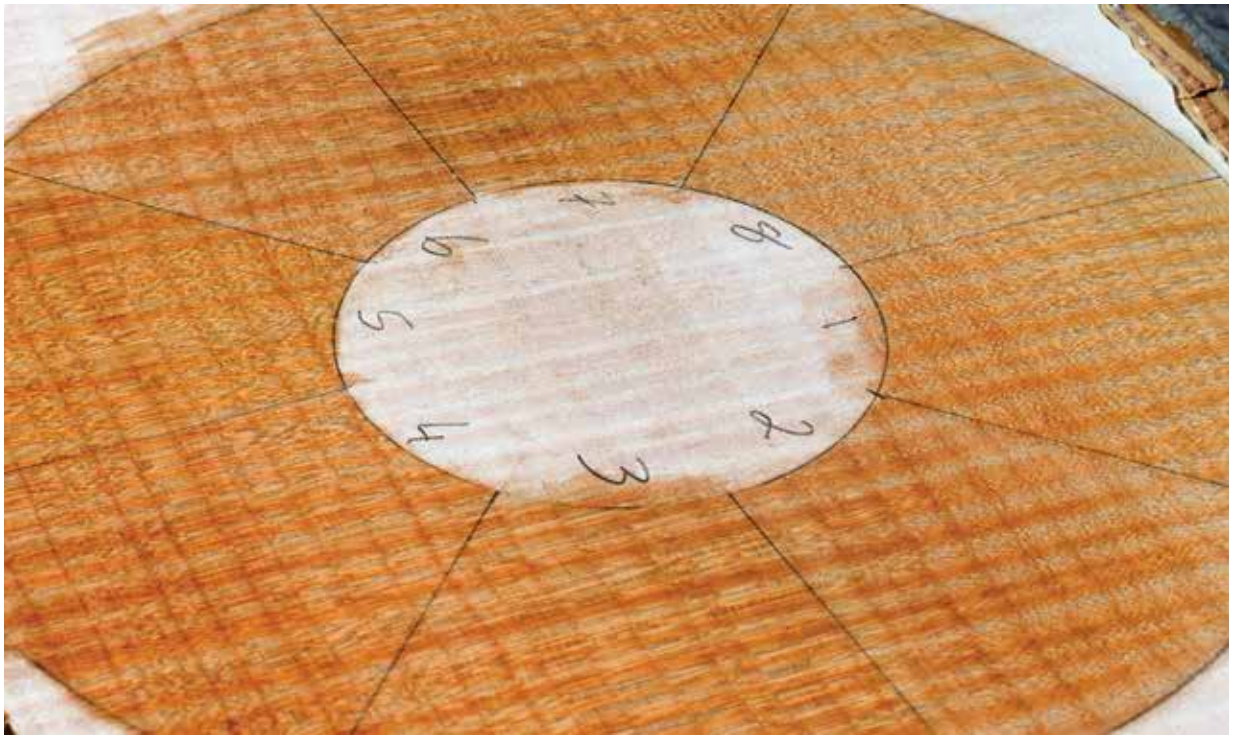
Oil finishes are forgiving to apply: pour (or wipe) them on and remove the excess oil before the finish begins to cure.

When it comes to the magic moment of applying a finish to a turned piece of wood, most turners reach for an oil-based product. Oil-based finishes are well suited for turnings because they are relatively forgiving in their behavior and the first coat can often be applied while the piece is on the lathe. Oil finishes enhance grain contrast and bring depth and warmth to wood, contributing to the aesthetic gratification we all get from the medium. But narrow your choices down to an "oil-based finish" and you will still be faced with a bewildering number of options. Add in the abundance of misleading information from finish manufacturers, and it is no wonder many turners settle on one or two options and use those without a lot of further thought. If a perfect finish existed, we would all be using it. The choice of finish is almost always a compromise, and it is good to know the tradeoffs you are accepting.

Types of oils

To be suitable for finishing, oil should cure after it is applied to wood. Curing is a chemical reaction mediated by oxygen that results in the cross-linking of fatty acids in the oil. The result is a change in state from fluid to a solid polymer of interlinked molecules. But not all oils cure. In fact, oils can be classified into one of three groups: non-curing, semi-curing, and curing.

Non-curing oils include mineral oil, peanut oil, and olive oil. Applied to wood, these oils remain viscous and can transfer to other surfaces (hands, tablecloth, furniture), will limit options for repair (they inhibit glue adhesion), and in the case of natural oils, potentially turn rancid and impart undesirable odors or



Six coats of eight finishes applied to curly maple. (1) Boiled linseed oil (3) walnut oil and (6) Watco Danish Oil show little or no build and a matte surface. (2) Thinned tung oil and (4) polymerized tung oil are beginning to build a semi-gloss sheen. (7) Minwax Antique Oil Finish and (8) Formby's Tung Oil Finish show a semi-gloss surface. (5) The shopmade thinned oil/varnish blend shows the most surface build and a gloss surface.

flavors. Because they never harden, they provide no protection from physical damage.

Semi-curing oils include corn, sesame, soybean, safflower, and sometimes walnut oil. In their raw form, these oils partially cure and remain soft. Manufacturers incorporate some of these oils into wood finishes with the addition of drying agents, thinners, resins, or heat treatment, all of which speed curing and help produce a harder finish. This is also our first opportunity for confusion. Walnut oil is sometimes semi-curing and sometimes a curing oil. This is probably because the concentration of the polyunsaturated fats that moderate curing may vary depending on growing conditions and processing. Walnut oil for finishing should contain enough of the fats to make it a curing oil. When these oils are destined for the grocery store, manufacturers include additives to inhibit curing to extend shelf life. Purchasing from the grocery store moves these oils into the non-curing category.

