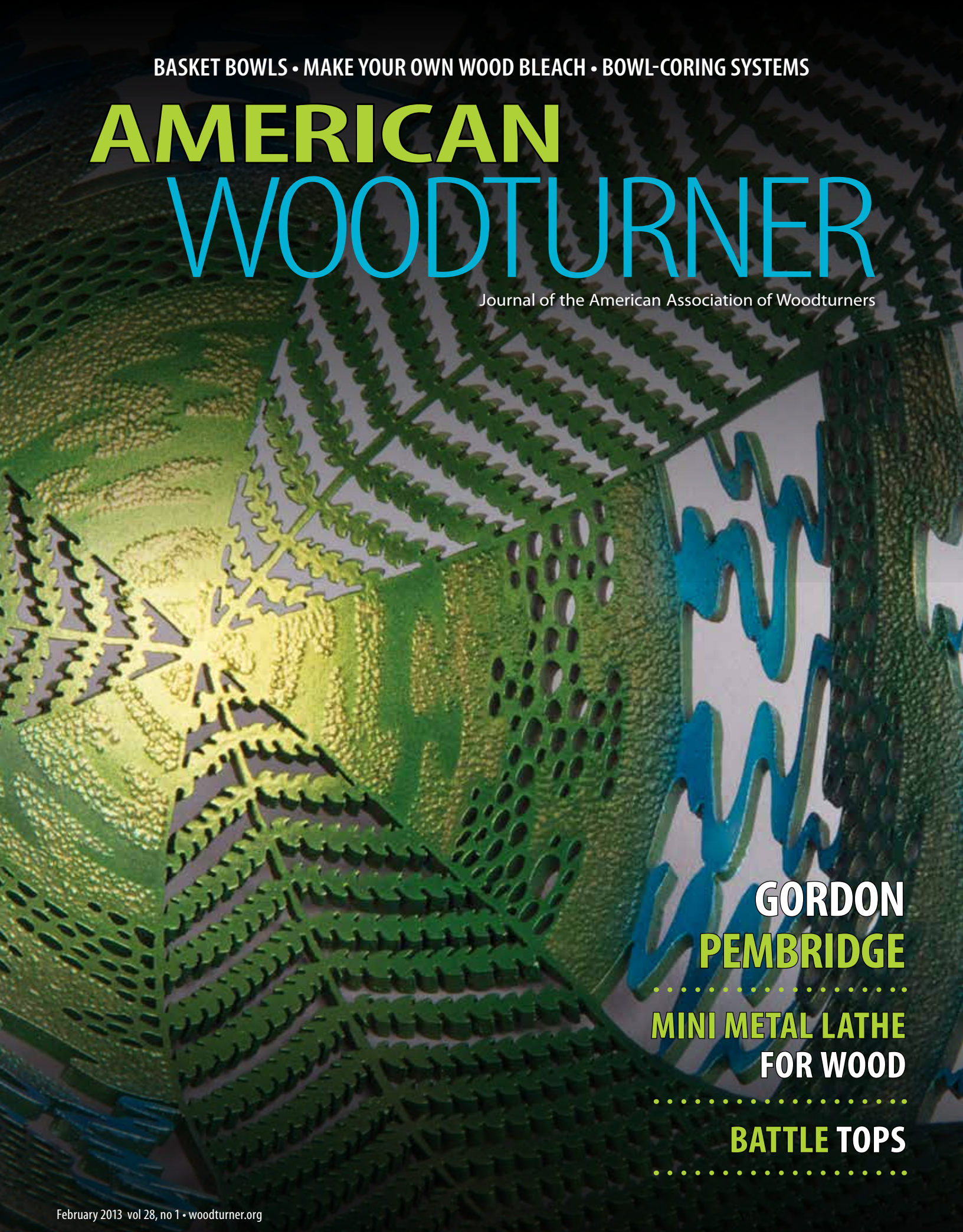
BASKET BOWLS • MAKE YOUR OWN WOOD BLEACH • BOWL-CORING SYSTEMS

AMERICAN WOODTURNER

Journal of the American Association of Woodturners



GORDON PEMBRIDGE

MINI METAL LATHE FOR WOOD

BATTLE TOPS

February 2013 vol 28, no 1 • woodturner.org

Michael Mode

I first tried turning in 1975 on a shopmade foot-powered lathe, got hooked immediately, and never stopped. I eventually acquired a motor-driven lathe.

Early on, I experimented with turning laminated stock to produce surface designs and after that devoted ten years to working with burls. I returned to lamination design techniques in the early nineties, mostly in lidded and winged vessels. Indian and Islamic architecture and design inspired me. A desire to make a large domed lid with a layered pattern led me into the bowl-from-a-plank method in the late 1990s. Since then I have made more than 1,500 bowls that I French polish on the lathe.

In 2006, I began creating sculptural pieces that are architecturally and organically inspired, some with lamination designs. In spite of their wide range of forms, I do all shaping on the lathe, one way or another. ■

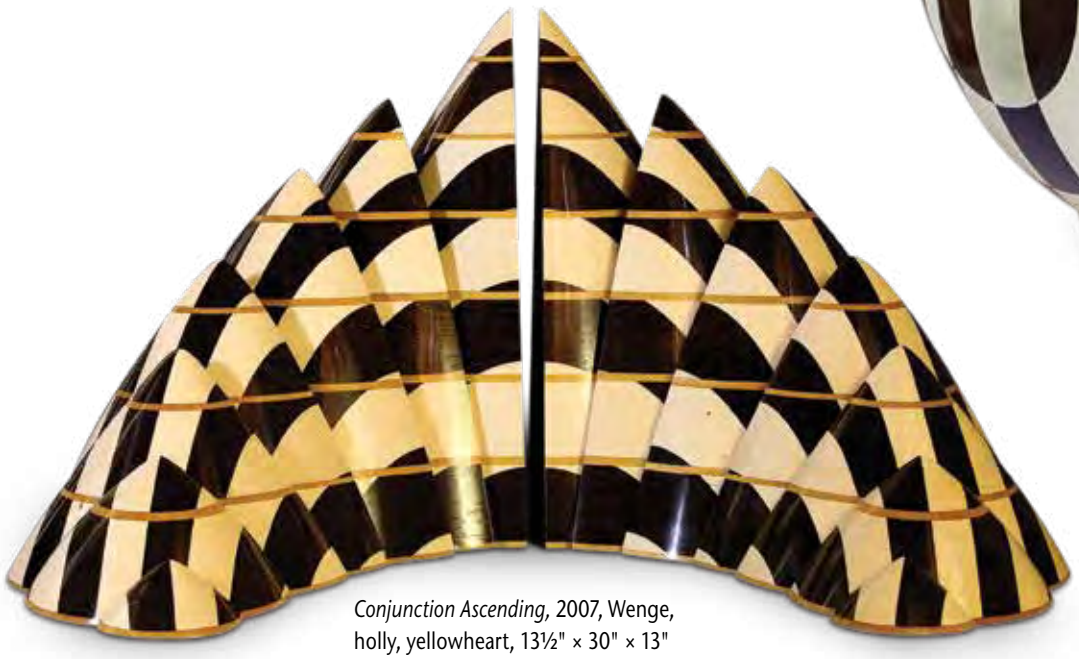
—Michael Mode

Mode frequently teaches his bowl-making method and French polishing techniques. See more of his work at michaelmode.com/index.html. Mode is an invited demonstrator at the AAW international symposium in Tampa, Florida, in June.

At Rest, 2011, Curly maple, mahogany, Indian rosewood, 21½" × 6½" (55cm × 17cm)

Lidded Vessel, 1989,
Norway maple burl,
cherry, 8" (20cm) dia

Akbar's Abundance, 1999,
Holly, wenge, purpleheart,
ebony, 21" × 15"
(53cm × 38cm)



Conjunction Ascending, 2007, Wenge,
holly, yellowheart, 13½" × 30" × 13"
(34cm × 76cm × 33cm)

Interactive sculpture of fourteen parts.

Akbar's Axis: Sikander Landing, 2012,
Purpleheart, mahogany, pink ivory,
holly, Indian rosewood, ebony, abalone,
mammoth ivory, 17½" × 20" × 12"
(44cm × 51cm × 30cm)

Jiggling Saturn, 2007,
Yellowheart, wenge, holly,
9½" × 14" (23cm × 36cm)

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

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February 2013 vol 28, no 1

FEATURES

AMERICAN WOODTURNER

Journal of the American Association of Woodturners

ASSOCIATION NEWS

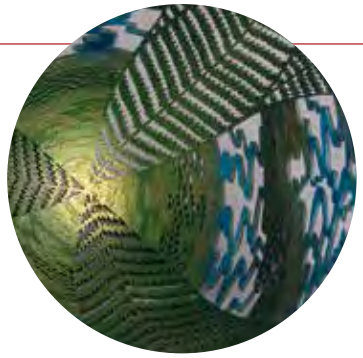
WOODTURNERS CHATTER

GALLERY

COVER

Cover – Gordon Pembridge, *Back Country Stream*, 2012, Macrocarpa, acrylic paint, 6" × 8" (150mm × 200mm)

Back Cover – Trent Bosch, *Intertwined*, 2012, American elm, 8" × 12" (20cm × 30cm)



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The AAW does not endorse any product featured or advertised in this journal.

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

Thirty years ago I saw a bowl-coring operation up close when I visited a family owned bowl-making factory in Vermont. The concept of creating multiple bowls from one turning blank is not new, but the systems available today are much improved. You will want to read John Giem's informative article if you plan to buy a bowl-coring system.

Taking the idea of removing wood even further, Gordon Pembridge pierces thin-walled vessels to create feather-light landscapes. Looking at the photos of his work left me wondering how much more wood could be removed and still give the sense of "bowl." He pushes the limits.

Instead of coring bowl blanks or piercing, Bill Ooms carefully sandwiches thin-turned cylinders together to create ornamental turned boxes. These will be featured in the April issue, but to set the stage, Ooms explains in this issue how to convert and use a metal lathe for woodturning. Practice turning precise boxes and you will be prepared for the next article.

Les Castell creates vessels from multiple pieces of wood; accurate cuts and glue are essential. He adorns the vessels with strips of wood that give them the look of baskets. Castell's intention is just that and is yet another interpretation, in wood, of the concept of baskets.

Cutting, gluing, adorning, coring, piercing, bleaching, coloring, and simply elegant bowls—you will find all of these in the pages of the journal, plus a game to play with turned tops. I like the challenge of offering something for every reader and hope you enjoy this issue—your fellow AAW members are the authors!

—Betty Scarpino

President's Letter

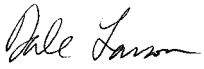
I sincerely thank retiring AAW Board of Directors members Warren Carpenter and Jean LeGwin for their service. Warren put in many hours as treasurer the past few years and will stay on as a member of the Finance Committee. Jean served six years as a Board member and will continue to serve as chair of the Publications Committee. The AAW owes both Warren and Jean big thank-yous for their extensive volunteer service.

I welcome two new Board members—Lou Williams and Rob Wallace. Lou teaches woodturning in Wisconsin and has a background in public relations, research, and communications. Rob, a woodturner from Iowa, is a professor of biology and a botanist. Rob is a long-time volunteer for AAW, with service on several committees, as assistant auctioneer at the symposium banquet, and as a presenter at past symposiums. Kurt Hertzog, a turner and teacher, was elected for a second term on the Board. Kurt chairs the Symposium Planning Committee.

By the time you read this, the Board will have finished its winter meeting in Tampa, Florida. Each year, we visit the upcoming symposium site to meet with local volunteers to help organize the symposium. Already, Ron Browning, Rudy Lopez, and their crew in the Tampa area have been working on the event. Kurt and Executive Director Phil McDonald have a fabulous symposium planned, as you can see from the list of worldclass demonstrators showcased on the following pages. April's journal will highlight the many featured demonstrators. In addition, the Professional Outreach Program will have eleven informative panel discussions and a themed exhibit. Mark your calender and plan to attend.

During the Board's winter meeting, we will have decided on priorities for 2013. Keeping the journal as a worldclass publication and the annual symposium as the best woodturning event anywhere are at the top of the list. As funding becomes available, the website will be upgraded, we will begin publishing books on demand compiled from articles in past journals, and plans for making the journal e-reader friendly will be implemented. Rob Wallace and his committee will continue AAW's focus on safety and are planning on a video. Continuing to make woodturning safe and fun will be on the agenda all year. Terry Martin, chair of Turners Without Borders (International) committee, is working on several outreach programs.

Make it your goal this year to help at least one other person become a woodturner or, if he or she already turns, help improve their skills. Education, teaching, and sharing are at the core of the AAW's mission. I hope 2013 will be a wonderful year for you and for woodturning.



Dale Larson,
AAW Board President

JOIN US IN TAMPA, FLORIDA, FOR AAW'S 27TH INTERNATIONAL SYMPOSIUM

JUNE 28-30

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

HOTELS

When you make a reservation, mention that you are with the American Association of Woodturners.

Tampa Marriott Waterside Hotel and Marina
700 S Florida Avenue, Tampa, FL 33602
888-789-3090 or visit resweb.passkey.com/go/WOOD
$139 single/$139 double/$159 triple/$179 quad

Hotel Tampa (formerly Hyatt Regency)
211 North Street, Tampa, FL 33602
813-225-1234 or visit resweb.passkey.com/go/AmAssnWoodturnersAnnualSympos
$119 single/$119 double/$144 triple/$169 quad

Embassy Suites Tampa
513 S Florida Avenue, Tampa, FL 33602
813-769-8300 or visit embassysuites.hilton.com/en/es/groups/personalized/T/TPAESES-AAW-20130623/index.jhtml
Group Name: AAW 2013 Annual Symposium
Group Code: AAW
$139 single/$139 double/$149 triple/$159 quad

INVITED DEMONSTRATORS

Nick Agar, England

- Viking Sunset Bowls
- PowerPoint Presentation on design, inspirations, insights, and happy accidents
- Platter with Airbrushed Leaves
- Multiaxis Wall Sculpture

Unlocking My Potential, Wood, metal, 2012, 27" × 2⅞" (69cm × 7cm)

Don Derry, Washington

- Romancing the Curve
- Reverse Laser Hollow Turning
- Christmas Ornament for Fun or Profit
- Rotary Texturing and Carving
- Donald Derry Retrospective on Vision and Design

Reborn, 2012, Wood, airbrush color, 24" × 12" (61cm × 30cm)

Trent Bosch, Colorado

- Vessels and Surfaces
- Sunburst Platter
- Vessels of Illusion
- Decorative Utility Bowls

Self Portrait, 2006, Elm, cast bronze, 18" × 9" × 10" (47cm × 23cm × 25cm)

Mark Gardner, North Carolina

- Turn a Hollow Form the Easy Way—Cut it in Half
- Surface Embellishments

Black Vessel, 2008, Maple, dye, 8" × 4" (20cm × 10cm)
Photo: Tim Barnwell

Cynthia and Michael Gibson, Georgia

- Turning and Embellishing an Asian-Style Footed Bowl
- Create a Beautiful Teapot

Teapots, various woods, various sizes
Photo: John Lucas

Keith Gotschall, Colorado

- Tortilla Holder
- Winged bowl
- Milk Stool
- Off-Center Platter

Tortilla Holder, 2012, Maple, 3" × 11½" (8cm × 29cm)
Photo: Caitlin Batty

continued

AAW 27TH INTERNATIONAL SYMPOSIUM IN TAMPA

Phil Irons, England

- Hollow Forms
- Surface Decoration and Coloring

Blue Slash, 2007, 12½" × 11" (32cm × 28cm)

Mike Kehs, Pennsylvania

- Asymmetrical Inside-Out Turning
- Carving for Turners
- Surface Embellishments

Forest Critters, 2011, Cherry, 6½" × 4½" (17cm × 11cm)

Glenn Lucas, Ireland

- Salad Bowl
- Bowl and Spindle Gouge—Sharpening & Shavings
- Plates and Platters
- Wet-Turned Thin-Wall Bowl

Glenn at work

Photo: Cornelia McCarthy

Mike Mahoney, California

- Hollow Forms With Threaded Lids
- Bowl Coring With the Kelton Center Saver
- Large Green-Turned Calabash Bowl
- Making Heirlooms

André Martel, Canada

- Wine Goblets
- Translucent Lampshades
- Turning Glassblower Molds

Ab Jo Charme, translucent lampshade, 2010, European hornbeam, 6" × 14", (15cm × 35cm)

Michael Mode, Vermont

- Make a Bowl From a Plank—The Easy Way
- Make a Bowl From a Plank—The Hard Way
- Shellac-Based French Polishing on the Lathe

Flowering Mountain, 2012, Mahogany, 12" × 20" × 10" (30cm × 50cm × 25cm)

Tania Radda, Arizona

- Line and Design in Woodturning
- Texture and Color in Art

Spring Training, 2006, Basswood, ash, leather, automotive paint, 4" × 8" × 7" (10cm × 20cm × 18cm)

Photo: Ken Manicki

Nesting bowls, 2010, Mormon poplar, 8" × 22" (20cm × 55cm)

Mark Sfirri, Pennsylvania

- Spindle Turning Basics
- Multiaxis Spindle Turning Basics
- Rolling Pin With a Twist
- Multiaxis Candlestick
- Multiaxis Baseball Bat
- Inside Out Turning With a Twist

From the Banks of the Wabash, 2008, Lemonwood, paint, 6" × 6" × 8¾" (15cm × 15cm × 22cm)

Steve Sinner, Iowa

- High-Efficiency Deep Hollowing—From Green Wood to Wet Rough-Turned Vessel
- Deep Hollowing—Dry Rough Vessel to Finished Work

Frazzled, 2010, Hickory, acrylic paint, gold leaf, 12¼" × 4½" (31cm × 11cm)

Hans Weissflog, Germany

- Saturn Box
- Drunken Box
- Pierced-Through Box

Boxes, 2012, African blackwood, assorted inlay, various sizes

Wilmington Woodturners Chapter Supports Continuing Education

The Wilmington Area Woodturners Association (WAWA) was founded to support and build a community of new and experienced woodturners through teaching, training, and demonstrations. Our mission is twofold: (1) provide a forum by which members can enhance their knowledge of woodturning by sharing experiences and techniques with each other and through continuing education, and (2) broaden awareness and knowledge about the craft of woodturning in the Wilmington area communities. In furtherance of this mission, WAWA provided master woodturning instructors to teach a woodturning course at Cape Fear Community College (CFCC).

Club members reached agreements with administrators at CFCC to offer continuing education credits to students and provide facilities to host an Introduction to Woodturning course. With decisions made on the course details—class size, location, dates, and times—WAWA volunteers started developing the course curriculum.

Alan Leland, past president of the North Carolina Woodturners Guild and a professional woodturning instructor, provided a "train the trainers" class to club volunteers. This class provided teaching skills, ideas that facilitated the development of the course curriculum, and detailed lesson plans.

The WAWA chapter provided all of the lathes, tools, and shop equipment. The number of available lathes limited the class to eight students, however 38 people signed up! CFCC will offer the course again and WAWA will again provide volunteers and equipment. Five of the students joined our chapter.

The instruction at CFCC is the most recent of many WAWA efforts to reach out to the communities in the Cape Fear region. In 2011, WAWA volunteers spent five weeks working with Wilmington Christian Academy assisting eleven- and twelve-year-old students in making honey dippers, bowls, goblets, and ornaments. Later that year, volunteers worked with thirty fifth-grade students at the Cape Fear and Castle Hayne Elementary Schools to make and paint tops and ornaments. In December WAWA volunteers worked with students at the Landfall Elementary School to make tops and ornaments. Our chapter also provided daily demonstrations at the annual Cape Fear Fair where we displayed the working model of an 1850s-era waterwheel-powered woodworking shop, which won best-in-show Chapter Collaborative Contest at the 2010 AAW symposium in Hartford. ■

—Byron Rosbrugh

Saskatchewan Turners Support Cancer Research

Last year's Matisho Memorial Woodturning for Cancer Research benefit was the most successful to date—one hundred people raised almost $3,500 for the Canadian Cancer Society. The increased attendance and donations were a direct result of media coverage, helped by features on local television stations that broadcast nationwide (see related story, vol 26, no 6).

Our event continues to grow. This year's Matisho Memorial, March 9 and 10 at Menno Industries in Waldheim, Saskatchewan, is one of the largest turning events in the province. We encourage other clubs to host similar events to support cancer research.

We base our Memorial on a traditional turning class where people pay an entry fee to attend, but there are other ways to raise funds. Simply get together with friends to turn wood, and then make a donation. A large turning club could easily eclipse our efforts. Turners working together can provide much needed help on the way to a cure. More information is available at turnersforcancerresearch.org. ■

—Glen Friesen

Michael Hosaluk passes skill on to the next generation.

Photo: Cal Isaacson

Local expert Deb McLeod helps a young turner make a pen.

Photo: Cal Isaacson

Contests

Best Chapter Newsletter/ Best Chapter Website

Each year, the AAW holds two contests: Best Chapter Newsletter and Best Chapter Website. The closing date for applications is April 1. Winners will be announced in mid-May on AAW's website and at the symposium banquet in Tampa; 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/community/chapters/chapter_contests_2012.htm.

How to apply

Best Chapter Newsletter

Email a *link only* to your four best newsletters from the past year, to inquiries@woodturner.org. Do *not* send any of the four newsletters themselves; the file sizes will overwhelm the judges' inboxes!

The 2012 newsletter winners were Finger Lakes Woodturners, Ralph Mosher, editor; San Diego Woodturners, Phil Stivers, editor; and Woodturners Guild of Ontario, Pete Kaiser, editor. Read their newsletters to get an idea of what it takes to put together an excellent newsletter.

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 2012 contest were South Puget Sound Woodturners, Tim Spaulding, webmaster; Great Plains Woodturners, Cindy Boehrns, webmaster; Fraser Valley Woodturners Guild, Derek Bird, 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 will not compete in that competition in subsequent years.

Above all, newsletters and websites should be fun to read and provide useful information to members of the chapter they serve. ■

—Kurt Hertzog

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!

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 2014.

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 2013.

Calendar of Events

April issue deadline: February 15

Send information to editorscarpino@gmail.com

Canada

March 9, 10, The Matisho Memorial Woodturning for Cancer Research Benefit, Waldheim, Saskatchewan. Woodturners share skills and raise money to support research done by the Canadian Cancer Society. Their goal is to encourage other turning clubs to host a similar event. For more information, visit turnersforcancerresearch.org or email Glen Friesen, glenfriesen@sasktel.net.

France

June 17–23, AFTAB (French Association for Artistic Woodturning) collaboration seminar, held at the Escoulen Woodturning School in a small village in the south of France. Fifty artists will collaborate and all work will be auctioned. For additional information visit aftab-asso.com/html/collaboration2013.html. To register, contact Alain Mailland aiguines2013@aftab-asso.com.

New Zealand

March 9–16, Collaboration NZ, Whangarei Heads, Northland. Participating artists include Michael Hosaluk (Canada), Alain Mailland (France), Jennifer Shirley (USA), Jogge Sundqvist (Sweden), Ross Annels (Australia), Tai Lake (USA), Richard Vaughan (Australia), Lyonel Grant (NZ), Carin Wilson (NZ), Rupert Newbold (NZ), Bernard Makoare (NZ), Bruce Fergus (NZ), Tony Vaughan (NZ), and Hans Herleth (NZ). Participants limited to 75. For event details, visit naw.org.nz.

Arizona

February 22–24, Desert Woodturning Roundup, Mesa Convention Center, hosted by the Arizona Woodturners Association. Demonstrators are Richard Raffan, Malcolm Tibbetts, Michael Hosaluk, Molly Winton, David Marks, John Lucas, J. Paul Fennell, Matt Monaco, and Rex Burningham. The event includes pen-turner gathering, live and silent auctions, vendor area, instant gallery, and door prizes. Following the symposium, Richard Raffan will teach a hands-on workshop. Further information is available at desertwoodturningroundup.com or call 480-620-5185.

California

January 27–May 5, "Scratching the Surface: Contemporary Wood Sculpture," The Craft and Folk Art Museum, Los Angeles. This international exhibit includes sculpture by Christian Burchard, Todd Hoyer, William Hunter, Art Liestman, Pascal Oudet, George Peterson, Michael Peterson, Merryll Saylan, and Jack Slentz. For current program information, visit cafam.org.

Florida

February 1–3, Florida Woodturning Symposium, Lake Yale Baptist Convention Center. Demonstrators include Hayley Smith, Jimmy Clewes, Brian McEvoy, Jerry Kermode, Rudolph Lopez, Gerhard Schwenke, Larry Hasiak, and Don Geiger. Dixie Biggs, Lee Sky, Bruce Hoover, James McClure, and Steven Marlowe offer hands-on workshops. The event will include a vendors' area and a craft room. Register online at floridawoodturningsymposium.com.

