

# SOUTHWEST ASSOCIATION OF TURNERS

27<sup>TH</sup>

ANNUAL SYMPOSIUM

## DEMONSTRATION HANDBOOK



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# WELCOME

to the

## **27<sup>TH</sup> ANNIVERSARY**

### **SouthWest Association of Turners Symposium**

This is the 27th Anniversary of Southwest Association of Turners. On behalf of the Board of Directors from each of our 28 member clubs, the Executive Committee, the Committee Chairs and all of the many volunteers who work to make this the best Woodturning Symposium in existence, I would like to thank you for your support of the SWAT Symposium for the past 27 years. We expect this will be a great learning experience to all attending.

There are 52 vendors who offer tools and accessories, lathes and lathe accessories, woods of all species, finishing, dyeing and enhancement items, sanding materials, new tools and turning items, stabilizing equipment, etc. Once you have purchased that new tool, there will be a Sharpening Booth where you can put the edge on the tool that you desire and then you can go to the Hands On or Pen Turning Booth and try out the new tool(s).

We will have the famous and ever popular Two-for-One drawing where there are opportunities to win beautiful art pieces and tools, 1 large lathe (Vicmarc VL300) and 3 Jet 1221 midi lathes. The Two-for-One drawing tickets will first be drawn on Saturday night after the banquet. This will be for approximately 40 art pieces donated by peer selected turners from across the SWAT region. All tickets drawn Saturday night are returned to the bin earning the "Two-for-One" name. The second half of the Two-for-One drawing will occur after lunch on Sunday. This second drawing will be for tools, wood, turning accessories donated from our vendors, with the penultimate prizes being the large lathe and the midi lathes, which will then conclude the festivities of the 2018 Symposium.

Our Art Gallery is second to none. It is the largest of its kind in the U.S.A. and is such a special area that we dedicate an entire room for art pieces that are displayed by turners that are attending the Symposium. Any turner has the availability to display (some are for sale) up to ten items in our ART GALLERY. Also, a section in the Art Gallery will be dedicated to the Beads of Courage exhibit of boxes that will be donated to various hospitals to be given to youngsters that are struggling through various treatments for serious life threatening diseases. You can check the SWAT website for more information and a link to the Beads of Courage website.

For a very small registration fee of \$140 you will be exposed to 7 internationally known Lead Demonstrators (Stuart Batty, Keith Gotschall, Ashley Harwood, George Hatfield, Craig Timmerman, Alan & Lauren Zenreich) and 17 Regional demonstrators, which create 63 turning rotations. You will receive an electronically generated handbook, access to a tremendous Art Gallery, a demonstration by Stuart Batty & Ashley Harwood on Friday night, various vendors and two separate drawings for art and tool items. Women in Turning will gather during lunch on Friday, and World of Woodturning meets after lunch on Saturday.

None of the above would be possible without your participation and the efforts of many volunteers that work hard and long to bring the SWAT Symposium to you each year. **So, welcome and may you have an outstanding experience at the 27th Anniversary of the SouthWest Association of Turners Symposium.**

Clyde Little  
President, SouthWest Association of Turners  
Email: [clyde2044@yahoo.com](mailto:clyde2044@yahoo.com)