Curing oils include linseed, tung, and walnut oil. Applied to a porous surface, all of these oils cure to a matte finish. They also remain relatively soft in comparison with other finish options such as varnish.

Types of oil finishes

Raw oil

Raw oil is rarely applied to woodturnings because it cures slowly—on a time scale of days- (walnut, tung) to-months (linseed). Raw oils do not build a film surface on the wood, and therefore offer negligible protection against physical damage. Linseed oil imparts a yellow tone and will continue to yellow with age. Tung oil imparts some color to wood but less than linseed oil, and its color changes little with age. Walnut oil imparts the least color and it is non-yellowing. Tung oil provides some water resistance after about six coats; walnut oil offers little water resistance; linseed oil offers the least. These characteristics tend to accompany these oils as they are combined with other products or are processed to improve their application and finishing qualities. The greatest utility for these oils in the turner's shop is that they constitute the basic ingredient for creating your own finish (see sidebar).

Thinned oils

Thinning linseed, tung, or walnut oil with solvent makes an easily applied wipe- or brush-on finish that cures quickly. This approach to finishing is simple, inexpensive, and produces a matte finish *(Photo 1)*. Successive coats are easy to apply, and waiting about a day between coats assures adequate curing between applications. This is my preference for production pieces, and I often apply only one coat of finish with the understanding the user will soon need to oil the piece if the object is used for food service. ▸

After ten years and about a dozen maintenance coats of thinned tung oil, my fruitwood rolling pin remains a pleasure to use.

Five coats of an oil/varnish blend and a surface film has begun to build a semi-gloss surface on this quilted-walnut bowl.

The first coat of thinned oil can be applied on the lathe. A shop towel held against the rotating work will generate heat to speed the rate of curing. I often follow the oil with a paste wax. This provides luster and modest protection for the piece as it is handled in a gallery or craft show. Be aware that wax can trap moisture and encourage mold.

Boiled linseed oil

Once upon a time, linseed oil was boiled to hasten its curing rate. These days, manufacturers blend linseed oil with metallic driers to achieve the same objective, retaining the name despite the absence of boiling. More coats can be applied in a far shorter time, but the result is still a soft finish that offers negligible water resistance.

Polymerized oil

The curing process can be hastened by heating raw oil to about 500˚F (260˚C) in the absence of oxygen to produce polymerized oil. So modified, these oils look and behave more like varnish than raw oil. Polymerized oil cures quickly, can be thinned for easier application, will build a surface film, and is well suited for turned objects. Mahoney's Utility Finish is a walnut oil product that appears to be at least partially polymerized during the manufacturing process, improving its curing rate. Lee Valley markets polymerized tung oil as well as raw walnut oil, and provides directions for heating the latter prior to application to speed curing.

Oil/varnish blend

Manufacturers create varnish by heating oil combined with a synthetic resin. The resulting product is no longer oil, but a new substance with its own properties that make it one of the most durable finishes, but also challenging to apply well. Manufacturers blend oil with varnish to capture some of the beneficial properties of each. Minwax's Antique Oil Finish, Tung Oil Finish, and Watco's and Deft's Danish Oil finishes are four readily available oil/varnish blends.

Most of these products allow subsequent applications in eight to 24 hours. Each gives a slightly different appearance to the finished wood, probably due to the quantity of resins in the varnish, and the type of oil each manufacturer uses. Some of these products will build a surface film after numerous applications, while others show little or no build after five applications. Imaginative marketing creates a lot of confusion in this and the wiping-varnish categories. Danish oil contains no Danes, but is a blend of linseed oil and varnish. Lax regulation permits a product to be labeled "tung oil finish" (for example), yet contain no tung oil at all.

Wiping varnish

Finish guru Bob Flexner defined this category of finish to distinguish products combining varnish and thinner. The products are not truly oils, but are often marketed as such. Products in this category include Formby's Tung Oil Finish, Waterlox Original Formula, and General Finishes Salad Bowl Finish. These finishes build a surface film, creating a satin or glossy surface. If you wish to achieve a varnished look, this is a good way to go. While glossy surfaces may attract buyers, they create a maintenance challenge for non-woodworkers

when the film surface becomes worn or damaged, and worn items may get relegated to the next yard sale.

The manufacturers' goal here, as with oil/varnish blends, is to make these products easier than varnish alone to apply. On non-horizontal surfaces, these finishes need a thin application to prevent sags or drips, thus requiring more applications to build depth. These finishes are dust magnets before they cure, and invariably result in captured dust and lint. Sanding lightly between applications with 320-grit abrasive smoothes the surface, but the last finish application must be kept dust-free until it cures.

Choosing an oil finish

I have developed a decision-making process that helps me narrow finish options before I start work on a piece. I first consider how the piece will be used—is it utilitarian or decorative? For utility ware, I stick with one or two coats of thinned oil and a coat of paste wax. Buyers will readily understand that basic care requirements come with owning treenware. A thinned-oil finish is easily maintained by a non-woodworker.

Because decorative pieces will receive no exposure to water and only an occasional dusting, any oil-based finish will work, so other factors come into play. What sort of surface appearance do I want to achieve? Thinned oil produces a matte finish, polymerized oil and some oil/varnish finishes can build a film surface that is generally in the semi-gloss range, and wiping varnish can build to a glossy finish with noticeable depth, but may also leave wood looking like plastic.

Will there be voids in the completed piece (typical of burls), or natural bark inclusions or a bark rim? Does the wood contain spalt that will soak up finish at a different rate? Does the wood have large pores like oak? Getting an even finish on a porous surface is a challenge, especially with a film-building finish. I tend to reach for an oil/varnish blend in this situation for a little more luster than thinned oil and easy application over bark or in voids. Spalted wood can turn a sickly yellow color when finished with oil; many turners reach for an alternative, including buffing with wax, applying a water-based finish, or oiling only the solid wood surrounding the spalt.