June 28–30, AAW's 27th international woodturning symposium in Tampa. For more information, visit woodturner.org.

Georgia

April 26–28, Southern States Woodturning Symposium, Clarence Brown Conference Center, Cartersville (new venue). Featured demonstrators are Keith Gotschall, Dick Sing, Al Stirt, and Jacques Vesery. For further information, visit southernstatessymposium.org or contact chair/registrar Marsha Barns at 828-837-6532 or ml.barnes@bmemc.net.

Hawaii

March 1 through 23, Big Island Woodturners Exhibit, Wailoa Center, Hilo. Meet the Artist reception March 1. For information about the exhibit and an online auction, visit bigislandwoodturners.org.

Idaho

February 23 and 24, "Idaho Artistry in Wood," Boise Hotel and Conference Center, Boise. Competitors from all skill levels are invited to submit woodcarving, scrollwork, fine woodworking, and pyrography for display and judging. The show will feature demonstrations, vendors, raffles, auction, and banquet. For registration forms and more information, visit idahoartistryinwood.org.

Minnesota

January 15–February 24, "Art From the Lathe: Selections From the AAW Permanent Collection"

January 15–March 17, "A Spoonful of Sugar: The Intricate Art of the Love Spoon"

February 28–June 30, "Around the Hus: Traditional Woodenware from Scandinavia"

February 28–June 2, "Harmony," 2013 Professional Outreach Program exhibit

Ongoing is "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 23 and 24, Totally Turning symposium, Saratoga Springs City Center. Demonstrators are Mike Mahoney, Binh Pho, Ernie Conover, Kurt Hertzog, Steve Sinner, Steve Worcester, David Nittmann, Lyle Jamieson, Harvey Fein, Bruce Hoover, Mike Souter, Joe Herrmann, Jeffrey Noden, Jerry Sambrook, and Giles Gilson. For more information and registration, visit totallyturning.com.

Ohio

May 17–19, Northeastern Ohio Scrollsaw & Woodworking Picnic, Quirk Center, Cuyahoga Falls. The event features scrollsaw, carving, pyrography, and turning classes and demonstrations. Jason Swanson will demonstrate woodturning and offer a class. For more information, visit northeasternohioscrollers.yolasite.com.

October 11–13, Ohio Valley Woodturners Guild's Turning 2013 symposium, Cincinnati. Demonstrators include Ray Key, Christian Burchard, Steve Kennard, Glenn Lucas, Michael Hosaluk, and Nick Agar. For more information, visit ovwg.org.

Utah

May 16–18, Utah Woodturning Symposium, Utah Valley University, Orem. With more than 90 demonstrations to choose from and a full schedule of special events, there is something for everyone. Interact with demonstrators, Nick Arnull, Mark Baker, Dennis Liggett, Andy Cole, Cynthia Gibson, J. Paul Fennell, Mark Supik, Mick Hanbury, David Drescher, Vic Wood, John Wessels, Dale Nish, Mike Mahoney, Kip Christensen, Alan Lacer, Mary Lacer, Tim Heil, Joe Herrmann, and Kurt Hertzog. For additional information, contact Susan Hendrix at utahwoodturningsymposium@gmail.com or visit utahwoodturning.com.

Virginia

May 17 and 18, Mid Atlantic Penturners Gathering, Woodcraft of Richmond. The event includes demonstrations, vendors, instant gallery, contests, pen and blank swaps, door prizes, and socializing. Free and open to the public. Follow us on Facebook at Mid Atlantic Penturners Gathering or for more information visit midatlanticpen.com.

Washington

March 23, A Day With David Ellsworth, Anacortes First Baptist Church, Anacortes. Ellsworth will demonstrate his turned hollow vessels and natural-edge bowls, discuss tools and sharpening, and show images. Sponsored by the Northwest Washington Woodturners. For more information, visit nwwwt.org.

July 27, Creativity in Woodturning symposium, Lacey. Featured demonstrator is John Jordan and local-guest demonstrator is Jack Wayne. The event will be followed by four days of hands-on classes with Jordan. For additional information, visit woodturnersofolympia.org or contact Al Price aprice44@aol.com.

Turners Without Borders: A New AAW Initiative

The AAW is not only the biggest woodturning club in the U.S., it is also the biggest *international* woodturning club. There are more than 1,000 members from outside of the U.S., accounting for about ten percent of AAW's membership, and they live in thirty-six countries. The reason for this strong international presence is simple: AAW is the best link into the wider world of turning. The AAW bimonthly, *American Woodturner*, is the best value-for-money publication in our field and that alone is enough reason to join. The AAW website is a significant hub for those who cannot make it to the U.S., although many do travel to the U.S. to see how things are done in the land where much of the modern turning revival began. International members bring their own unique vision and experiences that add to the American understanding of what turning can be.

In recognition of this international identity, in July 2011, Dale Larson, AAW Board President, contacted a group of AAW members who have significant international experience. An extensive online conversation became an international dialog to develop the idea. From the beginning, the intention was to broaden international communications between turners, and to enhance cooperation with organizations and events around the world. Larson's goal is to use the international identity of AAW to promote a wider experience for all members. After much discussion, we named the new initiative *Turners Without Borders*. The *borders* in question are not just physical, as TWB hopes to operate beyond cultural, linguistic, and creative limits.

The award ceremony for the students. Mike Hou is standing, extreme left, and Su Jinling is at the extreme right.

Over the months leading up to the San José symposium, the group exchanged ideas and at the symposium, TWB held its first face-to-face meeting. In his opening statement, Larson laid out the AAW's impressive international credentials: "Since the first AAW symposium in 1986, sixty-seven international demonstrators from fourteen countries have contributed, and there have been articles in *American Woodturner* on woodturning in thirteen countries." The meeting led to several concrete proposals, some of which are now being put into action, such as developing a database to advise international demonstrators about visa requirements. Another area TWB wants to promote is the development of turning in territories that do not have a structured woodturning community. This was a particularly popular idea in San José and the hope is it will develop into a two-way exchange between turners from developed countries and traditional turners from developing countries. As the new AAW website is developed, these initiatives and more will be posted on the TWB page, as well as in *American Woodturner*.

There has already been one exciting outcome from the San José meeting. Mike Hou from China was there and he became energized about the possibilities. Mike is the driving force behind the International Wood Culture Society (IWCS), a group that promotes awareness of wood-related


Terry Martin demonstrated as AAW's representative at the IWCS symposium in China, September 2012.


The Chinese audience was amazed to see how turning is done.


A husband and wife team demonstrated traditional carving at the Li'Nan symposium.


At the symposium local school students competed to see which team could make the most interesting storage units in a short period of time.


Part of one of the carvers' carvings.

activity around the world and sponsors educational activities in many countries (iwcs.com). He was impressed with what he saw at the symposium and asked Larson to arrange for a representative of AAW to attend their symposium in China in September, with costs to be paid by IWCS. Larson asked Terry Martin, chair of the TWB committee, to make the trip. At the symposium held at Li'Nan Agricultural and Forestry University, Martin demonstrated turning to an audience that had never seen turning before. He also spoke about the world turning phenomenon and the AAW. It was, in Martin's words, "a remarkable experience," and he will be reporting more fully in *American Woodturner*. The IWCS and TWB are working together to bring a Chinese turner to the U.S. to demonstrate and the General Secretary of IWCS, Su Jinling, will be visiting the Tampa symposium to learn more about the AAW. This is an exciting development in world turning.

The TWB Interim Committee is already a truly international group—all AAW members—who represent a major slice of the turning world: Chair: Martin (Australia), Secretary: Ambrose O'Halloran (Ireland), Larson (USA), Mark Baker (UK), Botho von Hampeln (Canada), Alain Mailland (France), Lou Williams (USA). ■

If you have something to offer TWB, please contact Martin, eltel@optusnet.com.au or Ambrose O'Halloran, cregboy@hotmail.com.

Preparing Turnings for Sale

For several years I have been offering turnings for sale at three different kinds of venues: outdoor arts and crafts shows, benefit shows, and museum shops. I tailor my pieces to my audience and share here my thinking when preparing my turnings for each.

Outdoor arts and crafts shows

Typically, these shows are annual events that take place over a two- or three-day weekend. For many attendees, this is an outing and they are casually interested in purchasing—they are prepared to consider something that catches their eye. Most of the turnings I show have some utilitarian value: salad bowls, decorative plates, peppermills, and saltcellars. I carefully consider price: People who attend these events usually are working with a modest budget and are attracted to utilitarian items such as the nested black cherry bowls shown at right.

Invited benefit and holiday shows

Two or three times a year I am invited to participate in benefit shows where a percentage of gross receipts is given to the organization sponsoring the event, often scheduled around a holiday. People who come to these shows do so with some deliberation: They may be seeking a gift or something for themselves and they are in the mood to buy.

(Far left) Covered dish, 2011, Black walnut, 14" × 8" (36 cm × 20 cm)

(Top) Vase, 2011, Black walnut, 10½" × 5" (27 cm × 13 cm)

(Bottom) Nested bowls, 2010, Black cherry, largest is 10" (25 cm) dia

For these shows, I prepare items that have a more aesthetic character—items may have a useful purpose but can also stand alone. Other items could include bangles made from exotic woods, covered candy dishes, small bowls dyed and pierced, and multiaxis candleholders. These items are usually more expensive because of their character, the woods used, and the time given to their creation.

Museum shops and craft galleries

Currently, I am spending more of my time designing and creating turnings for people who collect wood art. This clientele tends to be attracted to sculpture, painting, or objects made from non-traditional materials. The turnings for this venue have an aesthetic value that appeals to collectors.

In addition to the possibility of a sale, I create these pieces for my own enjoyment; and if someone likes the piece and purchases it, I celebrate! The pierced black walnut covered dish is an example of a one-of-a-kind higher-end creation. With these, it is possible to attach a price that more closely relates to the value of my time, the creative process, and the effort of its production. ■

Photos by Michael Mandolfo.

David E. Day's work can be seen at daviddaywoodart.com.

Your POP Working for You

The annual symposium is a highlight for many AAW members. The load of organizing and running it is enormous, and it is only possible through the efforts of both AAW staff and hundreds of volunteers. Many members will have seen the POP banner at the symposiums, but may not be aware of how hard the volunteer POP committee works to enhance the symposium experience for everyone.

POP stands for Professional Outreach Program and it was formed not only to represent AAW members who work as professionals, but also those who aspire to a professional standard in their work, or who simply have an interest in understanding more about the scope of professionalism within the field of woodturning.

David Ellsworth has been a significant influence on POP program and he was the first chair of the committee. Explaining the POP's importance, Ellsworth says, "One of its important roles is to provide balance for the organization as a whole. Every media group needs the complete range of experience levels and this is what we envisioned when we formed the AAW. POP continues to provide this balance."

Jacques Vesery was the second chair and worked hard for several years to help get the POP programs in place. Vesery says, "No matter what the organization, professionalism brings a high standard of credibility and value to its membership. The POP was designed to support this concept within the AAW and having a group of committed professionals to help bring the AAW to new levels has been crucial to its growth. Through programs such as Merit Awards, Fellowship Grants, and Excellence Awards, POP has promoted further recognition within the field of woodturning. With its exhibitions, lecture series, and the Artist Showcase at annual symposia, it has exposed a great number of members to a broader base of artists and work."

Trent Bosch explains why he wanted to be on the POP committee: "I've always appreciated the openness and sharing in the turning community. I've been on both sides, receiving guidance and also helping others. To me, POP is a way of assisting those who aspire to take their art-form or craft to a higher level."

POP membership is open to all AAW members and committee member Barbara Crockett has the behind-the-scenes role of processing applications for registration, answering emails, and sending out updates to POP members. "I tell those making inquiries that POP is the best, and absolutely free, accessory that is available through their AAW membership," Crockett explains. "I get many inquiries asking if there is a juried process,

(Above) David Belser presents his work at the POP's Emerging Artists area during the 2010 Hartford symposium.

Photo: John Kelsey

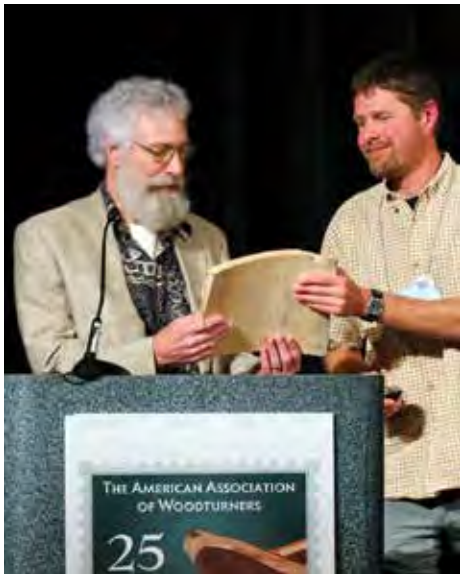
(Right) Jerry Kermode, POP committee member, helps Deborah Kermode and auctioneer John Hill during a POP auction.

Photo: Andi Wolfe

Mark Nantz, POP award, Instant Gallery, Hartford.

Photo: Andi Wolfe

or some sort of secret handshake to sign up for POP. All that is necessary is to go to the AAW website and fill in the registration form." Crockett sends registered AAW members information about calls for entries, demonstrating opportunities, and gallery inquiries. She explains how the POP database works: "A person who is looking for someone who turns, say, burial urns for pets, can search our database and find a list of everyone who has that in their description. The general membership can use this terrific tool to locate the demonstrator, instructor, or artist they are looking for."



Trent Bosch, chair of the 2011 POP committee, presents David Ellsworth with POP's 2011 Lifetime Achievement Award at the Saint Paul symposium.

Photo: Andi Wolfe

POP's annual themed exhibit is a favorite of many symposium attendees. A visitor examines Michael Hosaluk's pods.

Photo: Andi Wolfe

Annual invitational exhibit

A visible sign of POP's work at the symposium is its annual invitational exhibition. Around forty wood artists are invited to participate in a themed exhibition, such as "The Teapot," or "Roots." In coordination with the whole committee, the show is co-curated by AAW curator Tib Shaw and a committee member. With gallery-style plinths and a superb color catalog, this exhibition has become a showcase for the best work in the world and is a calm counterpoint to the tornado of creativity that is the Instant Gallery. Shaw has no doubts about the importance of the show: "The POP invitational is the highlight of my year. This will be my seventh show and the artists continue to surprise and delight me. Although the show is a fundraiser for POP, it also provides inspiration and a crash course in creativity for viewers, whether they are turners or not. Witnessing those moments of inspiration is one of the best parts of my job." Terry Martin agrees: "As past co-curator of the annual show, I have been amazed at the response from invited turners. In difficult times when many galleries are closing, it is a significant showcase for the best in the world." Until this year, the pieces were sold by auction, but in Tampa the pieces will be sold just as they would in a regular gallery show.

Committee work

Much of the committee's work is less visible, such as the accounting done by treasurer Bonnie Klein, who says she enjoys many aspects of the POP activities. "My favorite projects are the exhibitions and their catalogs. I also like the Instant Gallery awards," Klein says. Curt Theobald is the POP representative for those awards and says he enjoys working with the Instant Gallery critique. Theobald also serves as the POP representative who works with two other AAW members to select the demonstrators for the annual symposium, a big responsibility.

Another activity generated by the POP committee is the Artist Showcase Program, run in various forms since 2010. J. Paul Fennell works hard on improving this program and in 2013 it will be more streamlined and accessible for attendees in Tampa. Fennell explains, "We tried a Resident Artist Program for a few years, but ultimately it did not succeed, so I suggested showcasing emerging artists, people who have the potential for contributing significantly to the field. Originally called the Emerging Artist Program, it has been successful for three years. Beginning in 2013, the program will be called Artists' Showcase and two artists will be selected to demonstrate. Not only will emerging artists be considered, but also lesser-known but established artists who would benefit from the exposure at a national symposium."

Fennell, the current POP committee Chair, is also aware that many members who attend symposiums are not woodturners, but rather collectors, enthusiasts, curators, gallery owners, teachers and writers. "They're just as passionate about the field as anyone else," Fennell says. "That's how our panel discussions ▸

J. Paul Fennell leads one of the POP's intimate Instant Gallery critiques.

Photo: Andi Wolfe

evolved. The panels allow everyone a chance to frankly and openly discuss a variety of topics that are critical to woodturning. Topics include photography, portfolio development, professional websites, teaching methods, and the marketing and business aspects of woodturning. Some discussions have invited audience participation, including copying and plagiarism, cultural appropriation, critiquing work, and critical reviews from outside the field. These sessions have been enthusiastically attended by both turners and non-woodturning members."

Jerry Kermode is another of the POP volunteers: "My work with the committee has been enlightening in many ways," Kermode says. "Both beginners and professionals go through the same hoops to sell their work and we really are all in this together. A few years ago, I started the Intimate Gallery Critique. It gives anyone a chance to sit down with like-minded peers and a professional to talk about their work. I believe this group sharing works both ways."

Binh Pho critiques a piece in the Instant Gallery. Binh is the POP committee liaison with the AAW Board.

Photo: Andi Wolfe

Binh Pho agrees with Jerry: "There are two sides to the equation in AAW and we need both. Some may think it's us-and-them, or artsy vs. traditional turning, but if hobbyists want to advance, I think POP can help them achieve their goals."

Kevin Wallace is the only non-turner on the committee and he brings a different perspective. "When I managed a gallery that represented many leading figures in the field, I was aware of how exhibitions inspired amateurs," Wallace says. "I also have experience with the world of museums, galleries and collectors, and I'm able to share that world with members of the AAW and demystify it where possible."

POP and the annual symposium

Al Hockenbery speaks about the range of work POP does for the AAW symposium: "The panels, showcased artists, Instant Gallery awards, and exhibition are only part of what POP contributes. POP begins its symposium work with at least one member serving on the symposium committee, POP suggests turners to invite, and it brings Pop Merit Award recipients, such as Richard Raffan in 2012, to the symposium for a retrospective show of their work and to demonstrate. We award individuals who have demonstrated high standards of professionalism throughout their careers and previous recipients have been David Ellsworth and Merryll Saylan." Hockenbery believes the POP's most valuable work is the perspective it provides for demonstrator selection: "Through their travels, POP members meet turners who have yet to be featured at our symposiums. Because of their informed recommendations, invitations can be extended to excellent but relatively unknown turners from around the world."

Hockenbery has some advice for members: "When you visit Tampa, make it a point to see one demonstration by a Showcased Artist, join in a panel discussion, visit the POP art exhibit, bring a piece of your work to share in the instant gallery and sign up for the Intimate Critique!"

Visit the POP page on the AAW website and see what POP can do for you (woodturner.org/community/pop/). You may wish to inquire about a Fellowship Grant, recommend somebody for a Merit Award, put your name forward for the annual themed exhibition, join the volunteer team to help out at POP activities during the symposium, add your name to the various directories (Professional Turners, Demonstrators, Teachers, Collectors, Gallery Directors), or suggest a POP discussion panel at the symposium. It's a lot of offerings and it's all planned and brought to the symposium by the POP committee—hard-working volunteers, just like so many of the people who make the AAW the biggest and best woodturning club in the world. Why don't you join? It's free! ■

—Terry Martin

How to Attract New Club Members

The most effective way to attract new members to your local chapter is to put a turning tool in someone's hands so that he or she can personally experience the joy of woodturning.

With that in mind, our club hosts several hands-on events each year using the club's ten portable mini lathes. Adults and children (ten years and older) can make a simple turned object while being supervised by an experienced club member. Recently, we held a ten-day event at the Western North Carolina State Fair where we let fairgoers make a spinning top, honey dipper, or bottle stopper.

Club members who could not be at the fair partially completed the projects ahead of time so we could maintain a high rate of hands-on participation. Fairgoers sanded and completed a project on one lathe in five to fifteen minutes, and then they took the project to a separate lathe to buff and add a wax finish. Using this approach, we were able to have more than 200 people complete projects on each of the busy weekend days with a total of 1,361 people turning a project for the first time. Usually, there was a line of people waiting to take their turn at woodturning. It was a challenge to keep the wait under fifteen minutes.

Organization

The key to high participation is organization. Drawings of the partially turned blanks were posted on our club website to help ensure all of the blanks we used at the fair were more or less the same size and shape (carolinamountainwoodturners.org/articles/427). We scheduled ten to twelve volunteers at all times with morning, afternoon, and evening shifts. Volunteers were divided into two groups: those who helped people turn at the lathe and those who provided support. Support consisted of registering people, reviewing woodturning safety guidelines, buffing completed projects, and keeping the area organized.

Before the fair, we posted videos on the club's website showing how to mount and complete the projects, which allowed the sixty volunteers who helped at the fair to have a common understanding of what was required.

At the event, we prominently displayed a poster listing the benefits of joining our club. As an incentive for joining, new members could select a woodturned object that had been donated by club members. Our "Fair Membership Special" was only offered to people who joined at the fair. We signed up several new members each day and by the end of the fair, more than thirty new members joined. Most were families who wanted to learn woodturning as a family activity.

The author helps a fairgoer make a honey dipper.

Woodturning area at the Western North Carolina Fair.

Questions asked

The questions asked most often by the new members: (1) will you be teaching beginning woodturning classes? (2) How much does it cost to buy a lathe and turning tools to get started? We quickly put together a plan for beginners' classes to be held within a few weeks after the fair. More than one-half of the new members signed up for beginning classes. The woodturning catalogs we had on hand helped answer equipment questions.

Success

This event was a huge success. Sixty chapter members became involved, sharing their passion for woodturning with the public. Many of the participants hugged the chapter members and thanked them for introducing them to woodturning. The fair organizers were thrilled with this event and invited us back next year. ■

—Tucker Garrison, Vice President, Carolina Mountain Woodturners

Tips

Sandpaper rack

I made this rack for my sandpaper from a picture Vern Bunn, an Internet friend in Australia, sent me. I knew it would work for me. I was right—I use it every day I am on the lathe.

The base is a magnetic stand with an on/off switch, which makes it portable, a threaded rod, pipe, wood spacers, and steel strapping bent to make the fingers that hold the paper. I don't have to mark the paper with sizes, I simply use the next piece in line.

—Bruce Holden, Oklahoma

Sharpening station

I transformed an old shopmade lathe into a sharpening station on wheels. I attached a faceplate to both the outboard and inboard, onto which I screwed thick rounds of MDF.

On the outboard, I glued a wide strip of leather to the face of the MDF. I use the leather and MDF for honing skew chisels. On the inboard, I glued leather all the way around the edge of the MDF. I use this for honing the inside of flutes while running the lathe in reverse.

I also added a diamond wheel for honing carbide-tipped tools. I run the lathe in reverse and at a slow speed.

To hold the diamond wheel and inboard MDF in place, I used a length of all-thread rod. One end of the rod is held by a #2 Morse taper (for making pens) in the headstock, the other is held in a live center in the tailstock. Each item is spaced and held in place with a nut and washer.

I rub stainless steel polishing compound onto the leather and on the MDF for honing.

I mounted my regular grinder on the far end. To make the station mobile, I put wheels onto the legs (from a used shopping cart) so that I can position the station for easy access while I'm turning or roll it out of the way when it's not needed.

—Dan Burleson, Missouri

Turn bottoms of large-diameter bowls

I turned a large-diameter bowl, which necessitated removing the tailstock on my lathe. This presented a problem in finishing the bottom because the tailstock was removed. My solution was to make a large jam chuck. I cut a large circle from a piece of ¾" (20mm) underlayment (dumpster diving at a construction site) and securely mounted it onto a faceplate. I turned a dado so that the rim of the bowl fit snugly. To ensure nothing moved, I attached two bungee cords. Worked great.

—Paul M. Kaplowitz, South Carolina

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

Shopmade faceplates

Free up expensive faceplates by making inexpensive ones. Buy threaded nuts to match the threads on your lathe's headstock spindle. Use seasoned hardwood that is about 1½" (40mm) thick.

In the center of the blank, drill an appropriately sized hole for the nut to have a tight fit. Use a Forstner bit and drill deep enough so that the top of the nut will match with the stop collar on your lathe's headstock spindle.

If you do not have a Forstner bit that ideally matches the nut, drill a slightly undersized hole, then mount the blank, centered and with the hole toward the tailstock, onto a faceplate using double-sided tape. With the tailstock in place, using a revolving center, true up the blank.

Enlarge the hole to allow a snug fit of the nut and cut it deep enough to encase the nut. Remove the blank from the lathe, rough up one face of a nut with coarse abrasive, and apply medium CA glue into the hole where the nut will rest. Press and hold the nut in the hole, using your drill press as a clamp.

After the CA has cured, fill the six open spaces around the nut with five-minute epoxy and allow the epoxy to harden. Remove excess epoxy from the face of the nut.