# EVENT SCHEDULE

<b>Thursday</b>	7:00 AM	Doors Open for Vendors (Tables Not Available Until Unloading Complete) Registration Set-up (Staff Only)
	11:30 AM	Lunch for Vendors
	12:00 PM	Lunch
	3:00 PM	Registration & Logo Ware Sales Open (Drawing Ticket Sales @ Window #4)
	3:00 – 6:00 PM	Gallery Open for Check-in
	5:30 PM	Vendor Unloading Closes
	5:00 – 7:00 PM	Meet & Greet in Brazos South (Introduction of Demonstrators + Cash Bar)
	6:00 PM	Registration & Logo Ware Sales Close
	<b>Friday</b>	7:30 AM
8:00 AM		Registration & Sales Open
9:00 AM		Opening Ceremonies in Chisholm Hall
10:30 AM		Demonstration Rotations Begin
11:30 AM		Lunch for Vendors
12:00 PM		Lunch
5:00 PM		Gallery Closes
5:30 – 8:00 PM		Cash Bar
6:00 – 7:30 PM		Friday Cajun Dinner <b>Note: Tickets must be purchased in Advance</b>
7:30 – 9:00 PM	Batty vs Harwood Turnoff – Throwdown (See Rotation Schedule)	
<b>Saturday</b>	7:00 AM	Registration Opens
	7:30 AM	Gallery Opens
	8:00 AM	Registration & Sales Open Demonstration Rotations Begin
	11:30 AM	Lunch for Vendors
	12:00 PM	Lunch
	5:00 PM	Gallery Closes
	6:00 – 8:00 PM	Cash Bar
	6:30 – 7:30 PM	Banquet Dinner
	7:30 – 9:00 PM	2-for-1 Drawing
<b>Sunday</b>	7:30 AM	Gallery Opens
	8:00 AM	Demonstration Rotations Begin
	11:00 AM	Gallery Closes for Disassembly (Artist Pick-up Turnings)
	12:00 PM	Demonstration Rotations for 2018 End Lunch Tool Drawing Vendors can begin Teardown

# 2018 SWAT VENDORS

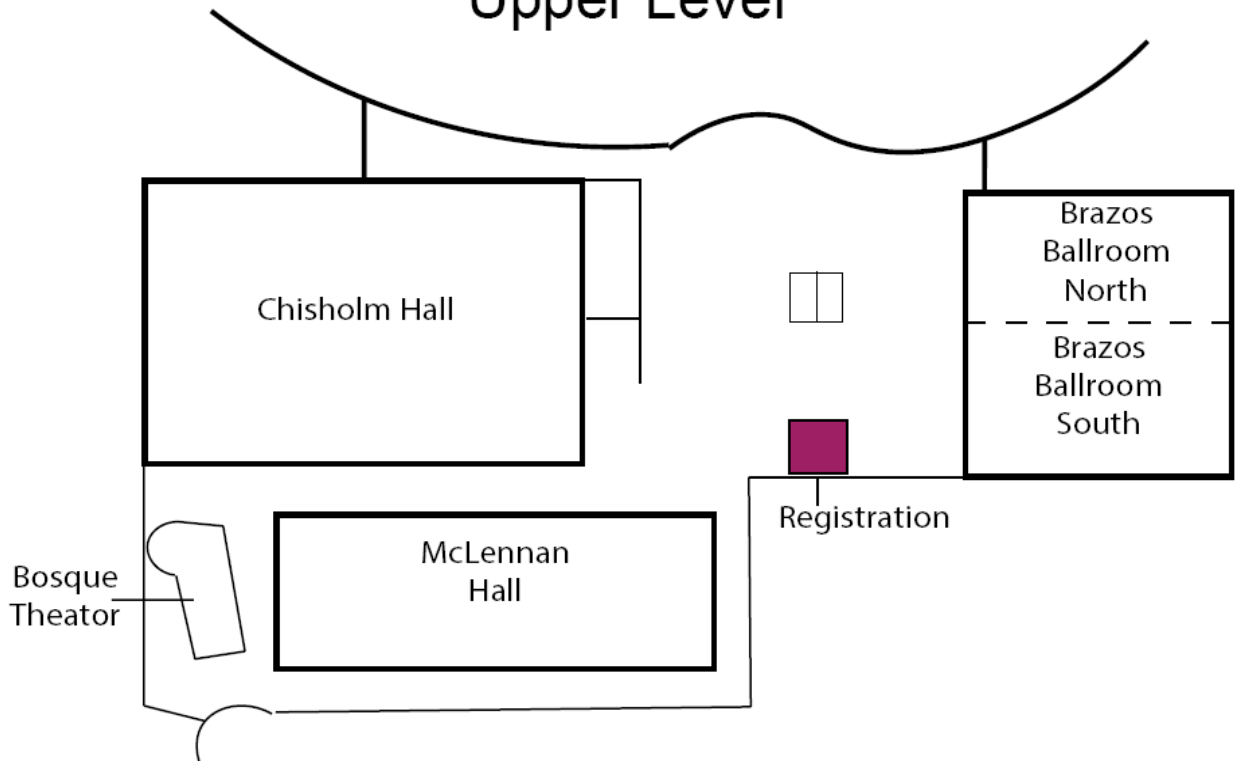
2 Tree Boyz Wood	AAW	Airbrushing Wood
Alan Lacer Woodturning	Amalgam-Mutt Blanks	AZ Caarbide
Big Monk Lumber	Carter and Son Toolworks	Century Tree Turnings
Chefwarekits	CHP International, Starbond	Chroma Craft
Cindy Drozda Woodworking Tools	Conestoga Works	Cuttermasters
Doug Baldwin Photography	Easy Inlay	Flute Master
Gator Venom	Hill Country Woods	Homestead Heritage Woodschool
Hunter Tool Company	James Kesler	JT Turning Tools
Kallenshaan Woods	Live Edge Mesquite	Local Woodwork, LLC
Lyle Jaimeson	Nave's Sawmill & Woodworks	Niles Bottle Stoppers
Oneway	PTownSubbie	Rising3B Woodworks
Robust Tools	Rotary Chisel	Spiracraft
Stainless Bottle Stoppers	Stockroom Supply	The Classic Nib
Thompson Lathe Tools	Trend Routing Technology	Turners Warehouse
Turningwood.com	TurnTex Woodworks	VincesWoodNWonders.com
Wood World of Texas	Woodpecker Tools	Woodturner Pro
Woodturners Wonders	Woodturning Tool Store	Woodturning with Tim Yoder
Woodworker's Emporium		