How much time can I invest in this piece? If I am making a piece for market, I consider the potential return on my investment in time and materials—the quicker the finish, the greater the return on investment. But this must be balanced against visual appeal for the buyer and my own sense of aesthetics. In increasing order of time and expense required, oil-based finishes go from thinned oil, to oil/varnish and polymerized oil, to wiping varnish.

Domestic or tropical hardwood? Many tropical hardwoods contain non-curing oils that foil our finishes, inhibiting curing and leaving the wood surface gummy. The best alternative may be no applied finish. Many of these species can be brought to a beautiful natural finish simply by buffing. A coat of paste wax will offer some additional protection. Another trick for oily timbers is to first apply naphtha or acetone to remove the natural oils from the surface of the wood, and immediately follow up with an application of finish. I tend to reach for an oil/varnish blend or polymerized oil in this situation—both cure fairly quickly, and I hope before those natural oils rise to the surface again!

Finally, I recommend two exercises to improve understanding of finishing options. If you are curious about how a finish will cure, take a piece of glass or a metal lid and apply a few drops of finish. ▸

The magic moment—when the first coat of finish pops the grain and all the promises of beauty are fulfilled.

Do this with several different finishes on the same surface (label them), and then give them a few days to cure. The cured drops can be tested with a nail to see how hard they have become. Another trick is to create a finished surface on a turning before reaching the final dimensions. To this surface, I apply a few of my finish options in strips that go all the way around the form. This lets me evaluate how each finish will look on both sidegrain and endgrain. After making a decision, I carry on with turning, removing the treated fibers.

Applying an oil-based finish

Application of oil-based finishes is simple and forgiving, which is a big part of their appeal. Most manufacturers recommend a wipe-on/wipe-off process with a specified waiting period before recoating. The idea is to liberally coat the surface of the piece, allow five to 10 minutes for the liquid to enter wood pores and saturate fibers, and remove the excess before it becomes gummy. The curing piece should be checked periodically and any oil bleeding out of the pores should be wiped away. Multiple coats increase build and any protective qualities the finish offers.

Food safety

This is another arena in which misleading marketing and myth rule supreme. All finishes are safe for food contact after they have cured, which occurs in 30 days or less. To determine if a finish has cured, plant your nose against the finished surface and inhale. If you can smell the finish, it has not cured. The Food and Drug Administration (FDA) thoroughly addresses food safety and finishes in a bulletin that is worth printing and keeping on hand, especially if you market your work (www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?FR=175.300).

A related topic is the concern over the potential allergenic properties of nut oils. Again, this concern is covered under the FDA's consideration of food safety. Proteins in nuts can cause an allergic response. These proteins are fairly delicate and exposure to high heat or organic solvents will modify them. The cross-linking that occurs during curing is the decisive step. Cross-linking changes the fundamental nature of the proteins, making them unavailable to react with other molecules, including the receptors in the human body that spark allergies.

Shop safety

Linseed, tung, and walnut oils, limonene, and mineral spirits are all relatively mild oils or solvents. Basic handling precautions are still warranted because these products are concentrated, and sensitization can come from cumulative exposure. Solvent-resistant gloves, eye protection, and a fresh air supply are minimum requirements. Applying commercial finishes containing stronger solvents should include a respirator that filters organic vapors.

Oils, solvents, and waxes are flammable. Take extra care disposing of oil-soaked rags as rapid oxidation can cause spontaneous combustion. Deposit oiled rags in a water-filled can or lay them out flat to cure before discarding. ■

Don McIvor is a full-time turner and artist living in Washington. He can be reached through his website, mcivorwoodworks.com.

Shopmade finishes

Blending my own finishes allows me to use ingredients that are relatively benign, minimizing exposure to harsh chemicals. I can control the ratio of the components, affecting the rate of curing or surface build of the finish. My personal preference is for tung oil (water resistance, durability, ready availability). For a solvent I use limonene (or citrus solvent, *not* citra solve—a finish stripper), which is pressed from orange peels. Experiment by substituting raw walnut or linseed oil, or use mineral spirits or turpentine instead of limonene.

Thinned oil

1 part raw oil
1 part solvent

This is a great finish for treenware. With tung oil as a base I also use it on wood trim, floors, natural tile, and concrete countertops. It is versatile! The shelf life is at least six months, although I never keep it on hand that long. Label the container.

Thinned oil/varnish

1 part raw oil
1 part solvent
1 part satin or gloss varnish

This finish is easily applied with a shop towel, cloth, or varnish brush, and readily builds a surface film. The oil/varnish ratio can be altered to change application qualities or build properties. My biggest challenges are keeping dust out of the finish before it cures, and the short shelf life. I mix only what I can use in 24 hours.

Paste wax

2oz (59ml) raw oil
0.07oz (2g) carnauba wax
0.6oz (17g) beeswax
2oz (59ml) solvent

This recipe requires heating flammable ingredients! Use low heat and a double boiler **in the absence of a flame** and do not leave the pot unattended. Gently heat the wax and oil in a sacrificial pot until the wax has melted; remove from heat and stir in the solvent. Pour this mixture into a small, large-mouth container (a cosmetics jar works well) and let cool. Label the jar. Varying the ratio of waxes to oil/ solvent changes the consistency of the product. Shelf life is about four months.

Hemispheres of Influence: Woodturning at Yale

David M. Fry

Scott Strobel sits atop storm wreckage along New Haven's Hillhouse Avenue, "the most beautiful street in America," according to Mark Twain and Charles Dickens. Once known for its stately elms, the avenue was replanted largely with oaks.