Mount the blank onto your lathe and true up the face and edge. (Caution—you may need to use a washer or spacer if the nut does not bottom out on the collar of the headstock spindle.)

Use these faceplates for sanding or honing disks. They are also useful for gluing small turning blanks or using double-faced tape to secure your turning stock.

—James L. Pruitt, Arkansas

Magnets and a dust hood

To improve dust collection, I needed the flexibility to move the hood to suit the project. To make this possible, I attached several rare earth magnets to the hood. The magnets allow me to quickly position the hood close to the work. I can move it up, down, or along the bed or position it on either side of the bed to maximize dust collection at the source. It is an inexpensive way to improve dust collection.

—Don Latorraca, Wisconsin

Versatile tool handles

Recently I acquired a few new tools and am learning techniques for turning large bowls and hollow forms. The new tools needed new handles. Being thrifty, I made handles from an Osage orange log a friend gave me.

For the first handle, I turned a recess near the top and wrapped string around the wood. As I learned more about the new collet tool handles that accept different tools of the same diameter, I decided to use that concept. For the next handle, I drilled the size hole I needed and then using a bandsaw, I made two cuts at 90° through the center axis. Rather than using string, I slipped hose clamps onto the recess. Now, I have a few handles that can accommodate many tools and it is easy to interchange them.

—Barbara Dill, Virginia

Vacuum chuck gasket

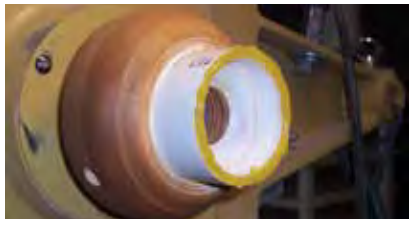
Hot melt glue makes an effective gasket on PVC pipe for vacuum chucks: The darker the glue stick, the stronger the adhesive. (The less expensive clear glue sticks are more flexible when cool.)

Mount the PVC pipe section into a chuck. Using a thin parting tool, make a shallow groove. Remove PVC pipe and set on a bench. Using a hot glue gun, fill in the groove and make a thick gasket. If you move slowly, the glue will start to cool and build up. Once it is completely cool, you can profile the glue using a skew chisel.

Hot glue is also useful for mounting odd shapes to a glue block. Use the darker, higher adhesive and a clamp. Simply create a big pile of glue and clamp the object. Works great for mounting Corian to glue blocks.

Please use caution: Hot glue is *very hot* and will remove skin. ▸

—John Kaner, Alaska



Spindle lock for Powermatic

I have seen many tips for locking the headstock spindle on a Powermatic lathe, but they all entail drilling holes, loosening bolts and screws, or sticking wood dowels into holes and getting them broken off. My spindle lock device is just a small piece of hardwood, cut and drilled to hold two rare earth magnets.

I used an extra long piece of ¾"- (20mm-) thick maple, 9" × 1⅜" (230mm × 35mm). Dado out the center ⅜" (10mm) deep, leaving 1½" (38mm) at each end the full ¾" thick. Cut in half so you have two pieces 4⅜" (110mm) long. Trim the thin portion of each board to 1" (25mm) wide.

Drill a 1" hole, ⅛" (3mm) deep, at the thick end to hold the large magnet, and a ½" (13mm) hole, ⅛" deep at the other end for the smaller magnet. The small magnet will be centered over the Allen head bolt on the lower end of the spindle-lock button guard. The 1" hole in the thick end will be centered in the board.

The device has magnets, so simply store it on the leg of the lathe when not in use.

—Harry Farmer, Colorado

Inexpensive retractable cord

I wanted a retractable cord reel for use with my portable drill and lights, but they are $60 to $70.

The retractable trouble lights on sale are under $20 each. I bought one and turned it into a retractable reel with two power outlets by removing the lamp guards and putting an adaptor in the socket. I can now use the outlets for light-duty power tools such as drills, jigsaws, and rotary tools.

—Charles Mak, Alberta, Canada

Spindle lock for Powermatic

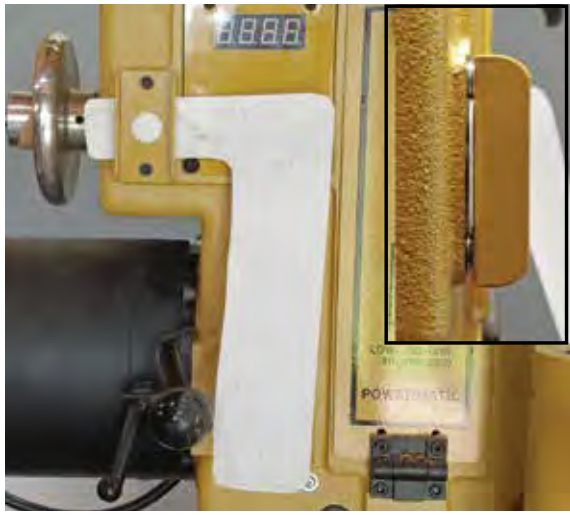
There have been several tips published on how to keep the Powermatic 3520B spindle locked without an extra hand. This one is the first one, however, to maintain the presumed design intention of preventing you from turning the lathe on with the spindle locked.

Remove the spindle lock guard and reinstall it with two small washers between the spindle lock guard and the headstock *(see inset in photo)*.

Cut an L shape out of something thin and flexible. I used a sheet of plastic, similar to credit card stock, but sheet metal or even cereal box cardboard will do. The shorter leg of the L, which will hold in the spindle lock button, should be 1⅜" (35mm) wide and 6" (15cm) long. The longer leg of the L, which will cover the on/off and speed control switch to remind you to unlock the spindle before turning on, should be 2" (5cm) wide and 8" (20cm) long.

To use, engage the spindle lock as normal with your left hand and slide the L between the headstock and spindle lock guard so that it holds the spindle lock button in and also covers up the on/off switch. ■

—David Reed Smith, Maryland



Overhead crane

I needed a way to lift and mount large, heavy bowl blanks, so I built an overhead crane. I purchased an 8' (2.4m) section of 10" (25cm) aluminum I-beam from a local welding shop and mounted it to the ceiling, in line with the lathe center. I used U-bolts to hold the I-beam up. The trolley and electric winch came from Harbor Freight. Total cost, $250.

—Paul M. Kaplowitz, South Carolina

Think Big—Start Small

Implementing Mastery Learning by Dr. Tom Guskey encourages readers to *think big; start small*. You might wonder what a professor of education shares in common with woodturners, but the advice pertains. Exploration begins with first answering the question—*What do I want to make?*—keeping in mind that a final product is more easily attained if it begins with a manageable endeavor. Following that, basic techniques have to be learned to meet with success: How do I hold the wood on the lathe? Which tool do I use for which cut? How fast should the lathe be running? How do I sand? What finish is best?

Seeing work at instant galleries and in woodturning publications is inspiring, but some of those creations might cause us to think we could never create anything as nice. But we can, and it is simple: *think big; start small*.

Participate in club activities

About fifteen years ago, I started turning in earnest. I joined the Northwest Michigan Woodturners, and over the years I found mentors, received instruction, and became more accomplished. I watched how bowls were made from start to finish. My first bowls were small, and I practiced each step: Each one did not take a lot of time, but I had to learn and complete all of them. Larger bowls followed after the fundamentals became routine.

I have access to hardwood burls and I wanted to incorporate a design feature that mimicked ripples in water when a stone is dropped into a pond. My skills were sufficient to try something more challenging, so my first piece was slightly larger than previous bowls and included negative space. From that, I learned two important things: Ripples are a series of beads and coves, and sanding through negative space required a lot of hand sanding. I made several ripple bowls and eventually turned a larger one, which I sold in a gallery.

Other turning methods

After making a variety of bowls, I decided to try spindle turning and had a short-lived urge to make kitchen utensils. I turned the first (and last) one from white pine. The shape was something that *could* be used in a kitchen, but I quickly realized I preferred turning almost anything else.

Barbara Dill's well-written article on multiaxis spindle turning caught my interest (*AW* vol 26, no 6) and I tried turning a piece with two different sets of centers. I had fun, but this small start will require much more work.

Last Christmas, I decided to make acorn boxes for gifts. In making the prototype, I learned a lot about turning and about myself: Jam chucking requires practice and patience. Figuring out how to texture the top of the acorn cap brought new skills into my arsenal. From a demonstration by my friend Bob, I tried using a lathe's indexing wheel to lay out spirals. With a little practice I found success; however, incising with a woodburner was more trying. Eventually I discovered it was easiest to keep the cap mounted on the lathe and rotate it with my left hand while burning with my right.

Coloring wood intrigues me, but being a professional forester, I have been reluctant to compromise the beauty of natural wood. Even so, I decided to try color on a sounding block for a gavel. I researched the Internet and found good examples of how to do a sunburst with color. Using aniline dyes, I first dyed the sounding block with lemon yellow. I sanded the raised grain and applied another coat of yellow, followed by air-brushing the rim red. Sixteen coats of spray lacquer later, I had a piece that displays wonderful chatoyance—my first success at using color.

What's next? In my ongoing quest to answer the first question, *What do I want to make?* I am thinking about making a hollow form and adding color. By thinking big and starting small, I have an idea of what I need to do to make that piece successful. I am having fun exploring many options, while learning new skills, each one built on the next. ■

Steve Alguire lives on the shore of Lake Michigan near Traverse City and works as a Consulting Forester. In addition to turning wood, he enjoys flying his airplane and spending time with grandchildren.

Spalted birch, 1¾" × 4½" (4cm × 11cm)

Acorn boxes, various species, 1½" × 2½" (4cm × 6cm)

Sounding block, quilted maple, airbrushed, ¾" × 3½" (2cm × 9cm)

Cooking spade, white pine, 2" × 12" (5cm × 30cm)

Spalted pine, 10" (25cm)

Cove and beads on sugar maple burl, 1¾" × 6¼" (4cm × 16cm)

Woodturning SAFELY

It's safe and fun, until suddenly it isn't

John Kelsey

Felled by flying wood That's how this blockhead was found, after he ignored the Woodturning Safety Checklists.

Woodturning is safe, until something goes wrong. Accidents at the lathe happen incredibly quickly, and woodturning accidents can be lethal. Yes, lethal.

That's tough talk, but think for a moment—you would be hurt and you could be killed if a heavy chunk of rotating wood were to fly off the lathe and smash into your face. It has happened to others and it could happen to you. That's why good woodturners take responsibility for their own safety by internalizing a safety point of view. Your attitude is your first line of defense, with faceshields and other protective gear the backup system.

And that's why safe turners, like airplane pilots, run down a checklist before hitting the "ON" switch, and they pay close attention to working safely while the chips are flying.

The risks include:

- Body parts battered by airborne wood flying off the lathe. Most dangerous: irregular and unsound wood.
- Nasty cuts from dropping sharp turning tools on unprotected feet.
- Violent injury if loose hair, jewelry, or clothing were to catch on the spinning chuck or workpiece.
- Fingers crushed under dropped wood, made worse if you're wearing rings.
- General mayhem if the turning tool was wrenched out of your hands because it tangled with the workpiece before you got it firmly planted on the toolrest.
- Nose and lung damage from inhaling fine dust. Wood dust, sandpaper detritus, grinder debris—all bad.

Woodturners are at risk when using bandsaws, chainsaws, and power carving tools, so it's essential to learn and follow safe practices for that equipment too. But that's another story—this one's about how to prepare and protect yourself at the lathe and how to avoid turning mishaps.

Attitude Checklist: Your Sharpness

1. **Stay alert.**
   Understand the Danger Zone. Pay attention to unusual sounds or vibrations; stop the lathe to investigate the cause. And yes, it is dumb to operate machines when you are tired or under the influence of drugs or alcohol.

2. **Workshop.**
   Plug your lathe into a grounded outlet, no extension cords. Keep your work area well lit. Don't set up in wet locations. Mount a fire extinguisher beside the exit door.

3. **Lathe.**
   Keep your lathe in good repair and develop the habit of scanning it for damaged parts, misalignment, or binding parts. Listen for unusual sounds. If you detect something amiss, deal with it immediately, before continuing your project.

4. **Stance.**
   Stand like a soldier, easy but firm with your feet comfortably apart, shift your feet to maintain solid footing and keep your balance. Your stance powers all turning cuts. If you use an anti-fatigue mat, make it big so you can't trip on its edge.

5. **Tools.**
   Learn what tools to use for each task, and keep tools sharp and clean. Forcing a dull tool invites a mishap, so pause often to touch up the cutting edge.

6. **Know thyself.**
   Know your capabilities and limitations. An experienced woodturner can handle lathe speeds, techniques, and procedures that are not so smart for beginners to attempt. ▸

The Danger Zone

The Danger Zone is the space directly behind and in front of the workpiece. This is the red zone or firing zone, where the workpiece would be most likely to travel if it were to fly off the lathe.

Don't be in the Danger Zone when you first turn the lathe on, and keep your hand on the switch while the motor revs up, in case you need to turn it off fast. When observing someone else turn, stay out of this zone. When turning irregular, unbalanced, and unsound wood, train yourself to keep your head out of the Danger Zone.

Well turned-out
Essential safety gear includes shatterproof eyeglasses, comfortable faceshield, and turning smock. Many turners prefer a rolling cart for organizing tools and keeping them at hand.

Tune your lathe
Keep the lathe bed clean, rust-free, and waxed, so the tailstock and toolrest slide freely.

Tools
Learn to sharpen efficiently, so you will sharpen often.

Eyes, face, body, lungs
Safety glasses with side shields, faceshield, dust mask that fits. Tight shirt cuffs. Long hair tied back...lol.

Personal Protection Checklist: Every Time You Turn

1. Eyes and face.
Wear a full faceshield all the time. If you also wear eyeglasses, get shatterproof lenses with side shields.

2. Body.
Wear a turning smock with short sleeves or tight cuffs. Tie back long hair, and avoid loose clothing, dangling jewelry, or ear-bud wires that could catch on the lathe, chuck, or workpiece.

3. Lungs.
Wood dust, sandpaper debris, and fine particles from a grinder will harm your respiratory system. Ventilate your workshop and wear a dust mask or air filtration helmet, or install a dust collection system.

4. Ears.
Wear hearing protection during extended periods of turning.

5. Feet.
Wear closed-toe shoes or work boots, never sandals, to protect your feet from dropped tools and chunks of wood.

Ears
Band-style earplugs can be worn with a faceshield.

Feet
Don't wear sandals in the workshop. Wear sturdy closed-toe shoes.

Lathe Checklist

1. Lathe bed.
Clear turning tools, setup tools, materials, and coffee cups from the lathe bed.

2. Headstock and chuck.
Remove and stow chuck keys, adjusting wrenches, and knockout bars. Form a habit of checking for these before switching ON. Also check to be sure the belt guard or cover is in place.

3. Tailstock and toolrest.
Use the tailstock to support the workpiece whenever possible. Check that all locking devices on the tailstock and toolrest assembly (rest and base) are tight.

4 . Sanding and finishing.
To protect your fingers, always remove the toolrest before sanding, finishing, or polishing operations on the lathe. Apply finish with small scraps of cloth or paper towel, not large rags, and stand aside to avoid flying droplets.

5. Full stop.
Never leave the lathe running unattended. Turn the power OFF. Don't leave lathe until it comes to a complete stop.

Lathe bed
Get all this clutter out of your way. Build a handy rack or cart to store all your turning tools and accessories.

Headstock and chuck
Check for chuck keys and stow them before switching ON.

Tailstock and toolrest
Raise the rest to center height or just below. Tighten everything. Lock the tailstock quill.

Sanding and finishing
Move the toolrest out of the way, or remove it entirely, before you sand or finish.

Workpiece Checklist

1. Clearance.
Rotate the workpiece a full turn by hand to be certain that it clears the toolrest and bed before turning the lathe ON. If it's possible to use the tailstock for support, do it.

2. Chuck and faceplate.
Grab and push the workpiece to be sure it's firmly seated in the chuck jaws. When using a faceplate, be certain the workpiece is solidly mounted with stout steel screws (#10 minimum).

3. Reversing.
When running a lathe in reverse, securely tighten or lock the chuck or faceplate on the lathe spindle so it can't unscrew and fly off.

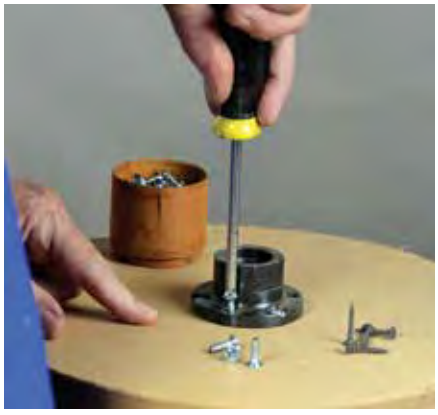
4. Speed.
Always check the speed of the lathe before you turn it on. Use slower speeds for larger diameters and rough pieces, and higher speeds for smaller diameters and balanced pieces. When the workpiece is unbalanced, start slow. If the lathe shakes or vibrates, slow it down. If the workpiece vibrates, stop the machine to find out why.

5. Unusual wood.
Wood with cracks, splits, checks, bark pockets, knots, irregular shapes, or protuberances could fly apart on the lathe. Beginners should stick with sound wood. Start slow and keep your head out of the danger zone until you balance the piece and assess its soundness.

6. Toolrest.
Hold turning tools securely on the toolrest, gripping the tool in a controlled but comfortable manner. Always plant the tool on the rest before you allow it to contact the workpiece. Turn the lathe OFF before you adjust the toolrest or toolrest base.

7. Have fun!
You'll enjoy turning the most when you're confidently on top of safety. ■

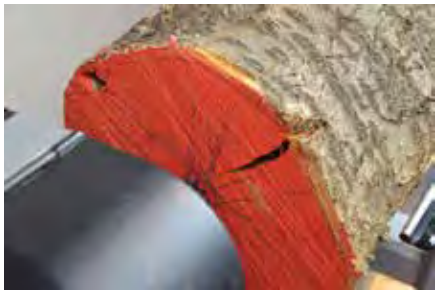
Clearance
Rotate the workpiece completely by hand to be sure it clears the toolrest.



Chuck and faceplate
Push and shove the workpiece to be sure it's firmly seated in the chuck. For faceplates, use stout steel screws, not drywall screws (they are brittle).

Reversing
Lock the chuck to the spindle so it can't fly off.

Speed
Start slow. With rough, unbalanced wood, start slower.



Unusual wood
Deep cracks and checks could be trouble: the wood might fly apart. Stand to the side and start slow.

Have fun!
Emerging artist David Earle enthusiastically made the shavings fly at the AAW's San Jose symposium in June 2012.

BATTLE TOPS

Robert Shafer

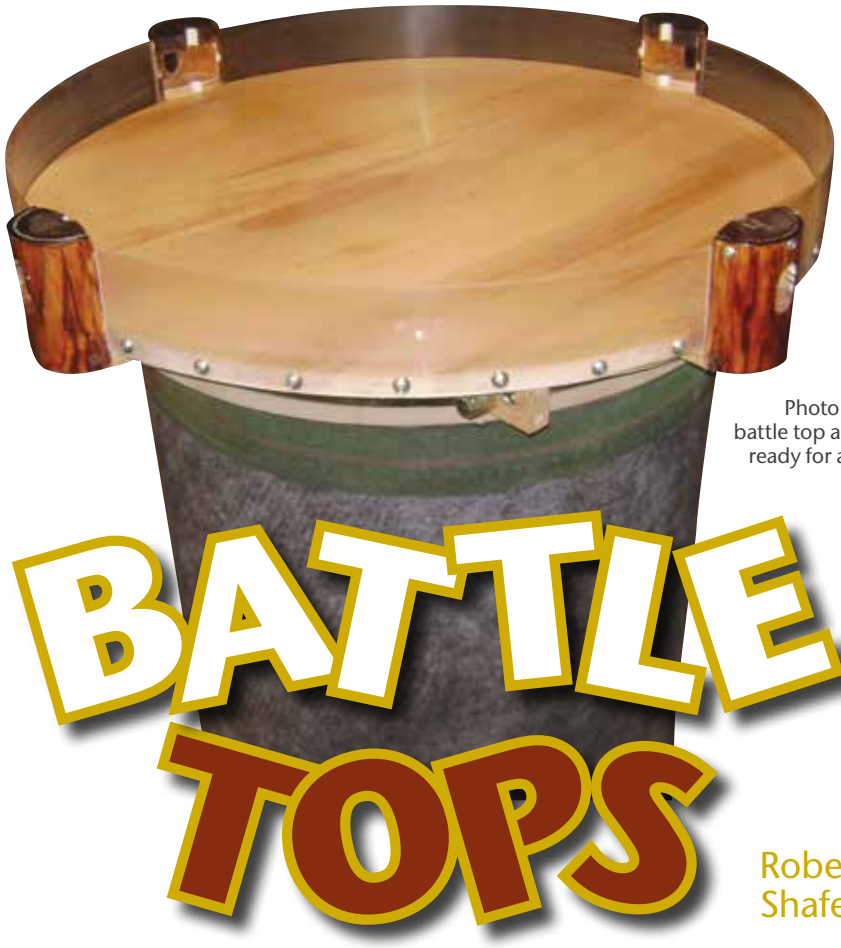


Photo 1. The battle top arena is ready for action.

The light conversation dies down and nerves kick in. The tension in the darkened basement builds. Everyone finds a place—the start time draws near. A hush falls over the room. A blinding glare erupts as spotlights hung from the ceiling are suddenly turned on. The ring of light illuminates...the *Battle Top Arena*!

Annually, members of the Keystone Wood Turners (KWT) from eastern Pennsylvania gather in a darkened basement shop around this Battle Top Arena. It has a gleaming 30"- (76cm-) wide piece of maple turned into a stepped, slightly concaved dish. The sides are 2¾"- (7cm-) high Plexiglas and four starting blocks are fitted into openings in the Plexiglas. The arena sits atop a 40"- (100cm-) high base *(Photo 1)*.

It is the start of our annual Battle Top Event. Turners who have not yet participated question why all the fuss—there are no motors involved nor any drinking. Why would adults gather so excitedly to play with what could be considered a kid's toy? Once it's explained, most quickly understand.

It is a big event with plenty of good-natured competition, and it's more than that. This competition helps build group camaraderie while we play with what we have turned. Entrants make a top just like everyone else's and the same length string is wrapped around it. Hold onto the knob on the string, give it a yank, and the competition begins. Tops careen erratically around the arena banging together, sending some flying. Things settle down a bit and tops start to dance and circle each other. Some look like prizefighters as they drop in now and then to take a shot and circle out of the way. Other tops careen toward them and at the last second, they deftly spin out of the way.

In the end, only two tops are still spinning. With little momentum left, they become wobbly and look punch drunk. The crowd pushes closer to see whose top topples first. It's at that point the two competitors wonder out loud if they did enough. The crowd joins the speculation: Was the shape correct? The weight evenly spaced? Was the string wound the correct way? In the end, one top falls over; the other is gloriously spinning alone. In that instance, you have your answers. Whether or not the differing opinion has anything to do with the winner's top, he or she can forever say, *Yeah, but my top beat your top!*

Running the event

We run the event like most bracket-type eliminations. Early testing showed how important it was to limit weight and design options, so there is a pre-race weights and measure phase. We want to have a long battle with as much action as possible—everybody remembers those early-phase, thirty-second knockout prizefights. They were exciting...for about thirty seconds. We now restrict weight and contact areas to ensure all entries have a fair chance to bang around a bit.

Each combatant is given a number and his or her top is placed in a holding block so no one is tempted to fine-tune their top during heats—although everyone just holds their top between heats anyway. Our holding block is a stand with numbers on it.

We use software designed for running Cub Scout pinewood derby races to determine heats and scoring. An alternative method is to number each entry, then number tongue depressors similarly and place them, numbers down, in a container. Before each heat, draw four sticks at random: The first stick drawn starts at gate #1 and so on. The tops are placed in the gates with 30"-long strings

wound around them, and on *ready, set, go!* strings are pulled and they're off! A club member removes the fallen tops from the rink until two are left. Last top spinning wins the round.

The points awarded are: 1 point for first, 2 for second, 3 for third, 4 for fourth. We track scores on a separate sheet as hash marks and a total of 9 points or more means elimination. New sticks are drawn for the next heat. An odd number in the last heat means a lucky break for someone.

For the next heat, the sticks are placed back in the container. Heats are run until there are only four players left. The slate is wiped clean and those four battle through new heats until eliminated by points. The winners receive a gift certificate and the top finisher is awarded a first-place trophy.