## Support SWAT Vendors

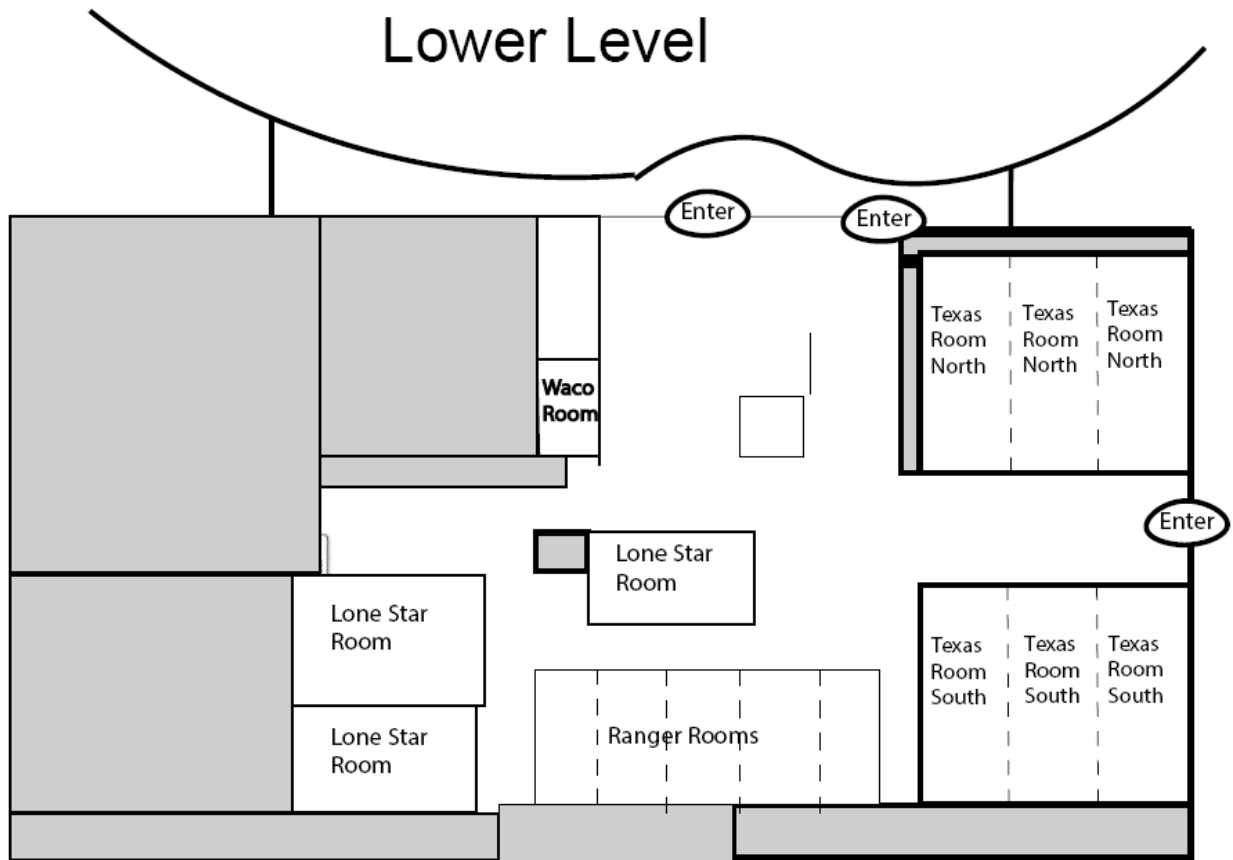
Many come from halfway across the country to bring you their products. Show them our Southwest Hospitality