With only three years of bowl making behind him, Scott Strobel has chiseled out an enviable niche in his craft. His turned wood vessels can be found in the homes of heads of state, diplomats, famous actors and authors, university presidents, and corporate executives. Of the hundreds of pieces finished in his short studio career, all but eight have sold. Standing orders await fulfillment from his log pile. Twelve-hour days in the shop are not uncommon.

The iconic ginkgo in the Timothy Dwight courtyard at Yale lost much of its crown during Hurricane Sandy. All turned pieces from the remains have a guaranteed market.

The maker defers to the institution in the signature.

Although he describes himself as a production turner, each bowl claims a distinct provenance that decisively separates it from any semblance of outside competition.

Like many part-time studio professionals, Scott refers matter-of-factly to his "day" job. In his case, however, it is anything but mundane. An award-winning professor holding down two endowed chairs in biophysics and biochemistry, he serves as university Vice President at Yale's West Campus in New Haven, CT. Despite his heavy administrative workload, he has built up a woodturning business that not only sustains itself with ease, but also dovetails ingeniously with his role as a university officer. It would be difficult to name another woodturner, at least within American academia, who has so successfully fused personal and corporate interests at such a high level of productivity and influence.

Origins

In 2005, while seeking to furnish his new house, Scott became disenchanted with the quality of affordable furniture on the market. Already eager for a hands-on weekend hobby, he decided to make his own pieces. He filled his shop with tools, ploughed through back issues of *Fine Woodworking*, and began building woodwork that looks professionally crafted.

After satisfying his household furniture needs, Scott took a woodturning workshop at Craft Supplies USA in 2009. He had already worked on a lathe in high school, and his father was an avid pen turner and wood collector. Beyond that, turning satisfied a deep-seated desire to make pieces out of trees that he knew. When a rare walnut behemoth came down near his office, he milled the trunk into 4" slabs and began turning some

The Vice President stands outside his downtown office near an elm uprooted by Hurricane Sandy.

of it. He remembers thinking, with a fresh product at hand, "Look, a Yale Bowl," a pun on the university's fabled stadium. "So the idea stuck," he continues. "I got in touch with Yale to see whether I could license the university's name. Yale wanted a business plan, but it didn't hurt that I was associated with the campus. In the end, they let me license the Yale name for this particular purpose. My biggest customer is Yale."

Business plan

The heart of Scott's craft enterprise capitalizes on an advantage of green woodworking that few are in a position to exploit so successfully. As he notes, "Trees have an address." And at Yale, it is hard to overstate the historical and sentimental significance that staff, faculty, alumni, local citizens, and visiting dignitaries attach to the landmarks of the 300-year-old campus. Even when people don't recall specific trees at Yale, proximity to architectural landmarks may suffice: the ginkgo in the Timothy Dwight courtyard, the old sycamore in front of Mory's tavern, the oak outside the college dean's house. When storms, disease, or new construction topple these trees, a cultivated network of campus staff and students is primed to contact him. Sometimes the response is swift and enthusiastic. Thirty minutes after part of the courtyard ginkgo blew down (captured serendipitously on video by a student), the master of Timothy Dwight called to say he would take as many bowls from the wood as Scott could make.

Beyond commissions, Scott primarily markets his work through yalebowls.com. The website displays both finished pieces and source trees/sites before or after harvesting. Each completed object has a bio detailing age, species, distinctive wood features, and historical highlights of the campus location. The description, as well as ▸

> This has been one of the most fun things in terms of getting to know people that I ordinarily wouldn't experience. When it's all said and done, they own a piece of the campus, a piece of history.

the bowl bottom itself, displays two ID numbers indicating the work's sequence in the "upcycling" of a particular tree and the estimated quantity in the limited series. A spreadsheet tracks the inventory status for dozens of source trees.

Despite the appeal to exclusivity, Yale Bowls sell for rather modest prices. *Botanical Garden Black Walnut Bowl #56* (2½" × 15") costs $199, while *Phelps Gate Elm Bowl #14* (4" × 9") lists for $259. An Ezra Stiles beech fountain pen sells for $105. Because Yale does not incur any retail expenses for space or staff, it takes only a small commission from Scott's sales. The financial return, however, represents just part of the satisfaction. Scott says, "This has been one of the most fun things in terms of getting to know people that I ordinarily wouldn't experience. When it's all said and done, they own a piece of the campus, a piece of history."

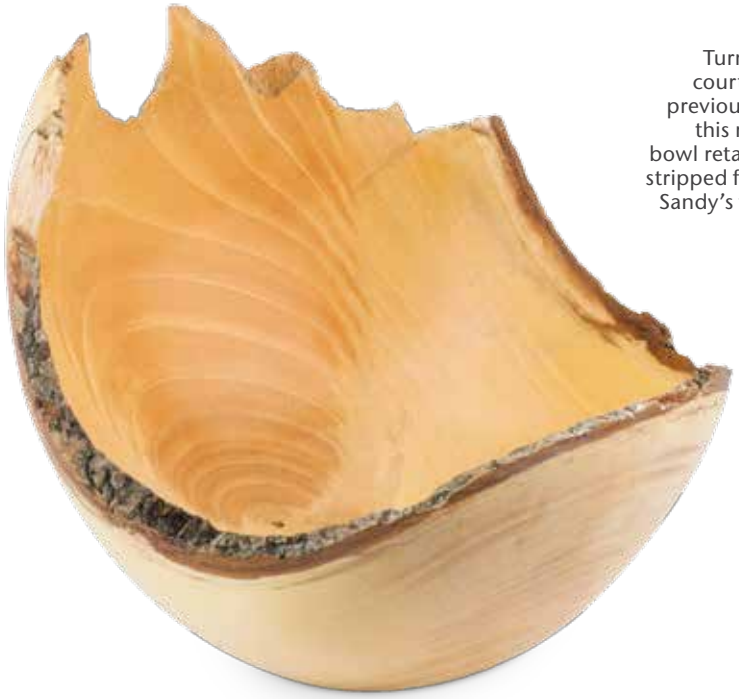
Back stories

The same energy and imagination that drive Scott's academic career infuse his turning enterprise. As reflected in the tree bios, he often researches his sources in depth. The sycamore at Mory's, for instance, showed up prominently in a 1912 photo, and Scott had to dig back to the 1830s to find an image of the tavern without the tree. Although the university conveniently maintains extensive archives of campus scenes, Scott also commissioned his photographer daughter to document standing Yale trees of note for future reference.