I designed the trophy quickly in a late-night, pre-race-day frenzy. The design has become something of an issue: Consensus is that it looks like a fancy toilet plunger with a glass globe on top. But, it's my game and my rules, so I added a new rule, "The winner *must* accept the trophy from the previous winner." This rule has ensured that last year's winner doesn't try too hard for fear of having to display the trophy for another year. For some strange reason, though, the trophy has disappeared. No kidding—it really cannot be found. I can only assume somewhere out there somebody is truly appreciating its beauty…or their house has bad plumbing. ▸


2

The top is mounted onto rails, which are inset from the edge. The Plexiglas is screwed to the edge of the arena.

Battle top rules

The last top closest to the center of the arena and still vertically spinning wins!

The battle

At the start, place your top, wound with string, in a starting block and hold it against the cradle with a finger while your thumb supports the start gate. With your free hand, pull the string and release the top. The first and second tops to stop spinning will be removed from the arena. The remaining two battle to the end.

Points are scored based on order of finish—too many points will eliminate you. Elimination rounds will be held and the finishing position of the four tops scored until there are only four tops left to compete in the final round.

Top design

Tops must be hand turned, newly made, and pass a weight and measures process before being allowed to compete. All surfaces that will contact the arena and other tops must be made of wood. Non-wood materials may used to add weight, but must be firmly glued in place. No metals are allowed as protrusions—metal could dent the surface of the arena.

The shaft of the top needs to be straight and also stick out below the bottom of the body ⅝" to clear the bottom of the cradle. In order for the top wrapped with string to fit within the cradle, the top of the body can be no higher than 1⅝" from the arena surface.

The bottom of the shaft must also be flat or it will not travel down (or up) the concave surfaces. The requirement is a minimum diameter of ⅛" and maximum diameter ¼". If a top fails to end up in the center or spends too much time hugging the wall, it will be disqualified; however, the participant may blow the top back into action.

The widest point of the top's body must have texture or small indents to cause other tops to bounce off it—this is a *battle*, after all! Indented edges should be smooth; otherwise the starting blocks could cause tops with sharp or square-edged indents to slow drastically.

Top dimensions

- Weight: 1½ oz maximum
- Length: 2½" minimum, 3¼" maximum
- Widest diameter: 2¼" minimum, 2¾" maximum
- Widest point thickness: ⅛" minimum, ¼" maximum
- Widest point center height from bottom: 1⅛" minimum, 1¼" maximum
- Widest point must have indents or texture: 1/16" maximum depth, ⅛" maximum width

Knob for string

Tops are spun by wrapping a 30"-long string around them. The end of the string is attached to a knob. That knob is your design but should have an eyelet or hole to attach the string to and be able to pass through the ¾" by 1½" hole of the starting gate. String will be provided.

Hints

A shaft that is too thin can break—there is a lot of torque applied when the string is pulled. Leave enough room above the top of the body to wrap the string around the shaft and still fit under cradle of the starting block.

The last top spinning in the center wins. Ideally, that means the winning top will spin faster and longer and knock other tops off balance and end up in the center. In a perfect world, this might all be possible, but in the battle arena, there is strategy to consider: Do you want your top to bang others? Or stay spinning and out of trouble all together?

Other rules

All rulings by check-in and heat judge(s) are final. You may use a back-up top in case of non-repairable breakage, but it must also be weighed in ahead of time and placed in holding blocks.

Substitutions, repairs, or adjustments can be made only for broken tops. After the start of the event, fine-tuning is not allowed. Tops must be returned to holding block between rounds.

To ensure new tops are made each year, competing tops will be collected at the end of event and returned at the end of next year's event.

Another game

We also hold a longest-spin contest. The same rules apply, except that spin tops do not have to have a flat bottom or be textured.

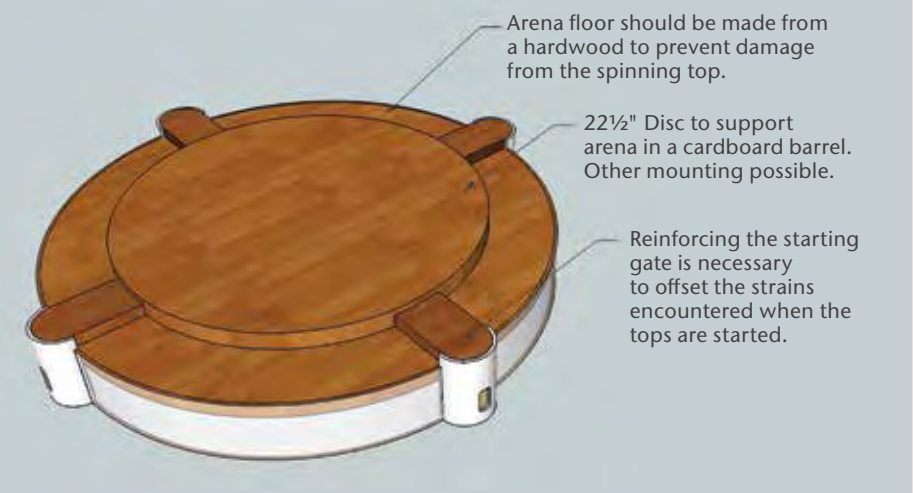


Figure 1. Battle top arena, bottom view

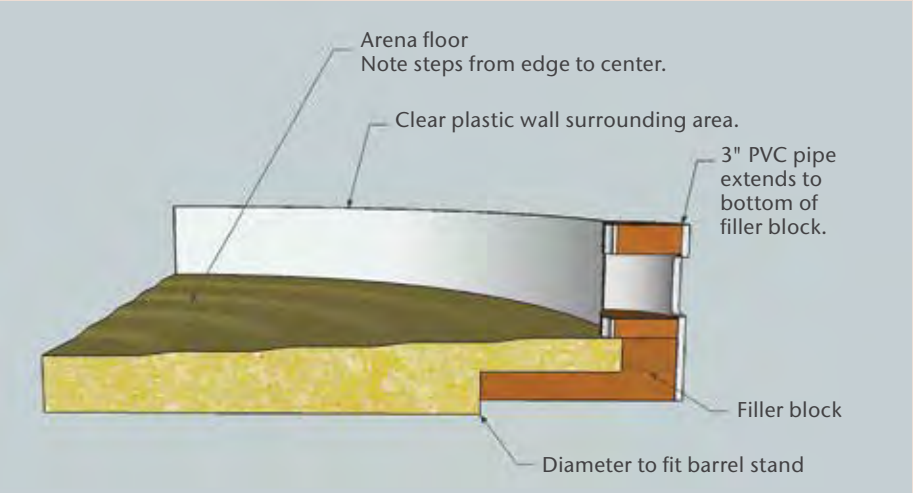


Figure 2. Cutaway of the arena

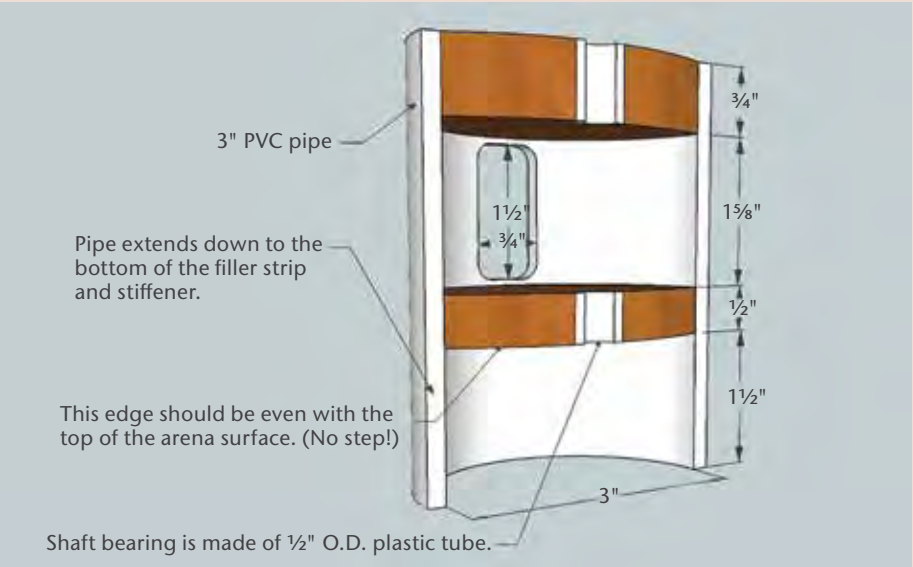


Figure 3. Starting gate

Arena top

I made the arena from glued-up 2"- (5cm-) wide maple boards about ⅞" thick. I used an already-glued up board, which ended up being fairly thin in the middle after turning. To its underside, I had to mount hardwood rails, 2½" (6.4cm) wide by ¾" (2cm) thick, (which were glued and screwed at the ends where the top was thickest) at 90 degrees to the glue joints in the top to help keep the thin top from warping. To allow the top to be placed on the base with the rails inside the base, the rails were inset from the edge *(Photo 2)*.

For your arena top, I suggest you use thicker boards to begin with and turn the top and insert all as one piece *(Figure 1). This removes the need for rails.* The insert for the drum could be made in a variety of ways, perhaps from one wide board.

In order to turn the top of the arena, I had to mount the insert to the rails, but did not glue it. To that board, I attached a faceplate and mounted the assembly onto the lathe. I turned the arena top round, then made it concave slightly toward the center in rings about 4" (10cm) to 6" (15cm) wide *(Figure 2)*. The idea is that the incline is slight enough for the tops to be knocked back up to even the highest level. The slight incline of each ring allows the tops to spin on different levels (rings) and not just gravitate to the center all the time.

To create the mounts for the starting gates to attach to the arena, I had to remove the insert and *temporarily* mount three, ½"-thick by 3"-wide boards to the underside of the top. One runs parallel between the supports and is positioned so that it runs through the very center of the top. The board will also stick out past the edges of the top at least 2" on both sides. Add two more (shorter) boards at 90 degrees to this board, also centered, and each one also sticking out 2" past the edge.

There will be four, 2" lengths sticking out of the top, onto which the four starting gates will be mounted.

There are also grooved or dished areas (channels) starting right in front of the starting gates about 4" wide that run straight across the rings, narrowing to 1" or so as they reach the edge of the 6" center. I had to use a pad sander to create these channels, but don't add the channels until after mounting the starting gates. There is no finish on the surface other than occasionally adding mineral oil. Once round, the starting gates can be added as well as the disc that will fit into the drum.

The base is a cardboard 55-gallon drum with fabric around the outside to dress it up. We add sandbags (or logs) for weight during the event. Angle irons attach the top to the base.


3a


3b

The starting gate has an opening in the back for the string.


3c

A top leaves the starting gate, spinning at top speed.


4

Each spin top needs a 30" string wound around its stem. Competitors design the knobs.

Starting gates

The starting gates are 3" PVC (75mm) pipe 2⅞" (7cm) high, cut lengthwise *(Figure 3)*. Our starting gates look like they have veneer added, but because I refinish furniture, I made the plastic look like wood by drawing and shading with my touch-up stuff for furniture repair *(Photo 3a, 3b, 3c)*.

For the ¾" by 1½" hole for the string to pass through, after the PVC is cut to length, drill two ¾" holes in the back, one at the top of the opening, the other at the bottom. Make straight cuts with a small saw to connect the holes. Sand the sides of the holes smooth; otherwise, the string will rub and fray.

The starting gates are at the point where they need to be positioned onto the top. Place each cut PVC on top of a board and up against the edge of the arena surface. Trace the curved inside edge onto the board. Keep track of which pipe is used for each of the four boards to ensure that the pipe fits its respective board.

Detach the boards and cut the curved ends using a bandsaw. Remount the boards and glue and screw them in place. Ideally, they will be equally spaced around the outside of the arena. The vertical channels can now be sanded into the top surface so that the channels will line up with the positions of each starting gate.

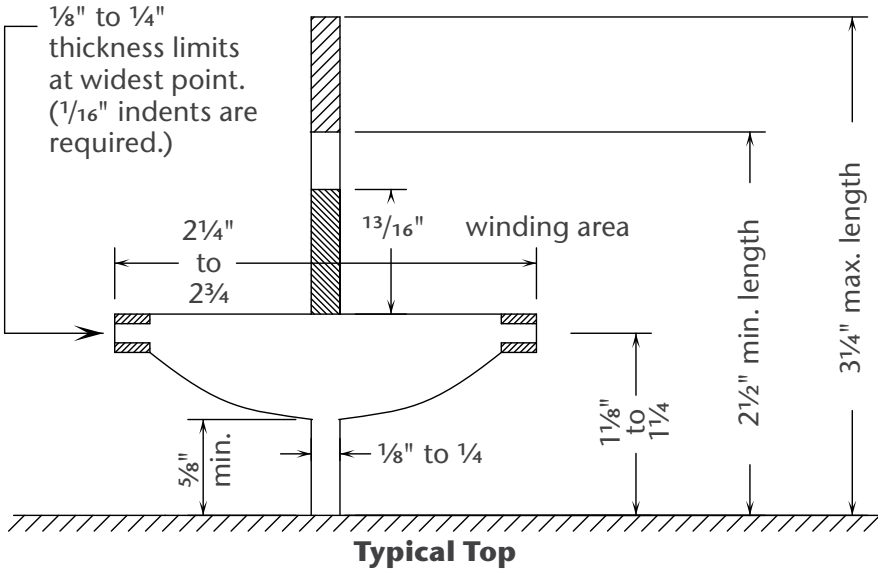
The PVC-pipe starting gates need two half-round rests each—one glued into the top and another into the bottom. (I used liquid-nail construction adhesive, but since some of the rests have come off, it's probably best to also screw them to the PVC pipes.) Cut eight 3"- (8cm-) diameter discs, four will be ¾" (19mm) thick and four are ½" (13cm) thick. Drill a ½" hole off-center in each of them (for the stem of the spin tops). Glue into each hole a length of ½" plastic tubing. Cut about one-third of the each disc off in an arc to open up the drilled hole *(see Figure 3)*.

The bottom also needs a filler block that is as thick as the arena top. Use a small length of 3" PVC to draw the circles. One side will be rounded to fit into the starting block and the other curved to match the curve of the arena. Glue one disc to the bottom of each of the starting gates (or to the supports sticking out of the bottom of the arena top).

Glue and screw the starting blocks onto their respective rests. It's important for the contestants to brace the starting block with their thumb while they pull the string to release the top ▸

Harry Pye with the trophy he won in 2010.

Measuring tops



Keystone Woodturners Battle Tops
Maximum Weight: 1.5 ounces
(Tip touching the arena surface must be flat, not pointed.)

Gauges for spin-top construction

An official diameter gauge can easily measure each contestant's spin top.

A gate gauge helps contestants visualize the specifications for tops.

We supply mini handout gauges for contestants to take home.

into the arena. The starting blocks can come loose.

Measure for the Plexiglas sides. Use a flexible measuring tape or string to measure the distances between starting gates and transfer those distances to the Plexiglas. Cut four lengths. Drill holes in the Plexiglas for the mounting screws. The holes should be slightly larger than the shank of the screws, and the screws need to have wide flat heads. Start on one end and work toward the other end using the holes in the Plexiglas as a guide. Drill each hole in the wood and screw the Plexiglas in place as you go. I made a numbered pattern from Masonite for the sides. The Plexiglas occasionally needs replacing.

Spin tops

Every year, each participant makes a new spin top (or two) for the competition, which is an excellent way to ensure active turning participation with club members *(Photo 4)*. The specifications for designing the tops are given in the sidebar and we have developed a number of gadgets to verify that tops meet specifications *(see Measuring Tops)*.

The Battle Tops Competition is a simple idea that through testing quickly became not so simple. It is a lot of fun, though, and worth the work involved. ■

Rob Shafer, president of the Keystone Wood Turners, has been a woodworker all his life and has been turning for eight years. He is president of a furniture-repair service that repairs new furniture for retail stores. Battle Tops is Rob's brainchild. Contact Rob at thegpw@comcast.net for questions.

Harry Pye created the drafting pictures. David Souza, who opens his shop every year for this and other special club events, helped keep me on the right (safe) track turning the arena top.

Mini METAL LATHE *for* WOOD

Bill Ooms

The Grizzly G8688 is a typical mini metal lathe.

A small metal lathe is useful to the woodturner for making precise cuts. It allows cylinders to be turned with flat outsides, insides, and tops. Snug-fitting lids on boxes are easily made to achieve a suction fit. With a bit more effort, threads can be cut with great precision. And, of course, you can make metal pieces for those special fixtures needed around the shop. A number of companies make mini metal lathes that sell for around $600.

Safety

A metal lathe is significantly different from a wood lathe. Be sure to read all of the safety information that comes with the machine. If you are uncomfortable with any aspect of working with a metal lathe, seek additional instruction. If you choose to use the equipment for cutting metal, be sure to get an instructional book or video on the proper techniques for safely turning metals. Always wear safety glasses. Do not remove any safety shields while running the equipment, and provide adequate lighting. ▸

Adjust the gibs on the dovetail slides with an Allen wrench and then gently tighten the locking nut.

A modification to the carriage saddle allows me to lock the carriage with a brass screw in a drilled and tapped hole.

A quick-change tool post with an assortment of tool holders and cutters.

The basic cutter is a ⅜" square HSS tool blank sharpened like a scraper on the end and one side.

Terms

The *carriage* is the assembly that moves along the bed of the lathe. It can be moved manually by rotating a handwheel, or it can move automatically at a constant speed by the lathe by engaging a *feed lever.* The direction can be set to move either to the right or to the left.

The *cross-slide* moves perpendicular to the bed of the lathe on a dovetail slide by means of a dial or crank.

The *compound-slide* is mounted on the cross-slide and moves in a direction that is typically along the axis of the lathe, but can be adjusted to some other angle. It moves on a dovetail slide by means of a dial or crank.

Gibs are narrow pieces of metal that fit between a dovetail and the adjusting screws of a slide.

The *tool post* is where the cutters are mounted. It is convenient to have a quick-change tool post to make it easy to switch from one tool to another.

Cut on the outside of a cylinder moving from right to left—note that the end of the tool is not scraping flat.

Cut on the end of a cylinder—note the tool is at a slight angle and the side is not scraping flat.

Cut-away view shows the use of a boring bar inside a cylinder moving from right to left.

Cut-away view shows the use of a boring bar on the bottom of a cylindrical hole.

Equipment

For a review of mini lathes, visit mini-lathe.com. Bookmark the website—it has a wealth of information on machines, accessories, and materials. My lathe is a Grizzly G8688, a 7 × 12, which means a 7" (18cm) swing and 12" (30cm) between centers *(Photo 1)*. There are shorter lathes, but the longer bed is important. I have had mine for seven years, so there may now be better options available.

Most metal mini lathes arrive packed in sticky red grease. Buy a gallon of kerosene, cheap paintbrushes, and plastic containers. Strip the lathe apart, clean everything (except the electronics, of course), and reassemble with good lubrication (like white lithium grease). This will also familiarize you with the machine. Be especially careful when taking apart the slides—note the orientation of the gib strips.

Adjustment

The slides on these inexpensive lathes must be adjusted regularly—if there is play in the slides, chattering will occur. Review your manual for instruction on adjusting the slides. The gibs, which are adjusted by setscrews and locked with locking nuts, must press snugly against the dovetail. Adjust by using an Allen wrench to keep the setscrew from turning while you gently tighten the locking nut *(Photo 2)*.

Adjust the compound-slide gib and the cross-slide gib so that there is a slight binding on the movement. Also, adjust the carriage for a snug fit along the bed of the lathe. On my lathe, there are adjustments on the underside in the front and the rear of the carriage. I remove the rear splashguard to get at the back, and remove the front apron to access the front. When I use the lathe a lot, I clean and adjust everything monthly. Don't rely on the angle indicator on the compound slide—use a square to make sure it is perpendicular to the cross slide; otherwise you may find your cuts are not square.

Slight modification

On my lathe, there was no lock to keep the carriage from moving left or right when I wanted it to stay in a fixed position while cutting. I made a modification by drilling a hole in the carriage saddle. I tapped the hole and inserted a brass screw with a lever added to it *(Photo 3)*. Allow sufficient clearance for the gib-adjusting screw. (Brass will not score the machined finish on the bed of the lathe.) To lock the carriage in place, I tighten the screw.

Accessories

There are several accessories you will want to add from the start. A good place to find them is at littlemachineshop.com (LMS).

- First, add a quick-change tool post, which makes it fast and easy to change cutters. A starter kit will have several tool holders to accommodate square cutters, round boring bars, and cut-off tools *(Photo 4)*.
- Buy a cut-off blade, which is like a parting tool (*Photo 4,* far right). The ones for metal work have a T-shaped cross-section with a slightly fatter portion at the top and narrower at the bottom. This greatly reduces friction when parting off pieces.
- A drill chuck that fits in the tailstock is useful. LMS Product # 1796 is a starter kit with a ½" 2MT to 33JT drill chuck, four short center drills, and five ⅜" (10mm) square HSS tool bits.
- Select boring bars to cut inside holes (*Photo 4,* far left). I have used the LMS Product # 1246 set for a number of years.
- A dial caliper is the best way to measure the inside and outside diameters of cylinders.

The dead center that may come with your lathe is not good for use with wood, but you will probably be able to use the live center from your wood lathe. Optional is a 1½"- (13mm-) diameter two-fluted end mill—it works well for drilling flat-bottomed holes. The ½" size gives enough clearance to insert a boring bar to enlarge the hole.

Mounting the work

The basic three-jaw chuck that probably came with your lathe has two sets of jaws—one for grasping the outside of the work and one for grasping the inside of a recess. I find it easiest to first rough turn the work on my regular lathe to make it round. Then it fits well in the three-jaw chuck. When changing jaws in the chuck, be sure to insert them in the numbered order. I scribed the numbers 1, 2, 3 on the perimeter of my chuck so that each jaw always goes back in the same position. A pencil mark on the wood allows for remounting in the same position.

Sharpening the tools

Most of the exterior cuts are made with ⅜" square HSS blanks, which are sharpened like scrapers *(Photo 5)*. In my experience, a negative-rake angle is not needed because the tool is held firmly in the tool holder, which prevents it from being drawn into the work. I sharpen my cutters to about 15 degrees from vertical on the end and about 5 degrees from vertical on one side. I make the angle between the side and the end (when viewed from the top) slightly less than 90 degrees—more on that later.

I have one tool sharpened on the end and left side for cutting in the left direction and another tool sharpened on the end and right side for cutting in the right direction. I grind the end of the cut-off tool back much like a regular parting tool. The boring bars are carbide tipped, so you won't have to sharpen them (although you can touch them up with a diamond stick).

Once a cutter is mounted in the quick-change tool holder, it is important to adjust the height. There is an adjusting nut that rests on the top of the tool post—adjust it so that the top of the cutter is right at dead center of the work. Then tighten the locking nut. Now you can swap tool holders and always be assured that the height of the tool is set correctly.

Basic cuts

In general, I keep the metal lathe set to the high rpm range, except when drilling. To cut the outside of a cylinder, you can move the carriage manually with the handwheel, ▸

Make a clean and square cut on the end of the body of the box.

Make multiple cuts to reduce the outer diameter of the body of the box.

Drill out the bulk of the material with a Forstner drill bit.

Make multiple cuts with a boring bar to enlarge the inside of the cylinder to its final dimension.

Cut a tenon for the lid by taking multiple cuts to the final dimension.

Make a feature ring for the box by cutting a hole with the boring bar to match the size of the tenon on the box.

Part off the ring with the cut-off tool and catch the fragile ring with your finger.

Glue the ring onto the tenon. When it's dry, clean up the surface to remove any glue.

or move it with the automatic feed feature by engaging the feed lever, or lock the carriage and use the crank on the compound-slide. There is a lever that sets the direction of the automatic feed (on the back side of my lathe). Just be sure to disengage the feed lever before your cutter crashes into the chuck!

I generally make cuts of about 0.020" (0.5mm) per pass and then make a final cut of 0.005" (0.1mm) or less for a smooth finish. The cutter should be positioned in a way that you cut with the very corner of the tool *(Photo 6). Do not scrape with the entire face of the tool!*

Loosening the mounting bolt of the quick-change post easily rotates the angle of the tool. Keep in mind that if you move the cutter in by some amount, the diameter of the work piece is reduced by two-times this amount.

To cut the end of a cylinder, lock the carriage in place and move the cutter into the work with the cross-slide crank (*Photo 7*). After backing the tool away from the work, move it laterally with the compound slide crank for another pass as needed. Again, don't scrape with the entire edge of the tool. Loosen the quick-change mounting bolt to rotate the cutter properly. The cutter's less-than-90-degree angle between the edge and the end allows me to set the angle of the tool just one time and use it both for cutting the edge of the cylinder and for facing off the end of the cylinder.

Box, 2012, African olive, 2¼" × 2¼" (57mm × 57mm)

To quickly get the majority of the material from inside a cylinder, use a Forstner bit with the drill chuck mounted in the tailstock. I prefer Colt Maxi-Cut bits because they don't overheat, even in the hardest woods. Drill out the inside of the cylinder to about ⅛" (3mm) smaller than the desired inside diameter. Then use a boring bar to do the final sizing of the interior (*Photo 8*). I find that for rough cuts, it works best to move left into the work using the handwheel, and then make a final cut (a few thousandths of an inch) going toward the right, coming out of the interior of the work using the lathe's automatic feed.

If you want a flat bottom inside the cylinder, use the boring bar to clean up the dimple left by the

Forstner bit (*Photo 9, highlighted in red*). You will not be able to take big cuts because the boring bars are nearly flat on the end. Lock the carriage and start with the corner of the cutter at the very center, advance the cutter to the left about 0.010" (0.3mm), then move the cutter outward with the cross-slide crank.

Parting cuts are easily made with the cut-off blade. Simply lock the carriage and advance the cutter into the work with the blade perpendicular to the surface. As with any parting operation, deeper cuts should be made with multiple cuts to widen the gap and prevent friction and binding.

Threads can also be cut using a rotating 60-degree angle cutter (as used with the Bonnie Klein jig). Threading is a separate topic, beyond the scope of this article.

Make a simple box

I started with a piece of African olive and rough turned it to a cylinder 2.25" (57mm) diameter and 3" (76mm) long. Unlike other olives, African olive is a stable wood. I marked the cylinder to allocate about ½" (13mm) for the base, 1.5" (38mm) for the center cylinder, and about ½" for the top and parted off the top for later use.

In the metal lathe, square off the bottom end of the cylinder, then flip it around and square off the top (*Photo 10*). Turn the outside of the cylinder to 2" (51mm) diameter by taking several cuts from right to left up to the pencil lines marking the cut-off point (*Photo 11*). I usually take about 0.020" (0.5mm) per pass moving the carriage with the handwheel, then the final 0.005" (0.1mm) with the automatic feed going from left to right for a clean final cut.

At a low rpm, drill a 1½" (38mm) hole with a Forstner bit going 1.5" deep. If the quill on your lathe does not have measuring marks to determine the depth, then count rotations of the crank—mine is 17 turns per inch (1.5mm pitch) so 25½ turns will get me to the proper depth (*Photo 12*).

Bore out the interior so that the wall thickness is 0.2" (5mm) (*Photo 13*). I usually take about 0.020" per pass moving the carriage to the left with the handwheel, and then the final 0.005" with the automatic feed going to the right for a clean final cut.

The dimensions of the tenon for the lid can be controlled precisely on a metal lathe. Touch the cutter to the end of the cylinder, lock the carriage, and set the dial on the compound-slide to zero. Then, touch the cutter to the outside of the cylinder and set the dial on the cross-slide to zero. Now you can read the dials to know how far you have moved the cutter and can control the tenon precisely. Cut the tenon to 0.100" deep. My lathe has a movement of 0.040" (1mm) per rotation, so that is two full rotations plus an additional 0.020" on the dial. Usually, I take a cut about 0.080" (2mm) wide (two turns on my compound slide). Make the width of the tenon 0.300" (7.6mm). The last time you cut into the work, keep the cutter at the final depth and move the cutter to the right with the crank on the compound-slide to make a final clean cut that should leave the diameter at 1.800" (45.7mm) *(Photo 14)*.

Feature rings

For the two feature rings, rough turn a piece of African blackwood to a bit over 2" (51mm) diameter on your wood lathe. Then in the metal lathe, square off the end and drill a ½"- (13mm-) diameter hole ¼" (6mm) deep. I prefer to use a two-fluted end mill as it gives a flat-bottomed hole. ▸

Part off the cylinder with the cut-off tool.

After making a tenon on the base and adding another feature ring, turn the outer diameter of the ring to match that of the box.

Make a recess in the lid with a two-fluted end mill.

Enlarge the recess in the lid with a boring bar to provide a snug fit on the tenon on the body of the box.


22
On your regular lathe, turn a profile on the base of the box.


23
Turn a profile on the lid of the box while the lid is held in place securely with the tailstock.


24
Turn the top surface of the lid.


25
Final turn the bottom of the box.

This is a more ornate example of a box made on the metal lathe, then decorated on a rose engine (inspired by a Steven Kennard box), 2011, Blackwood, cocobolo, 2¼" × 2" (57mm × 51mm)

With a boring bar, touch the end of the cutter to the end of the cylinder, lock the carriage, and set the compound-slide dial to zero. Insert the end of the boring bar into the hole by 0.080" and cut outward using the crank on the cross-slide (*Photo 15*). The final size of the hole should be 1.805" (45.85mm), which is 0.005" larger than the tenon you previously cut. As you get close to the final dimension, stop and check the size with a dial caliper.

Gently part off the ring to a width of 0.050" (1.3mm). The best way to measure is to line up the right side of the cut-off tool with the right side of the wood, lock the carriage, and set the compound-slide dial to zero. Now crank the compound-slide over by 0.050". Note: I use my finger to catch the fragile ring (*Photo 16).*

Glue the ring onto the tenon of the box with the parted side up using regular polyvinyl acetate (PVA) glue. When it has dried, remount the work into the chuck, using a pencil mark to align it to the same jaw. You can now clean up the top edge of the ring and any glue squeeze-out (*Photo 17*). Gently cut the outer diameter of the ring to match the outside diameter of the cylinder by taking small cuts from right to left.

Sand and part off the cylinder

This is a good time to sand the inside of the cylinder.

Then, to part off the cylinder, first measure the actual depth of the bottom of the cylinder. Part off just a bit less than that dimension—you want the cut-off tool to cleanly cut through the cylinder (*Photo 18*) and catch the cylinder with your finger. To get the bottom of the cylinder perfectly flat, gently sand on a piece of 150-grit abrasive placed on a flat surface.

Clean up the top surface of the base piece that is left in the chuck. Cut it back enough to remove the dimple left by the Forstner bit and then sand that surface. Cut a tenon in the base to match the inside diameter of the cylinder, which should be 1.600" [41.0mm]. Make the width of the tenon 0.150" (3.8mm) and cut another blackwood ring as before. Glue the ring and cylinder onto the base, being careful to align the grain of the wood. When it's dry, carefully trim the outer diameter of the ring to match the outer diameter of the cylinder (*Photo 19*). This is a good time to sand the outside of the cylinder.

Lid

Mount the lid piece that was set aside earlier and clean up the inside surface. With the ½" end mill, drill a hole 0.270" (6.9mm) deep to allow a bit of clearance for the tenon on the box, which should be 0.250" (6.4mm) (*Photo 20*). With a boring bar, enlarge the hole by advancing into it about 0.080" each time and cranking out with the cross-slide until you are close to the desired dimension of about 1.800" (*Photo 21*). Approach the final dimension carefully to achieve a snug fit between the lid and the box. Generally, I take one thousandth of an inch (0.001) on a pass, bevel the corner a bit with abrasive, and then check the fit. When the desired fit is achieved, sand the inside of the lid.

Remount to a wood lathe

The rest of the work can be done on a regular lathe. I mount the box with expanding jaws inside the box. Covering the jaws with blue masking tape to protect the wood, trim the base to the desired size, and turn a recess in the base. You could also make a jam chuck to do the same. Now I can hold the box with expanding jaws in the recess and turn a pleasing shape on the bottom (*Photo 22*). Sand.

With the lid held on the box securely with the tailstock, I turn a matching curve on the lid (*Photo 23*). For turning the remainder of the lid, I mount it in expanding jaws covered with a bit of blue masking tape and create a gentle dome shape (*Photo 24*). Sand.

To cut away the recess from the bottom of the box, I mount the box in expanding jaws covered with a bit of blue masking tape (*Photo 25*). Note: you want the top of the box to sit flat on the jaws of the chuck. My jaws have a bit of a fillet so I use a space of scrap wood to permit the top of the box to sit flat without interference from the fillets.

Finish as desired.

This simple box was intended to teach the various techniques using a metal lathe for wood. Once you master these basic skills, you will be surprised how often you will use the metal lathe to make precise cuts on many of your other projects. Admittedly, the same box could have been made with plain turning, but in my next article, I will discuss how to make multiple thin layers on the outside of a similar box. The thin layers can only be created with the precision of a metal lathe. ■

Bill is a second-generation woodturner and learned basic woodworking from his father. As a young man, his desire was to envision and create new things, which led to a career in engineering. In retirement, he has returned to his roots as a full-time woodworker. Recently, he has been working with rose-engines and ornamental turning, which combine his woodturning skills with his math and engineering background. More of Bill's work can be seen at billooms.com and a profile of him appeared in Woodturning *magazine, November 2012, no 246.*

Upcoming in April!

Layered Box, 2012, thin layers of African blackwood and bloodwood over a core of coffeewood burl with pink ivory on the lid, 3" × 2" (76mm × 51mm)

In the next issue of *American Woodturner,* Bill will extend these techniques and describe how to use the metal lathe to create a box with multiple thin layers on the outside. Cutting through the layers with an ornamental lathe will create unique patterns as the layers are exposed through the cuts.

Bowl-Saver Systems

John I. Giem

If you have ever turned a bowl with beautifully figured wood and thought, *What a shame to convert most of this wood into shavings,* then a bowl-saver system may be for you. These systems enable woodturners to separate one bowl blank into multiple bowls.

Understanding the differences among the various systems available will provide a better understanding of the principles of operation—how the systems are constructed and should be used. Armed with the knowledge of proper use, you can more easily obtain positive results.

Basic requirements

The basic requirement for a bowl-saver system is the ability to cut a kerf all of the way into, or near, the center of a bowl blank so that a smaller bowl blank can be removed intact. The cutter bar must be either straight or curved at a constant radius (part of a circle) to avoid binding on the walls of the kerf. The cutter will be extended deep into the wood, and this will create stresses to be overcome with some sort of tool support.

With a straight cutter, guidance is simple: The turner can look into the kerf and see what is happening. But with the more commonly used curved cutters, one cannot easily see the cutter or determine where it is going. Manufacturers have developed special guidance techniques for curved cutters.

For three bowl-saver systems—WoodCut BowlSaver, Kelton McNaughton Bowl Saver System, and Oneway Easy-Core Coring System—I examine the basic requirements to show how they are implemented and work together and compare advantages and disadvantages. These comparisons can help you decide which system to purchase and also help clarify the process of setting up and using them.

The cutter bars

For part of the analysis, I use the McNaughton system because it is easier to illustrate some key points—this is not meant to imply it is better or worse than the others.

Start by looking at the cutter bars from the McNaughton system. Three cutter families are represented: mini, regular, and jumbo. (The McNaughton micro set is not included.) For convenience, the bars are labeled A through H starting with the smallest cutter in the mini set to the largest in the jumbo set *(Photo 1)* (A table listing information about this system can be downloaded at woodturner.org/products/aw/.). Bars C, F, and H all have a curvature radius of 11". At first glance, having cutting bars with the same curvature seems redundant. Looking a bit further, the *arc lengths (see Definitions)* are different, enabling each to cut differing depths into the blank. That helps explain why the bar heights increase when length increases. The longer lengths cause more strain on the cantilevered cutter

bar, so the bar height and width increase accordingly.

But why can't the largest cutter bar (H) make all of the cuts? The answer lies in two places: the cutter-tip width and bar height. The largest has the widest cutter and tallest height so will be used to cut out larger sub-bowls, which will have a large-radius kerf. The smallest cutter has the narrowest cutter width and least bar height, so it is used to cut out smaller blanks. If the largest cutter is used to core out the smaller blank, the width of the kerf would be significantly wider and result in wasted wood.

WoodCut and Oneway also recognize this limitation. Their cutter bar heights increase when the length of the cutter increases. Oneway also puts a small curve from top to bottom on their cutter bars, which provides more clearance within the curved kerf *(Photo 2)*. This is most evident when observing the curvature of the support fingers.

Tool support

When using a bowl gouge, we place it on the toolrest to help it resist the cutting forces. These coring systems have the same support needs but each is implemented differently. The WoodCut system has a support right at the edge of the platform just before entering the kerf. The Oneway system has a post providing support when first starting the cut. As the kerf deepens, the support post is repositioned to insert its support finger into the kerf, providing support closer to the tip of the bar, thereby reducing vibration and stresses. This support finger needs to be readjusted periodically during the coring process.

As the curved cutter bars progress into the blank, there are two types of forces generated: one downward and the other a twisting action, a torque. Both the WoodCut and Oneway ▸

Three sets of the McNaughton Bowl Saver System cutters. One of the curved bars from the regular set is held in the handle. To the right of the handle are the three straight cutter bars. The curved cutter bars progress from the jumbo set to the mini set.

The Oneway Easy-Core system showing the cutters of different sizes. Support by a live center in the tailstock is optional. The mounting slots in the base limit the positioning of the center post (the pivot).

The Oneway Easy-Core system is in position to begin a cut. The cutter bar/handle assembly is inserted into the center post, providing a physical pivot point to guide the cutter. Notice the support finger protruding from the support post. As the kerf progresses into the blank, the support finger is also advanced into the kerf. The support post and finger are movable independently of the pivot center.

Woodcut BowlSaver (for clarity, the tailstock support is not in position). The large cutter, on the left, is in position to begin a cut. The small cutter is in the storage position out of the way on the right side. The support stub that is to be inserted into the tailstock during coring is just below the handle. It is mounted on slotted brackets, which limit the positioning of the cutter assembly, thus limiting the positioning of the physical pivot.

In operation, the McNaughton Bowl Saver cutter bar rotates around a virtual center. The cutter bar passes through the rear support and is positioned between the two guide pins. Always keep the cutter bar extended so that the full height of the bar is within the guide pins. During operation, the cutter bar must be held up against the inside of the rear support frame. When properly utilized, the turret assembly absorbs all stress applied to the cutter.

After separation, use the outer bowl as a mandrel to turn a tenon on the base of the separated bowl. While lightly holding the bowl in place with the tailstock live center, place the tip end of the toolrest near the edge of the inner bowl. Slowly rotate the bowls by hand and note the varying gap between the bowl and the toolrest. Rotate the bowls to the widest part of the gap and gently tap the opposite side of the inner bowl to reduce the gap by half. Repeat until the gap is fairly uniform. After the bowl is centered well enough, tighten up the tailstock, smooth up the bowl, and turn a tenon. The rough texture is common and is easily cleaned up with a sharp gouge.

Create a circular template

Materials and tools:

- Stiff wire, about 10" longer than circumference of circle to be created
- Clamps for the wire
- Wire cutter
- Wrench or screwdriver
- Round, rigid mandrel for forming wire
- Clamp to attach wire to mandrel while forming the template

To work best, the circular template needs to be formed smoothly without kinks and be of the same curvature as the tool it will be paired with. After the wire is formed into a circle around a mandrel, it will spring back when it is released. By using a mandrel that is smaller in diameter than the target size, the template can easily be adjusted to the desired size.

Cut the wire longer than the circumference of the desired circle template. With the mandrel secured, clamp one end of the wire to the mandrel and wrap it around, overlapping as much as is comfortable. Unclamp the wire and loosely place two clamps on the wire where it overlaps. Capture both wires of the overlap within the clamps. With the cutting bar lying on a flat surface, place the wire ring over the curved section, aligning with it. Gently spring the wire in or out as necessary to match the curve of the cutter bar. Tighten the clamps and recheck. Using two clamps spaced apart forces the overlapping wires into better alignment, helping the overall shape of the ring.

To determine the radius of curvature of any cutter bar, lay out a series of arcs on a surface and match the cutter with the appropriate arc.

To help set up the bowl saver, make a circular template to match the curvature of the cutter. I used an old pot as a mandrel for shaping the wire. The mandrel should be slightly smaller than desired finished size of the template.

After bending the wire into a circle, place two clamps around the overlapping wires and adjust the loop to match the curvature of the cutter bar. Tighten clamps. Use this template to assist in positioning the entry angle of the McNaughton cutter when beginning the kerf.

systems use a bolt as the pivot post to resist the torque *(Photos 3, 4)*.

The McNaughton system uses a different approach: The cutter bar is held between two gateposts on the support turret. The close spacing of the gateposts prevents the cutter bar from twisting, enabling them to absorb torque. The turret assembly absorbs the large downward forces *(Photo 5)*. Keeping the cutter bar up against the rear bracket and down between the gate pins provides enough leverage to hold the cutter bar in place. When starting a cut, the cutter bar must be extended far enough to ensure the full height of the bar is within the guide pins to resist the torque.

Guiding the cutters

All three systems use curved cutters that are part of the circumference of a circle and the guidance methods must ensure the cutters move in a circular path. The methods of guiding the cutters are significantly different among the systems. For WoodCut and Oneway, the pivot point is physically there and easy to see: It is a *physical pivot point*. Place the pivot point at the correct distance from the surface of the bowl blank and the cutter at the starting position of the kerf. As the handle is used to move the cutter into the wood, the constrained cutter must follow the correct path. This is relatively simple and easy to set up—more on this later.

The McNaughton system has a virtual center as opposed to a physical one. This means that as the cutter moves in its circular path, it is pivoting around a *virtual pivot point*. You can't see it, but it exists. The bar is guided by the gate pins, by the curvature of the bar, and by the sides of the kerf, in particular the entry point.

Setup: inside out or outside in?

Some woodturners start by removing the outer bowl first and then progress down to the smaller ones: outside in. This requires cutting a tenon on each progressively smaller blank to continue the coring process. This has the advantage of removing the "money bowl" with the least risk.

Others prefer to remove the smaller bowls first: inside out. It is perceived as being more efficient—cutting tenons on the smaller bowls is done later *(Photo 6)*.

Setting up

In some cases, I discovered incomplete instructional literature and confusing videos for setting up the tools. One set of instructions based the placement of the pivot point on the outside-in process, but the actual demonstration showed the inside-out process. Be sure the method you adopt takes into account the changing position of the kerf within the bowl blank as the thickness of the wood between the chuck and the kerf changes. For example, using gauge blocks, sized for each cutter, between the headstock and the pivot point only works reliably when using the outside-in process. Using the inside-out process requires a different measuring method.

For each of these systems, the cutter will be guided in a circular

path as seen from above. By placing a circular template *(see Circular Template sidebar)* over the top of the bowl blank and aligning it with the *guide points*, you can see the kerf's path from its point of entry until the separation of the blank and can set up the equipment accordingly. In one case, the physical pivot point will be positioned to make the cut, but with the McNaughton system, the entry point of the cutter, along with the positioning of the turret, provides the guidance.

The first step is to verify the cutting tip is at the proper height *when the bar is fully extended*. This is essential to minimize problems. Also, verify the length of the cutter bar is sufficient to cut the kerf deep enough to remove the cored-out bowl. Be aware that in use, the noise and vibration may be more than observed in regular turning. Feed the cutter slowly with gentle but firm pressure. Back the cutter out of the kerf as needed to clear the ▸

7 In preparation for coring, mark the bowls on the blank to indicate the diameter and wall thickness of each potential bowl. A ⅜" ring between the bowls allows for the kerf.

8 Mark the positions of the interior kerfs and bowl bottoms on the top side of the blank. By eye, line up the ruler with the outside base of the bowl and use it to mark the positions of the interior cuts.

9 The markings show where the interior cuts will be made while coring out the bowls. The two spaces with the X's represent where the kerf will be and the two lines with the arrows are the inside surfaces of the two bowls that will be produced. This blank is not deep enough to make three bowls.

Achievable bowl-blank shapes

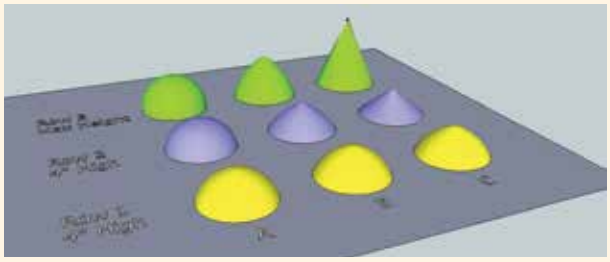
With the pivot point in line with the axis of rotation, the shapes of the cored-out sections will look like sliced-off pieces of a hemisphere. The depth of the cut will decrease as the pivot is moved toward the tailstock, but the shape remains hemispherical. Moving the pivot toward the headstock will increase the depth of the cut, giving a deeper cored-out bowl blank.

When the pivot point is moved toward the front of the lathe, the profile of the core will be flattened, becoming less of a hemisphere. When the pivot point is even further frontward, the base of the core will become dimpled at the center.

Moving the pivot point toward the back of the lathe results in a blank that is pointed or conical. The farther back, the more conical.

The front-to-back movement of a physical pivot point has its limits, as with the mechanical design of the WoodCut and Oneway. Using the same-size cutters in both the WoodCut and the Oneway systems, they can achieve similar core shapes and sizes. The Oneway has a larger set of cutters available than the WoodCut so it can cut a wider range of core diameters and depths.

The virtual-pivot concept of the McNaughton system allows a wider range of movement in all directions, limited only by the size of the lathe and its banjo. The length of the cutter limits the diameter and depth of the inner bowl—it must be able to penetrate deep enough to reduce the size of the spigot so that it can be easily broken for separation.



These shapes show the effects of using different-radius cutters. All the forms have the same base diameter of 10". The yellow and blue shapes are the same height, 4". The yellow shapes (first row) simulate the three largest Oneway cutters, left to right, 6", 7", and 8". The blue row simulates the McNaughton cutters, left to right, 5", 7", and straight. The green row uses the same McNaughton cutters, each cutting to their maximum depth.

There are different capabilities of using a physical pivot point or a virtual pivot point. The cylinder (a bowl blank) is 12" × 12". The yellow and cyan forms have 10" bases. The yellow form represents what can be achieved using the Oneway cutter bar with a 6" radius. The cyan form simulates the result of using a McNaughton cutter bar with an 11" radius. Other McNaughton cutters could also be used, creating their own unique shapes.

The first of three bowls is removed and the system is ready for setting up for the next cut. To determine the next location of the pivot point, place the tip of the large cutter at the surface at the center of the blank with the pivot aligned with the center. The distance from the blank's rim to the center of the pivot is measured: A inches.

When the first bowl was removed, the inside of the second bowl was exposed. When we core out the next bowl, we want to cut to the inside surface of the outer (next) bowl, the mark with the left arrow. The distance between these two arrows will be the thickness of the bowl. This is the amount the pivot point must be moved toward the headstock to make the tip cut to the proper depth: B inches.

The final step in positioning the pivot is to place the pivot at C inches (C = A - B) from the surface of the blank while the cutter tip is placed at the kerf's entry point. Be sure to place the cutter bar support close to the bowl so it will not need to be relocated later. The system is now positioned to core out the next bowl. This technique works for all systems with physical pivot points.

wood chips. In some cases with the McNaughton system, it may be necessary to widen the kerf a bit to aid in chip ejection.

Mark up the bowl blank

I describe how to mark up the blank for guidance, but after you gain experience, it will not be necessary to draw all of the lines in detail; instead, simply make a few marks and do the rest by eye.

Mount a bowl blank onto the lathe. Generally, green wood is used, but dry wood works also. On its face, draw a set of concentric circles defining the edges of the desired bowls with the kerfs in between *(Photo 7)*. For most green-turned woods, the 10-percent rule can be used—the wall thickness of the bowl blank is cut at 10 percent of its diameter. To aid the drying process, the wall thickness should be uniform from rim to bottom. If using dry wood, the 10-percent rule does not apply.

For a 12" (30cm) bowl blank, the wall thickness of the outermost bowl will be about 1¼" (32mm). Draw the first circle 1¼" in from the outside rim to define the inside surface of the outer bowl. Draw a second circle to define the width of the kerf, about ⅜" (10mm) inside of the first circle. Continue to draw circles to define the rims of all of the bowls and the kerfs. The number of bowls that can be removed from the blank is more dependent upon the depth of the blank than on its diameter.

On the top outside surface of the blank, mark the end points of the

Comparison of bowl-saver systems

Company	Relative cost	Learning Curve	Ease of placing, on and off lathe[3]	Ease of setup for each bowl.	Use	Best for
WoodCut Tools	lowest	short	better	relatively simple[4]	simple to use, good results	occasional coring of bowls up to around 10" (250mm)
McNaughton	medium[1]	medium to long[2]	best	medium[5]	new users—intimidating, low confidence in getting results; experienced users—high confidence, fastest to set up and utilize	advanced or professional turner wanting maximum flexibility in sizes and shapes, largest sizes
Oneway Tools	higher[1]	short	good (heavy, rugged)	relatively simple[4]	easy to use, minor time consumption to keep support finger adjusted, good results	advanced or professional turner wanting to produce consistent limited shapes, medium sizes, basically spherical

1. Cost depends upon number of options and size(s) selected.
2. Depends upon understanding the method(s) to align tool for proper entry, cutting path, controlling thickness of bowl bottoms.
3. Instructions for initial assembly and adjustments were all equally satisfactory.
4. Physical pivot point makes understanding easier.
5. Virtual pivot point can create some uncertainty that can be reduced by training and experience.

kerfs that define the thickness of the bowls at their bases *(Photo 8)*. Start by marking the location of the outside of the base for the outer bowl. Then measure inward the desired distance for the base thickness and mark it. Then mark the width of the kerf. Mark the remaining bowls and kerfs moving toward the top surface of the blank. This is a curved surface so don't measure along it but measure horizontally parallel to the axis of rotation.