Such immersion in campus history positions Scott to create singular gifts for notable members and guests of the Yale community. Emmy and Golden Globe winner Paul Giamatti, who had recently played Hamlet at the university theater and separately narrated a documentary about the New Haven Green, received a Strobel bowl made from a fallen, well-known oak on the Green. A peculiar feature of the tree enriched the vessel's back story: It contained a human skull in its root ball. (The Green used to be a cemetery.) The eerie coincidence was not lost on Giamatti, who as Hamlet had encountered the skull of his old acquaintance Yorick in the famous gravedigger scene.

In some instances, Scott's abiding interest in pedigreed material emanates from far beyond the campus. Once he received a small weathered piece of the Brooklyn Bridge Promenade for assisting someone interested in replacing its wooden deck with sustainable tropical timbers. On another occasion, he bought some advertised sinker wood salvaged from the flooded lake channel in the Panama Canal. These two acquisitions didn't come together in Scott's consciousness until Yale decided to honor historian and author David McCullough with a distinctive gift. As fate would have it, McCullough had produced separate books on the Brooklyn Bridge and the Panama Canal. With the ultimate custom pen

Scott's attached studio brims with stacks of drying bowls churned out in Saturday marathons.



Turned from the courtyard ginkgo previously pictured, this natural-edge bowl retains the bark-stripped fracture from Sandy's fierce winds.

set in mind, Scott was delighted to tell the university President, "I have a really good present" for the occasion.

In the shop

Aside from his university connection and penchant for documentation, Scott operates much as the typical bowl makers who scavenge local woods at nominal cost, turn classic forms, and rely on the material and solid execution to attract customers. His selection of woods—maple, sycamore, beech, and even yew and ginkgo—would be familiar to experienced turners in the Eastern United States. Elm in particular often finds its way into the studio, given his location in the Elm City. American elms still line some New Haven streets despite the lingering blight, but other members of the Ulmaceae family also crop up locally, including Japanese, *Zelkova*, and Siberian elms.

With his 24"-swing Vicmarc, Scott generally produces unembellished, vaguely hemispherical vessels with either flat or natural edges. The footless bottoms bear the Yale Bowls logo and Scott's initials, as well as the tree ID numbers. Although he has made hollow forms, the extra time required doesn't seem to pay for itself. His bowls are always oriented on side grain and dried for months in rough form before finishing. He usually sends pen blanks to his son in Utah for turning.

Having left his lab bench to ascend the administrative ladder, Scott found another way to channel his passion for creative hands-on work.

A new frontier for turning?

Scott has been fortunate to develop his enterprise at an institution with an established interest in woodturning. Along with The Center for Art in Wood (formerly the Wood Turning Center), Yale launched the definitive "Woodturning in North America Since 1930" exhibition that appeared in Minneapolis; Washington, D.C.; and New Haven in 2001–2002. Recently, the Yale University Art Gallery mounted the Waterbury Collection of lathe work and sculpture in "Conversations with Wood." The vast American Decorative Arts Collection, including woodturnings, will eventually be transferred to the West Campus, which will house the new Center for Conservation and Preservation. Meanwhile, Berkeley College, one of the university's residential communities, boasts, "the finest woodshop on campus" and offers professional woodworking/woodturning instruction.

While other universities may lack this level of engagement in woodturning, many of them benefit from enthusiastic alumni and other donors who might value having a tangible link to the campus in their homes or offices. This opportunity likely applies to colleges across the board, but especially to those with long illustrious histories and broad-based endowments. The potential for woodturning to foster personal identification with these institutions lies not in technical virtuosity, but in selection of resonant materials, straightforward craft, and evocative storytelling. For much of higher education, a wellspring of memory and deep-rooted beauty remains largely untapped. ■

David Fry turns wood and writes near Washington, D.C.

Woodturning Legacies *Down-Under*

D Wood

Ashburton could justifiably call itself the woodturning capital of New Zealand. The township, fifty miles south of Christchurch, is home to two significant turning enterprises: Ashford Handicrafts Limited and the Lynn Historical Woodworking Museum.

Ashford Handicrafts, established in 1934, was innovative for its kitset wooden furniture and toys: Walter Ashford's concept, "make it yourself and save," enabled the mailing of small items, like stools and rocking horses, to a national market. In 1940, Walter was asked to design and make its first spinning wheel with the aim of spinning wool to clothe New Zealand servicemen and prisoners of war. Despite a downturn after WW II, renewed interest in spinning in the 1960s provoked the revival of Ashford's kitset spinning wheels; the subsequent development of a range of wheels and looms resulted in its products being exported around the globe. Today Ashford's turned components are produced in a highly mechanized environment. Nevertheless, the tradition of woodturning is still essential to the spinning of fibers and evident in the wheels' designs.

Not far from this heritage-based industry is lesser-known evidence of the heritage of woodturning. Housed in carefully maintained premises just south of Ashburton, the Lynn Museum opened to the public in the late 1990s to display the collection of woodworking tools amassed by Bob Lynn. Lynn's interest in the trappings of woodwork started when he was apprenticed as a carpenter and joiner when he was fifteen years old.

A woodworking career

In his memoir, *Woodworking: My First Seventy Years,* published in 1992, Lynn described how his father sent him off to his first job, the construction of a farmhouse, with "a hammer, square, saw, nail-pocket, and a pair of grey blankets." Lynn was "the boy" as well as the cook, and his days lasted from 5:30am to 9:00pm, when he laid his exhausted body onto a mattress made of two chaff sacks filled with chaff. His five-year apprenticeship saw him making dye vats for woolen mills, shafts for horse-drawn vehicles, wheelbarrows, and components for farm equipment, in addition to domestic joinery. During WW II, his deafness prevented enlistment, but his skills were in demand for the construction of the Ashburton Airport and a major army barracks. He started his own business in 1943, beginning with construction and joinery for the Ashburton Hospital; after the War he was part of government initiatives to increase and improve New Zealand housing. Eventually his focus became Lynn's Hardware & Joinery Limited, a business that was responsible for all the joinery (1969-1979) for the Executive Wing of the New Zealand Parliament.

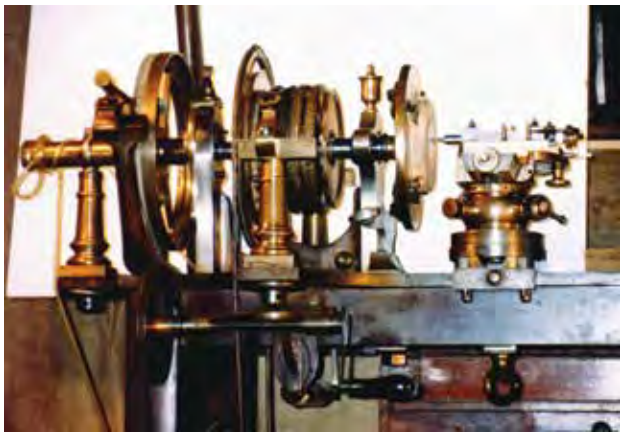
Bob Lynn, 2003. Bob was an avid turner well into his eighties and a life member of the Society of Ornamental Turners in London.

In the meantime, Lynn's tool collection accumulated in backyard sheds. He visited farm and garage sales, attended auctions and was given estates. By the mid 1970s, with intensified focus on acquiring lathes, he engaged an agent who bid on his behalf at major London auction houses. Since moving to the present location, the Lynn Historical Woodworking Trust has increased its holdings in order to "stimulate, preserve, foster, facilitate, and encourage public interest in and knowledge of woodworking, woodturning, and commercial turning." The Trust also has a library of more than 2,000 books, including the historic operating manuals that accompanied ornamental lathes, plus other sometimes-rare publications.

The Lynn Museum collection

I lucked into one of Bob Lynn's museum tours in 2009. He died in 2012 at the age of 97. Now, Lindsay Holland, a trustee, ably fills his father-in-law's shoes as a guide. Holland believes he is a guardian of "one of the best collections in the world" of a range of woodworking and turning equipment. While museums like the Hermitage in St Petersburg, the

Bower Rose Engine lathe c. 1825.



Detail of the head of the Bower Rose Engine lathe.

(Left) Interior of the museum with small lathes in the foreground.

(Middle) Epicycloid geometric chucks for the Bower Rose Engine lathe. Museum personnel made objects using these chucks to demonstrate their capability.

(Right) Interior of the museum with glass cases containing Stanley tools in the background.

Louvre in Paris, and the Smithsonian in Washington, DC, have significant ornamental lathes and other woodworking equipment, they are seldom, if ever, on display. By contrast, the collection in Ashburton can be accessed simply by phoning for an appointment.

The holdings include two Holtzapffel and Deyerlein (H and D) lathes from about 1824 and seven Holtzapffel five-inch common- and screw-mandrel lathes that are between 85 and 180 years old. The very existence of these lathes is noteworthy since only 2,900 Holtzapffels—each was numbered—were manufactured and half of them were melted down for their brass and bronze during World War I. Lathes were the "toys" of the nineteenth century and wealthy New Zealand farmers, made rich by the export of agricultural products to Europe, consigned such luxury commodities to the returning ships. Fortunately, the Holtzapffels that made their way to the southern oceans were not repatriated for the smelting pot.

One of the treasures of the Lynn Museum is an ornamental lathe sent for the British Pavilion at the New Zealand and South Seas International Exhibition in Dunedin in 1925. It is similar to a Holtzapffel Rose Engine Lathe but marked "J. Bower," and was accompanied by Spanish mahogany cabinets with two geometric chucks and attachments, 120 H and D hand tools with ivory inlays, and many extras. Following the exhibition, the lathe stayed in New Zealand. When the purchaser's son inherited it, corroded and filthy in an open farm shed, he offered it for sale to the museum. The lathe has more than 300 individually shaped cutters used in cutting frames and was intended for complex engraving on curved surfaces such as watches and silverware. By means of a Maudslay spiral screw attachment, it could also produce some of the first metallic screws. Holland's research has shown that it was probably made in London in 1825 by John Bower for the Earl of Harborough. A restoration team took several years to bring the rose engine lathe back to working order and figure out how each of the accessories was used.

American lathes came to New Zealand via the Sears Roebuck catalog. The museum has a Barnes utility lathe from the 1870s that may have been purchased by mail order. Unlike ornamental machines that were used for luxury and decorative goods, the Barnes facilitated the manufacture and repair of farm equipment. Early metalworking lathes are represented by the British companies, Drummond and Myford. Several homegrown lathes confirm New Zealand's reputation as a country of adept do-it-yourselfers. The Lynn Trust continues to consult auction catalogs and visit estate sales in hopes of finding unique historic lathes to add to its collection.