For each kerf, mark two guide points: the entry point at the surface and at the corresponding position at the base *(Photo 9)*.

Cutter bar selection and setup

The particular cutter bar selected depends upon several factors: the radius of the kerf from the center of rotation, the depth of the cut, the desired radius of curvature of the cutter bar, and the wall thickness of the bowls. Select a cutter that gives the most uniform wall thickness. The curvature of the cutter bar can make the wall thickness at the center of the blank thicker or thinner than at the top and bottom. *The sidebar* Achievable Bowl-Blank Shapes illustrates how the different cutter bars will change the shape of the cored-out blank.

Once the two ends of the kerf are defined and the size of the cutter bar is selected, the setup of both the WoodCut and Oneway are essentially the same. Place the tip of the cutter at the surface of the blank at the center of rotation with the pivot point along the axis of rotation. Using the markings on top of the bowl blank, determine how far inward the cutter must be moved to reach the interior kerf *(Photos 10, 11, 12)*. Call this number A. Now measure the distance from the blank's surface to the pivot point, ▸

Drawing circles

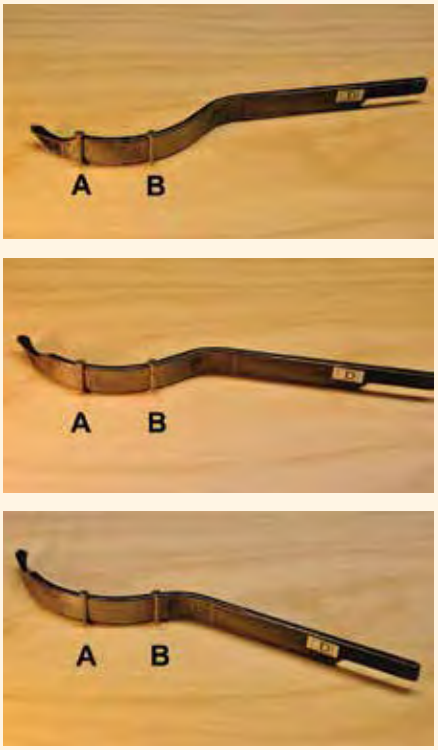
The different ways of making a circle are key to cutting the circular kerfs.

Using a compass to draw a circle around a given point is a straightforward process: Separate the legs of the compass, place one leg at the specified center and draw the circle.

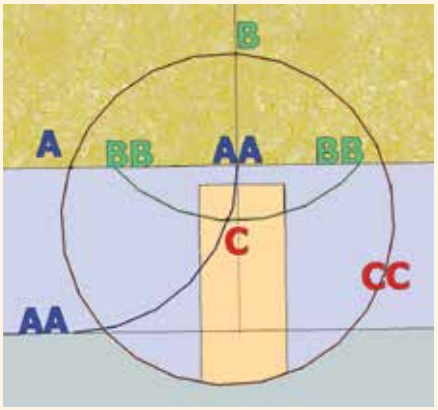
What about drawing a circle of a given radius and passing through two given points? This one takes more thought. First, find the center of the circle and then the circle can be constructed using the compass method. To do that, set the compass to the radius of the desired circle and place the pivot on the first point and draw an arc. Next draw an arc using the other point as the pivot. The intersection of the two arcs is the center of the desired circle—from there it is simple to draw the final circle *(see figure)*. This is the method used by the Woodcut and Oneway systems. The radius of the circle—the kerf—is determined by the size of the cutter bar selected. The cutter bar and the physical pivot point form the equivalent of a compass. Now, it is only necessary to properly place the pivot point.

The next configuration is a bit more challenging: Given the radius of a circle and two points lying on the circle, draw the circle. In this case, a compass is not available and although known, the location of the pivot point is not accessible. The solution is to use a circular template so that the section of the curved path can be constructed.

The McNaughton system uses two guide points the kerf will pass through and a curved bar (a template) to create the circle. The two guide points are (1) the entry into the kerf at the rim of the bowl and (2) the end point of the kerf at its base. By using a template to extend the curve through the two guide points, the proper position of the turret can be determined (it becomes another guide point). Then, by placing the cutter bar between the guide pins of the turret with the cutter tip against the beginning point of the kerf, the proper entry angle and path can be set.



These photos illustrate the concept of a virtual center. As the cutter bar glides along the two screws, A and B (guide points), it moves in a circular path around the virtual center. In the McNaughton system, the turret serves the function of the first guide point and the entrance of the kerf is the second guide point. As the kerf deepens, it also functions as a guide.



Task: Construct a 6" diameter circle that passes through points A and B. Solution: At point A, draw an arc of radius 6" (arc AA-AA). At point B, draw an arc of radius 6" (arc BB-BB). The center of the desired circle is point C. Using C as the center, draw the desired 6" circle (CC). Note that C lies within the area where physical pivot points can be placed.

call it B. Subtract A from B and label it C. Move the assembly so that the cutting tip contacts the starting point for the kerf. Adjust the pivot point so that the distance from the surface of the blank to the pivot point measures C. This provides a close approximation of the ideal location of the pivot point. Lock everything in place and proceed with the coring out of the blank *(Photos 13, 14)*.

The setup for the McNaughton system is almost as simple. Among the many methods, this one is effective: With the spindle locked and the markings for the base positions of the bowls at the top, at the outermost position of each defined kerf on the blank's surface, draw vertical lines upward to the edge of the blank. This helps align the tools to the entry point of the kerf *(Photos 15, 16, 17, 18)*. Use a couple of binder clips (paper clips) to hold and align the circular template on top of the cutter bar. View from above and align the template with the two guide points: the kerf entry point and the kerf position at the base. Placing the cutter tip at the marked location on the surface helps stabilize things and shows the cutter's position of entry. The objective is to align the template and the cutter bar so that the angle to the blank's surface is the same for both. That angle is used when starting the cut into the kerf.

Note the position of the handle of the cutter—it will be pointing at something in the room, an *aiming point* (or *landmark*). Remember it—it is critical to establishing the correct entry angle.

Remove the template and place the cutter bar in between the guide pins *(Photo 19)*. Move the assembly so the cutter tip is at the entry point of the kerf. Sight along the handle, aiming at your landmark. Move the turret and banjo as needed. Lock everything in place. To maximize the strength of the banjo and minimize deflections, place the banjo at an angle to the axis of the lathe while keeping the turret in the proper location. There is a little play in the system and the tool can be moved a bit side to side, even with everything locked down. When first starting the cut into the blank, verify that the handle is aligned with the aiming point *(Photo 20)*.

While cutting the kerf, there is a tendency for the operator to try to guide the path of the cutter, but you could end up guiding the cut off of the desired path. Simply keep one hand on the end of the handle to hold it up against the turret frame and apply a gentle force axially along the shaft, letting the tool guide itself along the proper path. If you end up off course, back up and provide a bit of correcting guidance.

Limitations

What are the limitations on the systems? The WoodCut and Oneway systems have physical pivot points (bolts): The closest the pivot centers can be to the face of the bowl blank is about ⅞" (22mm), which means the physical pivot cannot be placed inside the blank. Due to the need to

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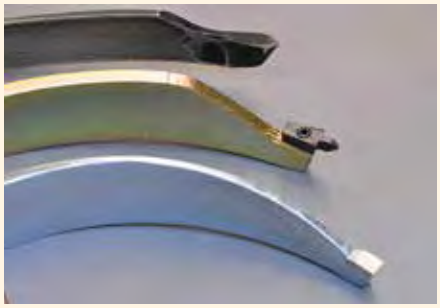
The Oneway bowl saver has separated out an inner bowl, leaving a small tenon that was holding the two bowls together. Most turners try not to cut completely through this tenon but instead stop the lathe and press on the edge of the inner bowl. If the bowl will deflect with moderate hand pressure, then bumping the perimeter with the palm of the hand can break it loose. If the bowl breaks loose but is not completely separated, remove the hanging bowl by twisting it off to reduce risk of tearouts in the blanks.

14

Before drying the bowls, the inner and outer surfaces may be touched up to make the wall thickness more uniform to minimize the risk of cracking.

Cutter shapes

Each company uses a slightly different shape for their cutter tips, ranging from a straight edge, a pointed edge, and then to a stepped cutting edge. For all three systems, the cutting tip is located vertically at the center of the bar, helping to maximize clearance within the kerf. The actual wood removal is like other scrapers, in that the cutting edge must be located at or near the center of rotation. If the cutting tip is too high, then as the center is approached it may stop cutting. If the tip is too low, it may induce excessive vibration and/or create a catch.



Each of the three systems utilizes different tip geometry. McNaughton (top) uses a pointed cutter. Oneway (center) has a removable cutter with a small specially shaped center section that broadens out to its full width. The Woodcut uses a square-tipped cutter that is slightly hollow ground on the top.

Definitions

Aiming point, landmark: When looking down the tool handle away from the headstock, the handle will point at some object in the room, which will be the aiming point or landmark. In one technique, the aiming point is utilized to help set the entry angle of the cutting bar when used with a McNaughton system.

Arc length: The distance that is measured along the curvature of the bar from the tip of the cutter to the point on the bar where it can no longer be inserted into the kerf. The bar's support and guidance structure are some of the limits that determine the maximum depth and diameter of the cored-out bowls.

Axis of rotation: The virtual line constructed from the center of the spindle at the headstock to the center of a live center in the tailstock. This is the axis about which a bowl is rotated while being shaped.

Guide point: An identified point on the bowl blank that helps visualize the path of the desired kerf.

Kerf: The cut into the wood made by a cutter bar. It separates a blank into two pieces, the inner and the outer blanks.

Pivot point: The center of circular path that the cutter bar moves around during coring.

Physical pivot point: The pivot point is physically there, usually a bolt that can be touched and seen and which performs the function of an axle.

Virtual pivot point: The knowable (but unseen or not accessible) point around which the McNaughton cutter rotates during coring.

mount the pivots to bases, the positioning is confined, about 1¾" to 1⅞" (44 to 48mm) behind the axis of rotation. The WoodCut system can move to about 2" (50mm) in front of the axis of rotation and the Oneway about 1⅜" (35mm). If the same-radius cutters were used in the two systems, then similarly shaped cuts would be accomplished. But each has different-size cutter and cutting heads and other factors that will make differences in the processes and results.

In contrast, the McNaughton system has more flexibility in what can be accomplished. When setting the angle of entry at the beginning of the kerf, there are no limitations on the angle used because there are no restrictions on the location of the virtual pivot point—it can be anywhere, even inside the blank. The primary limitation is the length of the cutter bar *(Figure 1)*.

The shapes of the cored blanks for all three systems range from hemispherical when the pivot point is in line with the axis of rotation, to a flatter, squashed shape with the pivot in front of the axis, and to a more conical shape with the pivot behind the axis of rotation. The McNaughton system, with no limitations on the position of the virtual pivot, can go to more extremes of these shapes.

Each of these systems can produce good cored-out bowl blanks. When deciding which system to use, consider:

- How often will the bowl-saver system be utilized?
- How much flexibility is needed in the size and shape of the cored-out blanks?
- Which bowl coring systems will fit on your lathe?
- Is coring speed of concern? Faster coring needs a larger motor on the lathe.
- Which bowl-saver system is compatible with your budget?
- Will the increased number of bowl blanks offset the cost of the bowl-saver system? ▸

15

For the McNaughton's virtual pivot point, create additional layout lines. Draw vertical lines tangent to the kerf extending upward to the edge of the bowl.

16

The bowl blank is marked up on the face showing the rims of the bowls to be cored out, the top shows the locations of the bowl bottoms and the positions of the kerfs have been extended up to the upper edge of the blank. With experience, most turners can generate these layout guides by eye without using a lot of precise measurements.

17

During the selection process, McNaughton cutter E is placed on top of blank to verify length and curvature. Other cutters were rejected due to their length or lack of enough curvature to yield the desired bowl profiles.

Use two binder clips (yellow) to help align the circular template with the cutter bar. Place the tip of the cutter against the blank so it is aligned with the kerf position. Pivot the cutter until the template passes through the previously marked position of the kerf (the X between the two bowls). When the cutter is in position, sight along the length of the handle to identify an *aiming point*, the reference that is used in the next step to set the entry angle of the cutter.

Insert the cutter bar into the turret with the tip against the bowl blank at the location of the kerf. (Due to camera angle, the position of the tip is misleading.) The vertical narrow part of cutter bar must be outside of the gate toward the bowl. Move the banjo and turret so that the handle is pointing to the aiming point. Lock down the banjo and all other adjustments. For strength and rigidity, place the banjo at an angle to the bed ways of the lathe.

Keeping the handle aimed at your reference point, begin cutting the kerf. Do not try to guide the cutter but let it guide itself. Only apply pressure in line with the handle. If later you determine that the cutter is going too deep or too shallow, then you may want to apply a slight sideways correcting force.

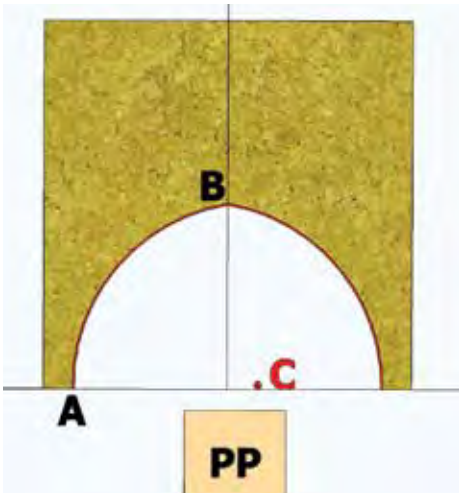


Figure 1. Virtual pivot-point capability
A 10" diameter by 6" deep blank is to be removed using a cutter bar with 6" radius. Points A and B mark the two ends of the kerf. The virtual pivot point is at C which is ⅛" inside the surface of the blank. A system using a physical pivot point would be limited to the area marked PP and cannot make this cut.

- How much time is available to learn how to use and to practice coring?

Perhaps you will have additional considerations, so if possible, find someone who has a coring system and try it out. Above all, be careful and have fun.

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- WoodCut BowlSaver video, philirons.co.uk/
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For a comparison of the measurements and features of the different bowl-saver systems, download a table at woodturner.org/products/aw/ ■

Nested set of bowls from spalted maple made by Allen Jensen.

humpty dumpty

Joshua Friend

One day while splitting wood, I came across a hollowed-out oak log. Ants had excavated the inside, yet there was solid wood around the perimeter. I decided to turn a vessel, hollowed on the inside by ants and turned on the outside by me.

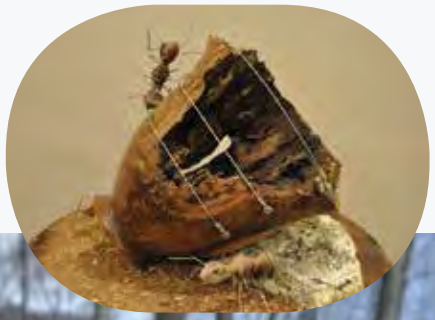
To mount the log onto the lathe, I cut a plywood disc to match the log's perimeter and screwed it onto the solid wood that remained. I screwed a faceplate onto the plywood disc and mounted the assembly onto the lathe.

At the tailstock end, I turned a tenon and began shaping the outside of the vessel. I turned the log around to hold the tenon in a four-jaw chuck and continued to shape the outside. Large loose chunks of decayed wood flew from the lathe—slow speed and a faceshield was a must! And, I stopped the lathe frequently to check that enough solid wood remained to ensure stability.

Humpty Dumpty took on a life of its own and one thing led to another. I added ants and glued wood shavings to the scene to simulate the ants' excavation. I made several ants by turning each body on three axes, and then added steel wire for the legs.

As I was working on this piece, the concept of impermanence was on my mind, as was the nursery rhyme "Humpty Dumpty," a simple yet profound reminder of our fragile existence. I can appreciate what I have in this moment. ■

—Joshua Friend



Humpty Dumpty, 2012, oak, pine, walnut, steel wire, stone, 14½" × 20" × 20" (37cm × 51cm × 51cm)

I screwed a plywood disc to the solid wood and screwed the disc to a faceplate.

I formed a tenon to mount into a four-jaw chuck.

The initial forming of the vessel began to reveal its ant-hollowed interior.

A new meaning for the term "hollow vessel."

The ant bodies were my first attempt at multiaxis turning.

These ants are deceased.

PAIR OF [TABLES] WITH Split-Turned Tops

Neil Scobie

One turned disk splits to make two tops, for a handsome pair of tables that can be any height you like. They are shown here at sofa height, about 20".

The table features a turned top with turned leg tenons that go right through the top.

This pair of small tables features 22" (56cm) semicircular tops sawn from a turned disc, with turned tenons on the bandsawn legs. Each top has a back upright that is doweled and glued to its sawn edge; the leg tenons come through the top and are wedged. I make pairs of these tables at entrance-table height (about 30" [75cm]) and at end-table height (about 20" [50cm]). The building process is the same for both heights. I made the original design in 2006 with the help of furniture maker Jo Stone while we participated in the International Turning Exchange program in Philadelphia. I think you will find this project interesting and rewarding to build, and your new tables will be useful around the home.

Tabletops

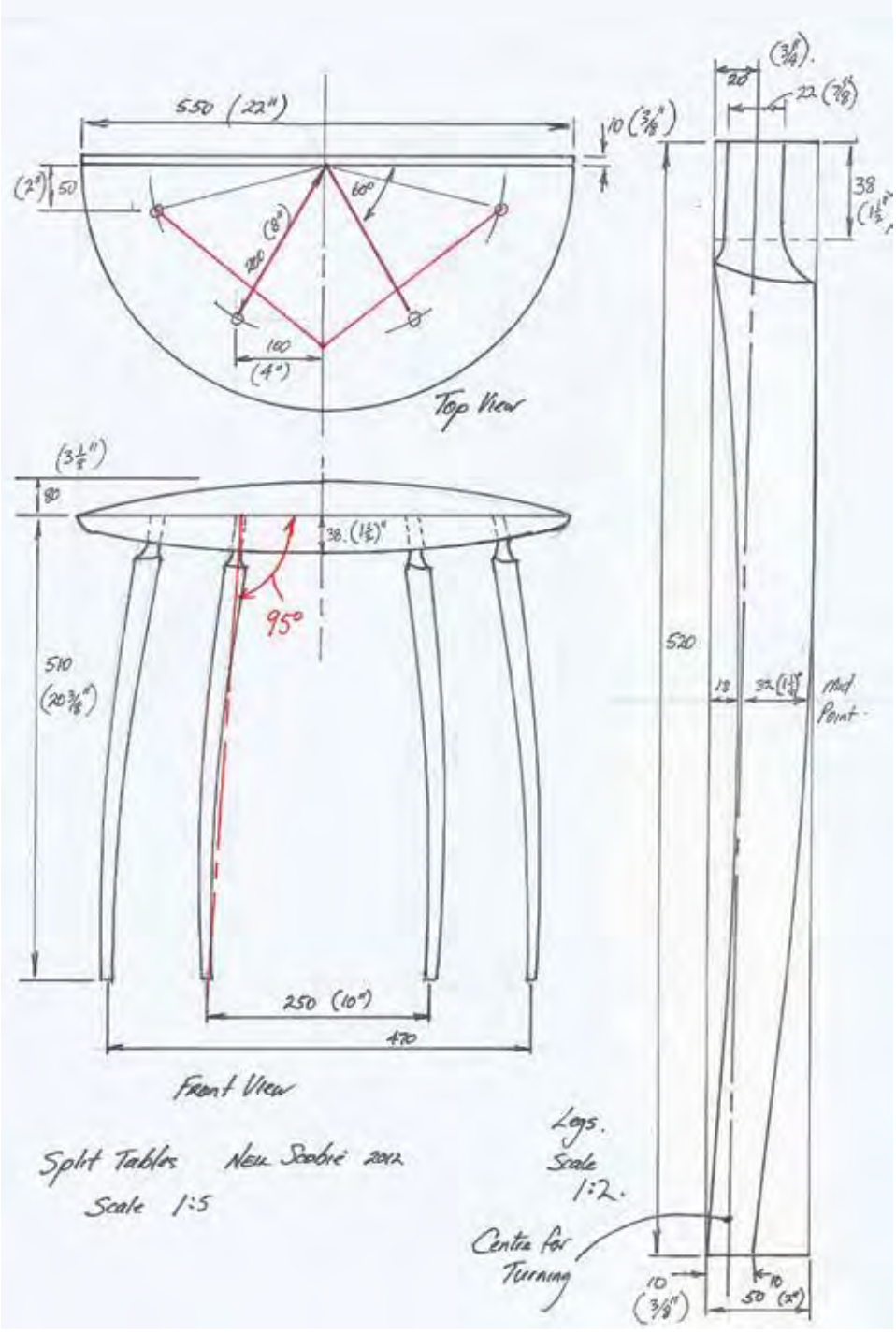
The timber selection is up to you, although you want stable and well-seasoned wood that will not warp or move around after the tables have been made. Mahogany, maple, cherry, or walnut would be good choices. In the photo sequence, I'm using rose mahogany (or Australian rosewood as it is sometimes called), which is a close-grained wood with a rich red color. The flitch measured 11" (275mm) wide by 1½" (40mm) thick and about 6' 8" (2m) long, and it had been seasoned for about thirty years so it was suitably dry. If you do not have wide planks, you can edge-glue narrow boards together; however, try to avoid having a glue line where the legs come through. When the glue has cured, smooth the blank as needed, then mark out the 22" (56cm) circle and bandsaw the disk to prepare it for turning.

Legs

When it comes time to turn the tenons on the tops of the legs, you can avoid a lot of measuring if you place a piece of masking tape on the toolrest to indicate where you want to start the rounding. Drill a ⅞"- (22mm-) diameter hole all the way through a waste block and use it to gauge each tenon for a firm go-no-go fit. Once all the legs have been turned, place them back on the lathe

one at a time to sand the section that will be visible on the underside of the table. Sand all of the visible surfaces to 320 grit.

The drawing shows the location of the holes to be drilled to accept the leg tenons, but since the legs splay 5°, you will need to lay out alignment lines to aid in the drilling. On the underside of the tops, as shown in red on the top view, draw lines from the rear hole centers to a point 8" (20cm) from the back, along the centerline. Now draw ▸



Tabletops

1

Top glue-up: Machine the wood to uniform thickness so you can glue and clamp your boards together to make up the width. To keep the joint flat, set two sash clamps on the underside with a third clamp on top. Once the glue cures, flatten the blank as needed, then mark out the circle and bandsaw it round.

2

Mount the top: Use ⅝" (15mm) plywood or MDF to make a 20"- (50cm-) diameter support disc and screw it onto the top side of the tabletop. Locate the screws where the leg holes will be drilled. Attach the metal faceplate with screws that will not go through to the tabletop.

3

Turn the disc: Use a small deep-fluted gouge to turn the bottom of the tabletop. Cut with the grain, that is, from the center toward the rim. The curve should be gentle from the center with a tighter radius at the outer edge, as shown on the drawing.

4

Sand the top: Sand the underside of the tabletop down to 320 grit using a large-diameter sanding pad on an electric drill. Remove all the screws and bandsaw the two semicircular tops. Smooth the sawn edges on the jointer or with a hand plane.

Legs


5

Leg layout: Work from the drawing to make a leg template out of thin plywood or MDF. Plane the wood to a thickness of 1 3/16" (30 mm) and align the template so the grain runs along the leg centerline. Avoid cross-grain because it would weaken the legs.


6a


6b

Make the legs: Bandsaw all eight legs about 1/16" (1mm) outside the line, then use whatever tooling you have to trim and smooth the wood back to the line. I'm using a shopmade belt sander for the inside curve *(left)*, and a disc sander for the outside.


7

Spokeshave: The curve is gentle enough to work both sides with a flat-bottom spokeshave, and it doesn't take very long—provided you did not leave too much waste when bandsawing.


8a


8b

Tapered legs: Use the jointer *(left)*, or a hand plane *(right)* to taper the thickness of the legs from full dimension at the tenon shoulder down to ¾" (19mm) at the foot. For safety, use a push stick.