The rows and rows of turning chisels, wood and metal planes, spokeshaves, rulers, gauges, squares, levels, saws, and braces tell silent stories about the trades that flourished in more agrarian and nation-building times. The collection's gleaming American Stanley tools also attest to the care that workmen took in the instruments of their trade. The quantity of museum-quality tools and equipment accumulated by Bob Lynn is a testament to the handcraft skills and ingenuity that constituted artisanry. The intricate outputs of the early lathes and the intellects that produced them challenge our twenty-first century beliefs that the computer is the epitome of human intelligence. The Lynn Historical Woodworking Museum is a worthy destination for woodturners keen on learning about their forebears, and those who respect the legacy necessary to get from then to now. ■

D Wood earned an MFA in furniture design from the Rhode Island School of Design in 2000 and a PhD from the University of Otago in New Zealand in 2012. Her research into studio furniture situates New Zealand practitioners within the context of craft and the international community.

This undated photo shows Bob Lynn showing off some of the 1,200 wooden planes in the Museum's collection.

Members' Gallery

Ray Prince, Ontario

I turned this nest of bowls from roughed-out green maple. After the bowl blanks dried for a few months, I proceeded to finish-turn in my usual manner by first truing up the spigot and remounting the bowl into a chuck. As I began re-turning the outside of the first bowl, I realized there might be a way to retain the oval shape of the outside rim, which was caused by shrinkage in the drying process.

At a calculated place near the rim, I moved my gouge in a smooth outward curve to leave the outer rim oval. After turning the top of the rim flat, I finish-turned the inside of the bowl and sanded inside, as well as the lower part of the bowl's outside. I sanded the oval (out-of-round) area by hand.

This approach lends itself best to large, low-profile rough-outs in woods having a high shrinkage rate and a generous wall thickness.

Untitled, 2012, Norway maple, 4¼" × 16¼" (11cm × 41cm)

Dennis Ciesielski, Wisconsin

I especially enjoy turning honey locust. This wood, however, does not always cooperate with the plan of a woodturner—during drying, the bowls independently moved.

I could have just tossed the bowls into my scrapwood box for my neighbor's woodstove, but I let them sit in my shop for a while. Then, I had an inspiration. Since I also enjoy doing metalwork, I decided to tell a story about these four bowls, which I titled *Just Firewood?*

Just Firewood?, 2013, Honey locust, nickel silver, 1½" to 2" (4cm to 5cm) tall, 4¼" to 5½" (11cm to 14cm) dia

Photo: Norma Larrabee

Pascal Oudet, France

My work is inspired by the weathered aspect of natural materials, such as wood on old barns or stones along a river. I use wood from carefully selected trees and turn thin-walled forms, which I sandblast to transparency. This process emphasizes the growth rings, revealing the history of the trees.

Let the Sunshine In, 2013, Oak, 9" × 7" (23cm × 18cm)

Untitled Bowls, 2013, Oak, 3" to 6" (8 cm to 15cm) dia

The Nest, 2013, Oak, 8" × 25" (20cm × 64cm)

THE FACTS

Lyle Jamieson

About Hollow Forms Turning Systems

History

In 1996, Lyle Jamieson started producing a boring bar hollowing system with a laser-assisted measuring device that changed how hollow form turning is done. This was revolutionary. There were turners in that era that were using home-built boring bars that were so big and heavy that the turner could not hold the handle up and still have control and accuracy. Lyle took this stabilized platform approach and shrunk it down so anybody could afford to do hollow forms without sitting on the lathe and beating up their bodies in the process. To keep the price down, Lyle's system is low on glitz and high on function - it works! One important aspect of Lyle's boring bar is, it is MADE IN USA! There have been a number of boring bar systems that have come and gone in recent years. You can count on Lyle being around when you need help.

What's the difference?

Scale

The ¾ inch diameter boring bars have been the standard for decades of hollowing. They allow the most flexibility for getting into relatively small mouth openings and can reach out over the toolrest to hollow without vibration in most traditional shapes. Lyle's straight bar creates stability, strength, and accessibility. It is safe to use with no moving parts that create pinch points. At the next symposium you attend, you can look out over the instant gallery room and know you can turn any shape you see out there. What's the difference?

Accessibility

It is important to open up possibilities with your tools, not limit them. Lyle's swiveling tip tool holder allows an infinite range of cutting motion for the efficiency of the 3/16 inch cutting tool to reach any shape vessel imaginable. The boring bar and backrest support are versatile enough to undercut shoulders without constant fiddling. Lyle has developed the cutters with 3 ranges of reach with one boring bar. No need to purchase special boring bars to access the different shapes desired. What's the difference?

Torque Arrest

Lyle uses a "D" shaped handle torque arrest method because it spreads out the considerable twisting forces with a broad brush. When the cutter is positioned around to the left to undercut a shoulder or reach into that hard to reach spot through a small hole, the torquing forces can get intense. Lyle wants the fingertip control to clean up tool marks and smooth the inside contour of the vessel. What's the difference?

Physical Effort

It can't get any easier. The Jamieson system allows you to stand comfortably in front of the lathe with fingertip control to reach any desired hollow form shape. No need to get a stiff neck and sore back leaning over the lathe looking into the entry hole. No need to sit on the lathe and hang onto the handle with a death grip. It is all about the fun. You do not need to work hard hollowing any more. What's the difference?

The Laser

Everyone knows the benefits of laser measuring. It is no longer necessary to work blind in a shaving-filled hollow form. The laser puts you in complete control of the wall thickness. Never turn through the side of a vessel on which you have worked for hours to get the outside shape just perfect. The laser must be easy to set, quick to set, and accurately set. The laser, in real life use, must be reset often and accurately to do uniform, thin-walled vessels. Some lasers take three hands to set them. The laser can "see" through the waste wood and show the shape and depth of the inside bottom of your vessel. What's the difference?

Education and Backup

The Jamieson system has Lyle with it and behind it. Lyle has been a respected, reliable educator for decades. He has a popular instructional DVD that covers the techniques of the boring bar system and the use of the laser measuring device. He publishes a monthly newsletter with tips and tricks on hollowing as well as a Question and Answer section covering a wide range of topics. Sign up for his newsletter at www.lylejamieson.com or view archived copies. Lyle has been published many times in most of the woodturning publications with articles on subjects ranging from preventing catches to carbide cutter techniques. Lyle was a featured demonstrator at the AAW symposium in San José 2012 and participates at many regional symposiums either demonstrating, as a vendor, or both. People that have the Jamieson System are considered Part of the Family. What's the difference?

"It's All About The Fun!"

Summary

As Joe Friday said: "Just the Facts, ma'am, nothing but the facts." The Jamieson hollowing system is the best, easiest to use, easy to set up, inexpensive, comes with instructions. Set up correctly it will never get a catch. Children and young turners have enjoyed it for years. One hundred percent satisfaction guaranteed. Ask anybody that has one, "What's the difference?"

Lyle Jamieson is a full-time woodturning sculptor & instructor from Traverse City, MI. He is President of the Northwest Michigan Woodturners(tcturners.org). Lyle is known for his figurative sculptures & for the Jamieson boring bar & laser measuring system. He has been a featured demonstrator at many AAW & Regional Symposia across the country. For more about Lyle, visit: www lylejamieson.com

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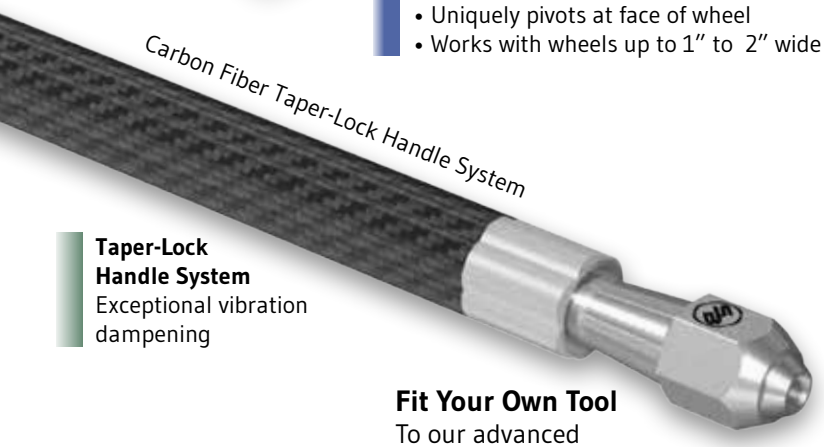

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PAUL S. PETRIE JR.
NEW YORK

The designs of my hollow vessels are based on a vertical and horizontal grid pattern. Within the grid, I pierce appropriate-sized ovals or circles. The decreasing diameter of the form results in decreasing diameters of the circles. The raised wall surrounding the hollow form conveys an illusion of a protected perimeter.

Dave Grenier, a machinist, developed a hollow-turning system that allows me to work with a flat top on a hollow vessel. Dave passed away after completion of this vessel. In memory of him, I named this piece *Dave's Vessel*.

Dave's Vessel, 2013,
Maple, dye, 5½" × 5¾"
(14cm × 15cm)

REGISTRATION FORM • PAGE 1

☐ **YES**, I am traveling to Phoenix for the 2014 AAW International Symposium June 13–15 at the Phoenix Convention Center
Demonstrations end at 3:30 p.m. on Sunday, June 15

Full registration fee includes demonstrations, Instant Gallery, and tradeshow. Award ceremony ticket must be purchased separately.

Register online by June 8 at woodturner.org

Or mail by June 1 to:

AAW International Symposium
222 Landmark Center, 75 5th St W
St. Paul, MN 55102-7704

Phone: 651-484-9094 Toll free: 877-595-9094
Fax: 651-484-1724
Email: inquiries@woodturner.org

☐ **I would like to volunteer to help at the symposium.**

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STUDENT REGISTRATION Member ☐ $100

Student ID required (25 and under). Award ceremony ticket must be purchased separately.

YOUTH REGISTRATION ages 10 through 18 — With registered attendee ☐ Free

I plan to bring one youth for free, full registration. See the AAW website (woodturner.org) for special youth registration and parental consent forms.

AWARD CEREMONY, DRAWINGS, HORS D'OEUVRES

Through June 8, 2014	☐ $39
After June 9, on-site	☐ $49

Check the AAW website (woodturner.org) for updates.

☐ **I would like to volunteer to help at the symposium.**

For cancellation through May 15, 2014, a $75 processing fee will be deducted. After that date the registration fee is non-refundable except for medical emergency.

see you in PHOENIX

CONNECT

You asked for more networking opportunities. We heard you!

The 2014 AAW International Symposium in Phoenix offers you more social opportunities than ever before to connect, network, and just shoot the breeze with other members of the woodturning community.

Thursday
Welcome reception, free and open to all.

Friday
Live auction to benefit the AAW Educational Fund.

Saturday
Award ceremony, silent auction, and drawings.

- Light food and hors d' oeuvres
- Silent auction
- Prize drawings and awards

POP Auction will return to Symposium

- Time and day to be announced

JOIN US
June 13-15 in Phoenix
Make lasting connections with others who share your passion for woodturning.

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