9a


9b

Round over: Use the router table with a roundover bit *(left)*, or a spokeshave *(right)*, to round over all four long edges of each leg to a radius of about ½" (12mm).

Through tenons


10

Turning tenons: Mark and punch the turning centers from the drawing. Place the bottom of the leg on the spur drive and the top end on the tailstock center. Rotate the leg by hand to be sure it clears the toolrest, and cut the tenons using a ½" (12mm) spindle gouge.


11

Drilling: Tilt the drill press table 95° to the quill, and use the layout lines shown in red on the drawing to align the top so the holes and legs splay outward. Clamp the top to a clean waste board so you can drill tidy 7/8" (22mm) holes.


12

Leg assembly: Check the fit of the legs and use masking tape to indicate which goes where, then mark and saw the slots for the wedges. Glue in the legs, verify their alignment, then glue the wedges and hammer them home.

lines from the centerline at the back to the center of the front holes. For each hole, orient the line with the tilt of the drill-press table. Note that the leg tenons will be wedged into the tabletop. In *Step 12*, be sure to lay out and cut the slots for the wedges perpendicular to the grain of the top, so driving them home does not split the wood. Making the wedges could be as simple as bandsawing a long wedge then disc sanding each to size. You could use the same wood as the top or a contrasting wood.

Back upright

The back upright is a ⅜"- (10mm-) thick board shaped to follow the curved underside of the tabletop. Drill the dowel holes and dry-fit the upright so you can trace around the bottom and ends. Lay out its top edge by bending a thin piece of wood to a suitable curve. Bandsaw off the waste and disc-sand back to the line. Round over the top front edge that sits above the tabletop using a spokeshave or router.

Finishing

Once the glue has dried, sand smooth the joint between the tops and the upright backboards. When you have fine-sanded the tabletops to 400 grit, you will be ready to apply your favorite surface finish. I prefer to hand-rub on four coats of nontoxic oil, sanding back between coats with 0000 steel wool. You may wish to use something more water resistant on the tops to prevent ring marks from wet glasses and coffee cups. I use countertop oil that will stand up to the rough treatment an end table may receive. ■

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Back upright

13

Dowel joint: To mark the dowel holes that will attach the back upright in place, hammer a small nail into the back edge of the tabletop and then cut its head off so that ⅛" (3mm) protrudes. Position the backboard and tap it onto the pins to transfer the marks.

14

Back upright: Drill 5⁄16" (8mm) dowel holes 5⁄16" deep in the back upright and ⅞" (22mm) deep in the back edge of the tabletop. Dry-fit the back upright to trace around the tops, draw the top curve, bandsaw the waste, and sand back to the line.

Assembly

15

Trim: Use a flush trim saw that has no set to trim the tops of the legs. Now sand the tabletops to 400 grit so that the wedged leg tenons are completely flush.

16

Final assembly: To glue the back upright in place, you will need to make a shaped caul with a top plate to hold the clamps in place at the front edge of the tabletop. Brush glue into the dowel holes and along the back of the tabletop, and clamp it to dry.

17

Level: If you are lucky, all four feet will sit level, but it is likely you will need to level them. Use small wedges to pack up the legs, measuring down from the tabletop. Once it is all level, mark around each leg and then saw or sand them back to the line.

Make Your Own Wood Bleach

Gary Guenther

I contented myself for years with the joys of emphasizing the natural colors and grain patterns of the woods I turned. But, as with many turners, I have become interested in taking the next step into surface embellishment. While attending a demonstration by Betty Scarpino, I was inspired to experiment with bleaching.

Two-part wood bleach (Klean-Strip and other brands) used to be readily available in small quantities for a reasonable price. I quickly learned that this is no longer the case. I did a little research and found that making your own wood bleach is easy and economical.

Wood bleach is not the sort of "bleach" many of us know. The kind used for lightening wood has nothing to do with chlorine. It is also not oxalic acid (which is only a stain remover). The two components of wood bleach are: (a) a weak lye solution, and (b) moderately strong hydrogen peroxide. These can be obtained, respectively, at a hardware store and at a pool-supplies store. A quick search of the Internet can easily find the MSDS for the two components.

Ingredients

Part A is 3 to 7 percent by weight NaOH (sodium hydroxide = lye). The concentration is not important. A cheap and easy source is *Rooto 100 percent Lye Drain Opener Crystals* found at your local hardware store. Do not use Drano, which has aluminum chips and other stuff in it that you don't want! The Rooto is in the form of crystals (do not get a liquid!) and is about $8 for a supply that will last a long time.

Part B is 25- to 30-percent hydrogen peroxide. The simple, cheap way to go is a readily available commercial product: *Baquacil Step-2 Oxidizer,* a modern swimming-pool chemical (27 percent peroxide). Over-the-counter hydrogen peroxide from a drug store is not strong enough. Do not be fooled by the "volume" numbers on hair bleach products—the real concentration is actually much weaker (by a factor of 3.33). I tried a 60-volume cream developer without much success; plus, it was a gooey mess.

A gallon of Baquacil is about $18. (I don't think it comes in a smaller quantity.) You can go out of your way to buy stronger (approximately 50 percent) peroxide, but don't bother; it doesn't work any better, and at that concentration, it starts to be dangerous. Store the Baquacil in its original labeled container in a secure storage area. Ensure that it is never mixed with any chemicals other than the sodium hydroxide solution.

The lye

I use approximately 8-percent lye solution. (For you chemists, note that 8% = 2 molar, because the molar mass of NaOH is 40g, and 80g/L=8g/100mL=8%.) The lye solution could be significantly stronger, but this serves no useful purpose and may require safer handling of the residue and later neutralization (which is undesirable).

Be careful with the lye. It can be dangerous. It is extremely hygroscopic (it attracts water) and exothermic when mixed into water (that means it gets hot). Do not add water to the lye crystals! (It could spit back at you.) Fill a one-half cup measuring cup (125 mL) with cold water and pour it into a one-cup-size glass container. Wearing protective goggles and nitrile or vinyl gloves, and using a plastic teaspoon measure, put *one and one-half level teaspoons* of the sodium hydroxide crystals into the water, avoiding splashing. Stir thoroughly, and at length, with the plastic teaspoon to dissolve the solids (being aware of the tendency for the crystals to clump and stick to the bottom of the container), and then rinse the spoon with water. Pour the 125 mL of lye solution carefully into a clean glass or plastic storage jar or bottle with a glass stopper or plastic cap (no metal contact—that includes the lid!). Wipe up spills immediately. Label the container: *8% sodium hydroxide solution – caustic!* Store the container away from the reach of children.

The wood

The bleach should be applied to raw wood. Because the wood-bleach solution is water-based, application to dry wood could cause some turned wood items to crack. If water will damage your turning, then don't plan to bleach it. Bear in mind that not all woods bleach successfully. Species with a lot of natural tannins work best. I have used my shop-made version with success on red oak and walnut. Ash, boxelder, and maple also bleach nicely. I have been told that Osage orange requires ten or more applications, but the effort is worth it, as the whitish-gray result is lovely. Experiment with samples of these and other species to learn what to expect.

Using wood bleach

You must keep the lye and peroxide solutions separate until use, just like two-part epoxy. I make up a bottle of 8-percent NaOH in advance; it has an indefinite shelf life. With that and the Baquacil, I have two liquids ready to go when I need them.

For use, the two parts (both of which are just like water) can be mixed together in equal volumes and applied, as one, with a sacrificial synthetic bristle brush, sponge brush, cotton swab, or paper towel. Alternatively, you could brush on the lye first and then the peroxide, but I can't think of any reason to waste time doing it that way—it is no more effective. Use a glass or plastic container. Wear nitrile or vinyl gloves, safety goggles, and old clothes. Do not get it in your eyes, or on your skin or clothing. Clean off drips and runs from your pouring vessels with a disposable paper towel. The fumes have no odor, so be aware that if you work with large quantities in an unventilated area, your lungs could be harmed. To be safe, treat these chemicals like you would any potentially hazardous liquid. Should you get either of these chemicals on your skin or in your eyes, flush with large amounts of water.

The original Klean-Strip instructions call for a post-application neutralization step with a weak acid (white vinegar). I have not found anyone who considers this step necessary.

The unused mixture will lose potency; it is fully potent (uncovered) for about twelve hours. I found my mixture, when stored open, to be less effective after twenty-four hours. I'm told that covering small leftover quantities tightly may extend effective lifetime. Mix only small amounts—not much is needed, even to bleach an entire bowl. Discard safely—dump the remainder down a drain (and get a little free drain cleaning action, but flush with clean water afterward) and make more when you need it.

Shortly after the bleach is applied, it will fizz up on the wood. Just set it aside to let it work and to dry completely between coats. Do not expect to see the color change immediately. One coat is not enough for most applications. Three coats will give about 90 to 95 percent of the possible bleaching effect. After that, the incremental gain is small.

When the wood is dry, the resulting finish will be matte and somewhat powdery. This may be a desirable final effect—or not. If there is excess powder, simply brush it off, but take care that the fine powder is swept into a safe place. As long as it's not neutralized, it's still caustic, and if the powder gets into your eyes, it could burn. (Flush with cool water if it does get into your eyes.)

Finishes

If the piece isn't going to be handled a lot, you may choose to leave the wood unfinished, but it could easily get fingerprints or dirty. It could be very lightly sanded or just burnished with a paper towel. Applying a finish over the bleached wood will give it a different, darker appearance you may not like, so experiment on a scrap first. A few light coats of a Krylon fixative is, perhaps, the best compromise between appearance and touchability. Alternately, you might try a light coat of clear or white wax.

Oils or oil-based varnishes will darken and yellow bleached wood. This is not generally desirable, but these finishes, when used on darker woods such as walnut, will darken both bleached and unbleached wood, leaving a contrast between light and dark wood. I have not tried water-based poly, but I suspect it might work reasonably well.

Take seriously the precautions outlined in this article to ensure your safety when working with any two-part bleach, either one you mix yourself or a commercial brand. Before applying wood bleach to a turned object, test the results on a scrap of similar wood to ensure desirable performance. Bleaching wood, either totally or differentially, can yield striking results. The information provided in this article will give you a cost-effective capability to play with it. With a bit of experimenting, I think you will be pleased with your results. ■

Gary Guenther is a retired physicist who also enjoys chemistry. A hobbyist turner for ten years, Gary is program chair for Montgomery County Woodturners in Maryland and frequents the WoodCentral online forum.

Dick Veitch, past president of the South Auckland Woodturners Guild, has written a similar article in the Guild's newsletter, and Gary has included some of Dick's thoughts. See also "Decorative Bleaching" by Betty Scarpino, AW, vol 11, no.2.

I modeled this bleached red oak, side-grained-turned egg after one I saw made by Betty Scarpino.

{BASKET BOWLS}

Vessels Adorned With Traditional Basket Splits

Les Casteel

Streets of Morocco, 24" × 16" (61cm × 41cm), has full vertical splits, which accentuate its height.

I have been a woodturner for much of my life. Handles, baseball bats, rolling pins, nostepinnes, and chair legs were the projects spinning on my lathe. A few years ago I learned to turn bowls and other wooden vessels. I soon realized the depth of a vessel was limited and the inevitable drying and seasonal moisture created problems.

By using the techniques of segmented woodturning, I discovered depth and drying were not major issues, so I learned to cut and glue segments, flatten rings, and turn bowls and vessels from the bottom up. Everything, it seemed, relied on the wood to make an artistic statement, especially the feature ring on segmented vessels.

During one average day at the lathe, as I was applying an oil finish on a white oak segmented vessel, a stream of early morning sunshine shot across the lathe. I rested the bowl on the toolrest and thought how much this vessel, with its oak segments, looked like a white oak basket. From this simple observation, an idea developed: Why not incorporate basket splits—thin strips of wood—into, onto, or woven around the turning as embellishment? With that, the basket-bowl idea was born.

Gathering ideas

As I became more convinced the basket bowl was a good idea, I searched for inspiration. I've lived most of my life in and around areas with long traditions of basketmaking and have watched craftsmen in Arkansas and in Missouri cut basket *splits* or *splints*. The word *split* is more traditional because these strips of wood were literally split by using sharp froes and knives. Later, they were cut from green, white oak boards using a special type of handmade spokeshave. With great skill, basketmakers weave these splits into traditional white oak baskets made famous in the Ozarks.

First, I looked at the creations of local traditional Ozark white oak

Squash Pot, 16" × 16" (41cm × 41cm), has splits that are shorter than the entire length of the vessel.

basketmakers, such as those woven by the Owens and Gibson families. These high-quality baskets tend to be white oak, and usually come in simple shapes: square, oval, or round. Each one becomes unique, however, when some little detail is added, such as a bit of color or an extra split woven into the handle.

I exhibit turnings and furniture each year at Silver Dollar City's National Harvest Festival near Branson, Missouri. The festival provides the opportunity for me to visit with and closely observe the work of several basket artists, many of whom continue to weave the quintessential basic basket.

Today's baskets

Contemporary enhancement of the basic basket includes colorful dyed splits or extra weaving, in addition to adding other materials such as leather, metal, bone, or deer antlers. Baskets are not limited to white oak construction—among other materials they can be made from pine needles, which can be woven into virtually any kind of object from vessel to sculpture. Pine-needle weaving often utilizes brightly colored patterns similar to those seen in the feature rings of segmented vessels.

I also studied the unique baskets of Leon Niehues, who has crossed the line of functionality into pure form. His baskets use a basic internal shape with skillfully and gracefully woven outside enhancements using thin basket split materials.

Studying traditional and contemporary baskets helped me focus on where I wanted to go with the basket bowl. My basic method is to turn a wooden vessel, then continue with adding basket splits. The goal is to create a harmonious combination of vessel and technique, culminating in a balance of form and function.

Balancing form and function

I have been lucky to have known and learned from two genius woodworkers: Sam Maloof and David Ellsworth. ▸

A convex (outward) curve often needs attachments at both ends of the shape. The split will fit closely to the vessel.

A concave (inward) curve will need an attachment at one end of the split. If you want the split to fit closely to the vessel, make an attachment point near the deepest part of the inward curve.

Decide on the width of your split, then plane the board to that thickness. Use a defect-free piece of wood to avoid problems when bending.

Set up the bandsaw with a sharp blade and a fence. The goal is consistent splits between 1/32" and 1/16" (.8mm and 1.6mm) thick.

A split inserted into a pocket is held securely and the ends are hidden for a neat, clean installation.

To cut the pocket, insert the parting tool into the vessel at the same angle you worked out on your model. Work slowly and measure the depth often.

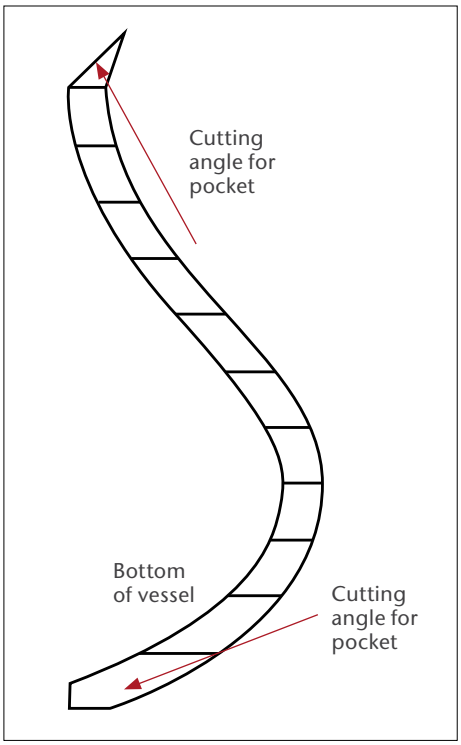


Figure 1. Model for Cutting Pockets
Sketch out your model by taking measurements of the walls, and then plan your angle and location for the pockets.

From Sam Maloof, I learned to build rocking chairs. He taught the importance of balancing form and function in furniture. Form is the shape—the artistic, pleasing value of a piece. Function is its utility.

David Ellsworth stressed the importance of turning a pleasing shape. After observing the shape, we see other aspects, including color, grain patterns, texture, and piercings. So, both shape and ornamentation of a woodturning can define its form.

When I design a basket bowl, I first consider its basic shape, asking a series of questions: Will the shape I have in mind support this type of enhancement? After splits are applied, what shape will show through? What part of the shape will be covered? Will the unadorned part distract from the addition of splits? Should the vessel be tall or short? I will search through my library of woodturning books and pictures and sometimes surf the Internet to look at pictures of ceramic vessels.

Design considerations

With a basic shape in mind, I decide the orientation of the splits: vertical *(Streets of Morocco)*, horizontal, or both? Will verticals run the length of the vessel or only part of the way *(Squash Pot)*? How many splits will there be—eight vertical splits and five horizontal or twice that many?

The design considerations are limitless: Will the splits be woven into each other? Will they be straight or will they curve or perhaps, spiral up the vessel? What type of wood should be used and will it be stained or dyed?

Vertical splits tend to elongate the vessel's look whereas horizontal splits tend to fatten the vessel. Will splits cross over each other or never touch? Will the ends of the split show or will they be hidden? If the ends are to be hidden, I will need to consider turning pockets or slots in the vessel—more on pockets later.

Let's take a look at white oak baskets: They are often square with 90-degree corners. From my experience, the corner is the most difficult part to weave and is the first part of the basket to fail. You probably will not have 90-degree corners on a woodturning, but the lesson is to avoid tight turns and curves in a basket-bowl design.

I have also found it is easier to wrap and form a basket split around a convex (bulges out) curve than a concave (bulges inward) curve. A convex curve often needs attachments at both ends of the shape *(Photo 1)*. A concave curve will need an attachment at one end, and sometimes an attachment near the deepest part of the inward curve *(Photo 2)*. The idea is to think about how you will attach the splits. Make sketches or have three-dimensional examples to help answer these questions.

After you have come up with a design for the splits, ask yourself: *Does this design mean I might have to change the form of the vessel?*

Vessel construction and color

With the vessel's shape and a basic design for splits decided, I consider vessel construction: Should I use segments, a hollowed solid, or a combination? How thick do the walls need to be to facilitate attachment of splits?

Color considerations are numerous. The vessel could be any natural wood color and with the use of paints or dyes, virtually any color. The shade could be as light as bleached maple or as dark as India ink. Using segmentation introduces additional patterns and geometric shapes. The time to decide on combinations is before construction. Make drawings.

Obtaining basket splits

Splits can be cut or purchased from outside sources. If splits are purchased, choices will be limited to what

When installing a collar, simply overlap the split about an inch, making a band. Apply wood glue to the first ¾" (19mm) and clamp it with a small clamp.

Collars add a neat appearance to the splits. Leave the collars loose so they can expand and contract with the vessel.

mainstream basketmakers are using, mainly white oak, black locust, or some type of flat river reed. If you make splits yourself, the choices are almost unlimited. Almost any good grade of hardwood can be used. I have successfully used oak, maple, walnut, cherry, and a few exotics. Use straight-grained wood—wild grain often splits when bending. Traditional basketmakers used pocketknives, hand planes, or modified spokeshaves to cut splits and always cut splits from green wood for the same reason woodturners like to turn green wood—it is faster and easier than using dried wood.

I cut my splits with a bandsaw from dry planed boards. I use clear, straight-grained boards that are free of defects. I plane the board to a thickness equal to the width of the split I want—for splits ½" (13mm) wide, I will plane the board to ½" thick. The length of the board should be about 1" longer than the length of the split you will need *(Photo 3)*.

I set up my bandsaw with a sharp ½" blade and a fence *(Photo 4)* so that I can saw off splits that are between 1/32" (.8mm) and 1/16" (1.6mm) thick. I test the strip by installing and holding it onto the vessel. If it splits or breaks, then go thinner or narrower. If it bends easily, you can go a bit thicker.

After you have cut the split, it can be sanded lightly. Sanding is easiest by simply folding over a piece of sandpaper and pulling the split between it several times while applying pressure with your fingers. I often leave some bandsaw marks because they give the split a nice texture, which I like. You could also embellish the splits with carving, piercing, burning, or coloring.

Once the splits are cut, trim to the required lengths—a pair of heavy scissors works well. If the ends of the splits will show, shape them into a pleasing contour. After trimming the splits to length, dye, stain, or finish them before the application. I suggest you cut a few extra in case one fails during installation.

Pockets—attaching splits to the vessel

There are a number of ways to attach the splits to the vessel. I have used screws, thread, collars, glue, and string. I have experimented with metal rivets, rope, wire, dowels, and leather. Attachment methods are endless, limited only by imagination. I will focus on a few techniques: first, cutting pockets or slots to hold and hide the ends of the splits, then screws and thread.

Before you remove the vessel from the lathe, think about the design. If vertical splits are planned, and the ends ▸

Walnut Blood Brother, 2012, Walnut, maple, 15" × 16" (38cm × 41cm)

My concept was to have two vessels where maple and walnut exchanged roles.

Maple Blood Brother, 2012, Maple, walnut, 15" × 16" (38cm × 41cm)

are to be hidden, cut pockets before the vessel leaves the lathe. A pocket is a slot cut with a thin parting tool. Inserting a split into the pocket means the split is held securely and the ends are hidden for a neat, clean installation *(Photo 5)*.

I use a thin (1/16") parting tool that resembles a heavy butcher knife. To cut the pocket, first decide where to attach the split. At that point, the thickness of the vessel walls and the angle of the cut determine the depth of the cut. I measure the thickness of the walls, and then draw a model on paper. (A variety of software can also create a model.) A model can be as simple as two parallel lines, with the distance between the lines equal to the thickness of the vessel wall. I lay the parting tool on the model and tilt the parting tool to the approximate angle at which I wish to cut the pocket, allowing me to see if the pocket can be cut at the location and angle I want. I aim for a pocket depth of at least 3/16" (5mm) *(Figure 1)*.

If the pocket is near the bottom or top, as it often is, you will need to know the thickness of the bottom or top. The technique is the same except add a line representing the thickness of the bottom or top to your model. Often the bottom is a bit thicker near the edge of the vessel so I can cut a bit deeper for the pocket.

I want my segmented vessels to feel heavy, like pottery, so I turn the walls between ¼" (6mm) and ½" (13mm) thick. The bottoms are usually about ⅞" (22mm) thick, allowing for a deep pocket. To cut the pocket, insert the parting tool into the vessel at the same angle worked out on the model *(Photo 6)*. Work slowly and clean out shavings often. *Be careful not to cut through the vessel's wall.*

Once the pocket is established, insert a tiny screw through the split and into the wall of the vessel. Brass, steel, black anodized, or copper screws with various head configurations can be found online in sizes #1 through #4 and in lengths as short as ⅛" (3mm). Drill the holes through the split into the wall of the vessel. I use an old-fashioned hand-crank drill and drill slowly and carefully to avoid going through the vessel wall. Once the hole is drilled, it is just a matter of turning in the screw.

Other methods

Another way of attachment is drilling two holes through the split and into the wall of the vessel. You can use silk thread, fishing line, or thin wire to secure the split near the pocket or anywhere else along the vessel. Use a large sewing or embroidery needle to pull the line through the holes. Using this technique, you can make the split bulge out or form-fit closely with the lines of the vessel.

With all of the vertical splits established, you could now weave horizontal splits in and out of the verticals. These can continue all or part way around the vessel at any location. Splits can be woven horizontally, or at angles. If the weaving gets tough or your splits are a bit thick, soak the splits in warm water for an hour or so to make them more pliable—a technique many basketmakers use. Soaking, however, can raise the grain, so you might have to sand again.

If you need to attach the horizontals to the verticals where they intersect, tiny holes can be drilled through the splits at the intersection. Then use a screw, thread, string, rivet, or wire to hold them together. If you wish to use only horizontal splits, they can be overlapped slightly and attached in a variety of ways. Play with the splits and you will discover all sorts of ideas and methods.

If you want to hide the screws holding the ends of the verticals, make a collar. Wrap a split around the vessel along the line of the screws. Overlap the split about 1", creating a band, and then apply wood glue to the first ¾" (19mm) and clamp it with a small clamp, rubber band, paper clip or blue painter's tape *(Photo 7)*. When dry, the collar rests over the screw heads and adds a bit of depth to the splits. I leave the collars loose so they can withstand any expansion/contraction of the vessel *(Photo 8)*.

Finishing

The process I follow is to create a segmented vessel and cut any pockets for the verticals according to my split design. I then apply and let it cure. After curing, I make and cut the splits to length and install them. I usually paint Waterlox onto the splits on the outside only. The coated splits are a bit dull and contrast with the finish of the vessel.

These techniques can also be applied to green-turned hollow vessels, but the wood must be dry and finished before applying the splits and finishing.

Once during a show and tell at the Northeastern Oklahoma Woodturners Association in Tulsa, the accomplished woodturner Ron Fleming said something that has stuck with me. As he held up a particularly nice piece he had turned, he grinned and said, "Oh, I was just playing around and I came up with this." My advice is to play around with these techniques and I am sure you will create something to be proud of! ■

Les Casteel is a full-time rocking chair builder and woodturner from Harrison, Arkansas. He has been woodturning since he was a youngster and has shown and sold work nationally. He is a member of the Woodturners of Southwest Missouri. Les can be contacted at les@woodthatrocks.com or woodthatrocks.com or facebook.com/woodthatrocks.

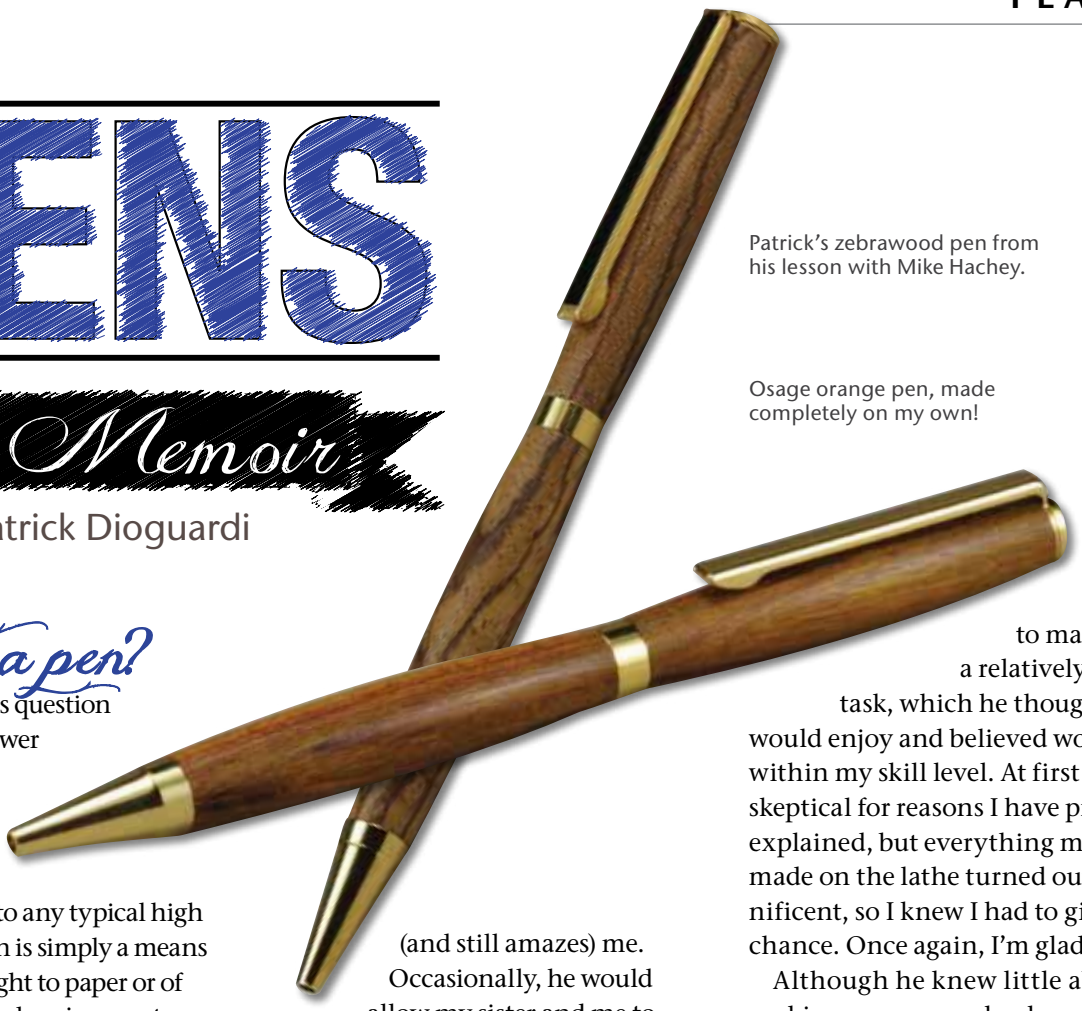
Sources

Many examples of ornamented baskets on the Internet will help inspire and inform. Search for images of *black ash baskets, white oak baskets, pine needle baskets,* or *pine needle weaving*. To find sources for basket splits, search for *basket splits* or *basket supplies and suppliers*. For inspiration and to study high-quality basketmaking, visit owensoakbaskets.com, gibsonbaskets.com, loeberlook.com, leonniehues.com, basketmakers.org.

PENS

A Memoir

Patrick Dioguardi



Patrick's zebrawood pen from his lesson with Mike Hachey.

Osage orange pen, made completely on my own!

What is a pen?

Had I been asked this question months ago, my answer would have been substantially different than it is today. I am in high school, and to any typical high school student, a pen is simply a means of transferring thought to paper or of completing homework assignments. Although pens are important throughout every day, I had never considered them significant—why would I when I find at least ten a day strewn about the school hallways and can buy a pack of twenty-five for less than a dollar? If someone had told me then that a pen could be a work of art, I might have laughed at the notion: *How could something so simple, so commonly overlooked be so wondrous?* It just so happens that I was recently enlightened as to how a pen truly can be a work of art. And this is how it happened...

Grandpa's hobby

For as long as I can remember, I was aware of my grandpa's uncommon hobby of woodturning. When I was younger, he would often show me examples of his bowls, tops, and ornaments and I remember being astonished by the elegance of his work. The uniqueness of every specimen's wood variety and grain patterns amazed (and still amazes) me. Occasionally, he would allow my sister and me to watch him turning a top, which we would then decorate. He would tell us that we, too, could one day make beautiful creations on the lathe. I recall quite clearly thinking, *I will never be able to make anything that incredible on my own.*

In recent years, I had been feeling more pressure from my grandpa to take up the woodturning hobby as well, because he thought I was ready to learn the skill. Regrettably, I shrugged off his kind offers with a, "yeah, maybe later." Sometime before summer, though, I finally decided to let him teach me, and I am so glad I did. Not only do I enjoy turning and making marvelous wood creations, I feel closer to my grandpa, and it's great to know I am learning from one of the best!

First pen

After several lessons on woodturning, my grandpa asked if I would like to make a pen, a relatively simple task, which he thought I would enjoy and believed would be within my skill level. At first I was skeptical for reasons I have previously explained, but everything my grandpa made on the lathe turned out magnificent, so I knew I had to give it a chance. Once again, I'm glad I did.

Although he knew little about making pens, grandpa has many friends, one of whom is Mr. Hachey, who is an experienced pen maker. Mr. Hachey generously took the time to demonstrate the correct way to make a pen. It was wonderful how he let me make a pen as he explained the steps to complete it. I had a grand time creating this pen, and the excitement I felt as I pressed the two halves of the zebrawood together was magical. I couldn't stop smiling. Had I really made this? It was simply wonderful, and I knew I wanted to make more so I could feel this over and over again.

As of today, I have made more than fourteen pens, and with each one I feel more and more confident at the lathe. My latest accomplishment was making a pen from Osage orange, completely on my own—Grandpa didn't have to save me from a catch or turn the wood down to the exact diameter when I got too nervous. ▸

I am also able to make pens faster each time as I become increasingly comfortable on the lathe. My family and friends think my pens are amazing and are pleased when I give them as gifts. I have even sold some, although it makes me sad to see them go. I enjoy creating these pens so very much, and love to feel the joy of witnessing the final product, just as I did after assembling my first pen. I hope to be able to make many more pens in the future, and I hope my grandpa and I can share our love of this hobby together for years to come.

What is a pen? Well... this has become a complicated question. I have no definitive answer, for it seems a pen has the potential to be many things. Surely, for many a pen remains simply a means of transferring thoughts to paper, or finishing homework assignments, but for me it is much more. A pen is art, it is beauty, and it is a symbol representing the times I was fortunate enough to spend with my grandpa in his wood shop. Sometimes, as I write with my first zebrawood pen, I stop midsentence, lost in the intricate patterns of the polished wood, just thinking... ■

Pen and pencil set from stabilized boxelder burl

Patrick Dioguardi is a junior in high school, and is currently taking wood technology classes. He started woodturning in March 2012 and is a member of the Finger Lakes Woodturners.

(Far left) Mike Hachey gave Patrick his first pen-making lesson.

(Left) Patrick turning pen blank.

(Above) Patrick with his Grandpa Ralph.

(Left) Patrick Dioguardi examines his work.

(Right) Measuring the diameter of the pen blank.

Gordon Pembridge

Capturing Human/Nature

D Wood

Back Country Stream in progress on the carving table. Pembridge uses all sorts of props, including beanbags.

Comparing the interpretations of nature by artist Gordon Pembridge with the reality that inspired them can be an astonishing experience.

As a devoted angler, Pembridge accompanies friends on quests to remote New Zealand regions. While the excuse for adventure might be the elusive brown and rainbow trout, the capture of images, colors, and sensations is a certainty. The Whanganui River, an important navigation route that ferried supplies and tourists via steamboat in the early twentieth century, is the inspirational source for Pembridge's *Back Country Stream*. The river, now largely a tourist attraction, still beckons outdoorsmen and women who value the isolated eddies with their hidden prey of all varieties. For Pembridge, the prey, in addition to the-one-that-got-away, is motifs that make his turnings authentically natural.

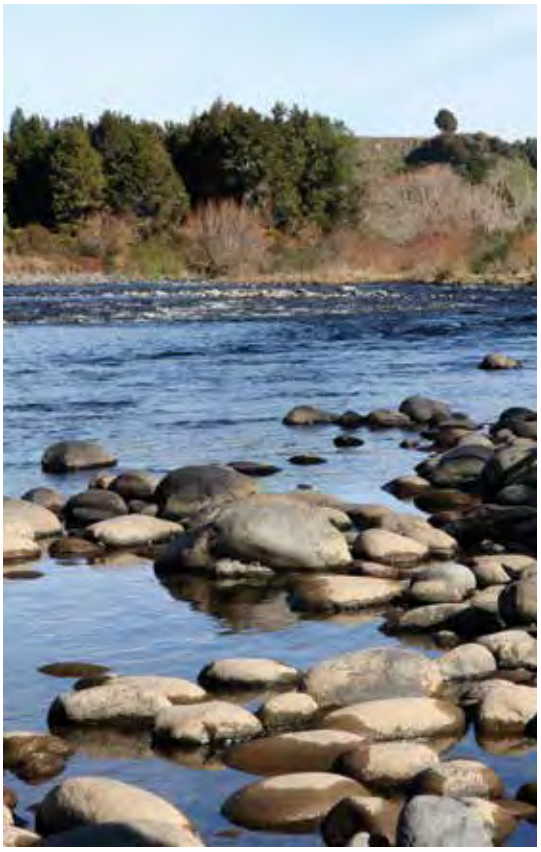
Back Country Stream began with thinly turned macrocarpa, a timber whose strength consigns its use to a building's framing components. Pembridge turns storm-felled green wood to a thickness of one millimeter (less than 1/16") that air dries quickly. As in the construction industry, the macrocarpa is the structure that permits Pembridge's creation of a montage of details from native bush and waters. Prominently displayed is New Zealand's national symbol, the silver fern: Its realization is by elimination of timber, resulting in negative space around each pinna or leaflet. The pinnas are then carved, adding unexpected texture to the fronds. Surrounding the tops of the fern blades are small ovular holes that an observer might assume are simply a decorative feature to maintain the consistency of the pierced design. However, Pembridge's photograph of a shallow portion of a Whanganui tributary shows the effect of sunlight on gently undulating water, creating the exact pattern that is painstakingly replicated. Lower on the bowl's surface are the water's ripples, rendered in a form and airbrushed lacquer color that hint at phosphorescence.

Identifying the elements of *Back Country Stream* contributes to appreciation of the whole, but the whole is what makes this piece a three-dimensional natural wonder. A view into and through the bowl, with the juxtaposition of ferns with water and stones, is like glimpsing the Whanganui from the dense landscape through which it courses. Darker tones, reminiscent of the forest floor, define the carved base of the bowl, while sunlight floods the upper rim and filters into the lower reaches. Attention has been paid to the myriad ways of viewing *Back Country Stream*, a testament to the vision of an artist. As Pembridge says, "It's not about woodturning. It's more about the artwork. The wood's just a canvas."

Koru ferns unfurling fascinate Pembridge.

New Zealand ferns are common along back country streams, so he includes them in his designs. They are an icon for New Zealand.

The iridescent colors of the New Zealand wood pigeon *(Hemiphaga novaeseelandiae)* provide inspiration for Pembridge's work.



The water ripples and boulders of the Whakapapa River, North Island of New Zealand, also inspired *Back Country Stream*.

Influence of Kenya

An affinity for the natural environment originates from Pembridge's childhood in Kenya where his father managed a tea plantation in the eastern highlands. He played with local *totos* (children) and remembers the lush vista of Lake Victoria from the Nandi Escarpment. "Walking in bush with wild animals in Africa left an incredible impression on me," he recalls and, when commissioned to do so, will undertake a sculpture or painting that captures what he now considers a bygone era. Whereas the Kenya he experienced was a landscape with few inhabitants, Pembridge now describes it as, "a sea of humans with pockets of Africa." It is not surprising that his intrinsic appreciation of nature, obtained through personal direct experience, is now manifest in work that pays homage to distant, unpopulated areas of New Zealand. Pembridge is not a politically involved environmental activist, but expresses his concerns covertly by investing care and passion in the flora and fauna he portrays.

The Deep Blue, 2008, Macrocarpa, acrylic paint, 4½" × 7½" (115mm × 190mm)

Back Country Stream, 2012, Macrocarpa, acrylic paint, 6" × 8" (150mm × 200mm)

Education

Pembridge's family emigrated in 1977, and after attending boarding school in Whanganui—the city straddling the Māori-designated "big river"—Pembridge took art and design courses before embarking on a career in photography. His skills included printing, retouching, and restoration, and he subsequently established a company engaged in graphic design and art. As part of his transition to full-time wood artistry, Pembridge works two days a week for a hunting and fishing retailer. This contact with the public is an intentional counterpoint to the hours of necessary isolation for concentration and execution of his designs. He also inserts teaching into his schedule, valuing the opportunity to tutor form and color mixing and to foster enthusiasm for creative activity. He is not worried about producing clones because he encourages the benefits of individuality: "There is nothing better than achieving your own work and getting satisfaction from it. Who needs drugs or coffee?"

Several proficiencies have contributed to Pembridge's growing recognition. The first arose in his youth when he learned woodworking, making cabinets and bookcases, and completed assignments in technical drawing. His eventual desire to incorporate curved components into the furniture prompted research into lathes and enrollment for a beginners' course in turning. But it was the exposure to woodworking at an impressionable ▸

(Far left) Kiwi Koru Fern, 2012, Pohutukawa, 3⅞" (93mm) tall

(Left) The Last of the Line, 2012, Macrocarpa, acrylic paint, 5½" × 4½" (140mm × 115mm)

Pohutukawa Koru Fern, 2012, Pohutukawa, 3" × 5¼" (75mm × 133mm)

age that familiarized Pembridge with his chosen material and its properties. Secondly, gaining aptitude with drawing guided the direction of Pembridge's oeuvre. He drafts his designs on paper and transfers the patterns to the turned volume. A lathe is a captivating machine that seemingly requires little art or design training—a wood blank can be turned into a credible object with minimal training. Whereas refinement certainly comes with extensive practice, failure to employ skills like drawing, painting, and even model-making handicaps the woodturner who aspires to a unique result.

The importance of drawing is evident in the *Koru Fern* series. The koru is the unfurling coiled fern frond, known in North America as fiddlehead. It is a Māori symbol of creation and can be seen frequently in carvings and art: The koru travels internationally as the logo of Air New Zealand. Even though the koru and silver fern can be described as Kiwiana, Pembridge combines them in a unique way, spiraling the two forms diagonally around a bowl's walls. From some views, the pinnas are foreground silhouettes against iridescent korus; from others they read as three-dimensional entities. The prominent diagonal lines—especially the fine fern stem—create a vortex into which the eye is drawn. This precision would not be possible without careful calculation and transfer of a design to the wood's surface. The remarkable fact about Pembridge's vessels is that they are handcrafted in a world enamored of laser cutters that are capable of doing the same job, yet carry none of the mystique.

The third of Pembridge's skills is photography. He uses the camera just like a pencil or brush: It is one of the necessary instruments in the design process. The camera is packed along with the fishing rod and sleeping bag for the capture of images that might be replicated or stylized. One of Pembridge's new departures is more realistic imagery and color, in contrast to the graphics that have characterized his work so far, and photos are essential references for this new authenticity.

Pembridge also photographs his work, thereby maintaining control of how it is portrayed: The vessels are difficult to capture, so mastery of photography is advantageous when 2-D must substitute for 3-D. Not only are images a marketing tool, they are a record of artistic development. At intervals, he can review his

Koru Fern, 2010, Macrocarpa, acrylic paint, 4¾" × 7⅛" (120mm × 180mm)

I use pyrography for repeated patterns, here adding some detailed curls to go with the larger koru shape of the fern unfurling within the vessel.

Kiwi in a Burrow, Koru Fern, 2012, Pohutukawa 15¾" (400mm) tall

portfolio, assessing what was successful, previous styles and techniques, and personal growth. Finally, photographs are the components of keynote presentations. Pembridge was invited to speak at TurnFest in 2010 and 2012, a woodturning symposium held in Australia. His talk incorporated still images and videos that supplemented his live technical demonstration, and the existence of that presentation means it's available as an ongoing marketing resource.

Those familiar with the work of Binh Pho will see similarities in technique, yet each artist explores themes that are particular to heritage and experience. Pembridge considers Binh an inspiration as are New Zealanders Terry Scott, with whom Pembridge shares a website and gallery, and Ian Fish, an instructor and tools supplier. The dearth of New Zealand galleries showing high-quality turning has restricted the viewing of Pembridge's vessels and sculpture to regional competitions and local clubs' exhibitions; unless he is certain of how his work will be displayed and managed, it remains in the studio. Of late, Pembridge is being represented by Riley Galleries in Cleveland, Ohio, and the William Zimmer Gallery in Mendocino, California. The latter offered him a solo exhibition at SOFA Chicago in November 2012. This entry into the American market was orchestrated with the same care and attention to detail as is manifest in *Back Country Stream*.

Pembridge demonstrated at TurnFest 2012.
Photo: Andi Wolfe

When asked about his goals, Pembridge says that, coupled with the obvious desire for financial resources to support his family, he wants to continue to enjoy what he does. "I absolutely love doing it and I don't want to lose that." At the same time, he is aiming high, "I want to be one of the best in the world." Those who have met Pembridge know that he is not speaking out of arrogance but as a down-to-earth person who wants to be the best at what he does. Doing his best also includes highlighting "how beautiful the natural world is and how blind we are to seeing it." ■

Pembridge's work can be seen at timberly.co.nz.

D Wood received an MFA in furniture design from the Rhode Island School of Design. She writes about craft media for a variety of international publications and is currently a PhD candidate in design studies at the University of Otago, New Zealand. Wood wrote about New Zealand woodturners Rolly Munro and Graeme Priddle in AW *vol 25 no 1 and vol 26 no 1.*

Members' Gallery

As a kid, I remember studying pictures of WWI airplanes on the pages of the encyclopedia. I was particularly fascinated by the beauty and balance of the powerful rotary engines in the black and white photos: The cooling fins on the engine cylinders caused an outer shape, which was superimposed on an inner silhouette of the cylinder wall.

Double Vision Vase is constructed of twenty-six alternating pieces of African bubinga and blackwood. The outer silhouette has curved outer edges; the inner silhouette is constructed of all straight outer edges. It is up to the observer's eye to soften the inner shape into a delicate black vase. ■

—Jim O'Donnell, Florida

Jim O'Donnell,
Double Vision Vase,
2011, African bubinga, blackwood, 11½" × 6" (29cm × 15cm)
Photo: Margaret Lanier

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Gun Metal shown with refill advanced

24kt Gold shown with refill retracted

Black Enamel & Gun Metal shown with facing clip

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All blades are double ended and replaceable

Above: 1.5" Deep Bowl Negative Rake Scraper

Deep Bowl Scrapers

- capable of working 14" deep
- 5/8" thick hardened stainless steel substrate
- negative rake and conventional
- handles up to 46" for leverage

Above: 1.5" Deep Bowl Conventional Scraper

Conventional Scrapers

- can be used with or without a burr depending on wood hardness
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- four widths and four shapes
- easy to sharpen
- ½" to 1½" wide

Above: ½", 1", 1.5" Conventional Scrapers

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Read Online: "Negative-Rake Scraper" by Stuart Batty, *American Woodturner* Spring 2006 Vol. 21, no. 1

TRENT BOSCH

COLORADO

Intertwined, 2012, American elm, 8" × 12" (20cm × 30cm)

We create many connections throughout our life that come and go but are always part of who we are.

Trent Bosch is an Invited Demonstrator for AAW's International Symposium in Tampa, Florida, in June. See more of Bosch's work at trentbosch.com.

Comparison of the measurements and features of the different bowl savers

John Giem's article on bowl-saver systems can be found in *American Woodturner*, vol 28, no 1 (February 2013)

Woodcut Bowl Saver

Cutter	Cutter ID	Radius, in.	Arc length, in.	Cutting diameter	Cutting circumference	Bar height	Bar thickness	Deepest reach from surface	Bar, vertically flat/curved	Cutting tip width	Cutting tip detachable	Pivot point, physical/ virtual	Pivot point location limitations: Min distance from surface	Pivot point location limitations: Max distance behind center	Pivot point location limitations: Max distance in front of center
Small	Small	3.5	5.25	7	22.0	1	0.23	2.9	Flat	0.31	NO	Physical	0.5	1.8	2
Large	Large	4.5	7.5	9	28.3	1.51	0.24	4.3		0.32					

McNaughton Bowl Saver

Cutter	Cutter ID	Radius, in.	Arc length, in.	Cutting diameter	Cutting circumference	Bar height	Bar thickness	Deepest reach from surface	Bar, vertically flat/curved	Cutting tip width	Cutting tip detachable	Pivot point, physical/ virtual	Pivot point location limitations: Min distance from surface	Pivot point location limitations: Max distance behind center	Pivot point location limitations: Max distance in front of center
Mini	A	3	6.75	6	18.8	0.78	0.20	5.2	Flat	0.33	NO	Virtual	NA		
Mini	B	5	8.5	10	31.4			5.9							
Mini	C	11	9	22	69.1			8.3							
Std	D	3	7.5	6	18.8	1.08	0.24	5.9		0.40					
Std	E	5	8.5	10	31.4			6.6							
Std	F	11	8.75	22	69.1			8.9							
Jumbo	G	7	10	14	44.0	1.25		8.5		0.43					
Jumbo	H	11	13	22	69.1			11.6							

ONEWAY Bowl Saver System

Cutter	Cutter ID	Radius, in.	Arc length, in.	Cutting diameter	Cutting circumference	Bar height	Bar thickness	Deepest reach from surface	Bar, vertically flat/curved	Cutting tip width	Cutting tip detachable	Pivot point, physical/ virtual	Pivot point location limitations: Min distance from surface	Pivot point location limitations: Max distance behind center	Pivot point location limitations: Max distance in front of center
9"	1	4.5	7.25	9	28.3	1.44	0.24	4.1	Curved	0.38	YES	Physical	0.7	1.9	1.4
11.5"	2	6	8.5	12	37.7	1.45	0.24	5.4							
13"	3	7	9.75	14	44.0	1.79	0.25	6.4							
16"	4	8	11.75	16	50.3	1.71	0.24	7.8							

Radius – measured inside radius of curved cutter bar, inches.
Arc length – using tape measure, along the outside useable length of cutter, inches, a section of the circumference.
Cutting diameter – the diameter of the circle that would be formed by extending the curved cutter bar until a circle is formed.

REGISTRATION FORM • PAGE 1

☐ **YES**, I am traveling to Tampa for the 2013 AAW International Symposium June 28–30 at the Tampa Convention Center

Demonstrations end at 3:30 p.m. on Sunday, June 30

Full registration fee includes demonstrations, Instant Gallery, and tradeshow. Purchase fundraiser banquet/auction tickets separately.

Register online by June 15 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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Signature: _____

see you in TAMPA

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

For cancellation through May 15, 2013, a $75 processing fee will be deducted. After that date the registration fee is non-refundable.

see you in TAMPA

JOIN the large AAW family and be inspired to take your creations to the next level!

Share your passion for woodturning and attend the AAW international symposium June 28–30 in Tampa.

AAW SYMPOSIUM 2013 TAMPA, FL