# WACO CONVENTION CENTER

## Upper Level



## Lower Level



Room	Texas North	Brazos North	Texas South 116/117	Brazos South	Texas South 118	Ranger	Bosque Theatre
Sponsor	Powermatic CTWA	Vicmarc HUNT COUNTY	Powermatic GCWA	Powermatic WNT	Powermatic HILL COUNTRY	Powermatic DAW	Jet APT
<b>Friday August 24, 2018</b>							
<b>Opening Ceremony--Chisholm Hall</b>							
9:00-10:00	THE ZENREICHS	CORY WHITE	GEORGE HATFIELD	JIM CREEL	DAN TILDEN	KEITH GOTSCHALL	DON WARD
10:30-12:00	Embellishing with Archival Ink	Turning Bookends	Design and Usage of Woodturning Tools	It's What's on Top Focus on Finials	Exploring Natural Edge Designs	Off-Center Platter	Closed End Pens
12:00-1:30	<b>Women in Turning Meeting Brazos North</b>				<b>Lunch</b>		
1:30-3:00	DENNIS FORD	STUART BATTY	CINDY DROZDA	ASHLEY HARWOOD	CRAIG TIMMERMAN	SAMMY LONG	TONI RANSFIELD
	Pie Crust Bowl	Perfecting The Art of Cutting	Multi Axis Hollow Form	Rim and Foot Design on a Bowl	Winged Bowl Basics	Creative Power Carving	Polymer Clay From Start to Finish
3:00-4:00	<b>Break</b>						
4:00-5:30	JERRY DEGROOT	JIM BURT	GEORGE HATFIELD	JOHN SOLBERG	ANDY CHEN	KEITH GOTSCHALL	ALAN ZENRIECH
	Hollow Christmas Ornament	Vases from Triple Crotches	Woodturning Design	Fun with Polygons	Beginning Segemented Turning	Three Legged Stool	REMOTE DEMONSTRATIONS
6:00-7:30	<b>Cajun Dinner – Chisholm Hall (Advanced ticket purchase required)</b>						
7:30-9:00	<b>STUART BATTY VS ASHLEY HARWOOD</b>						

Room	Texas North	Brazos North	Texas South 116/117	Brazos South	Texas South 118	Ranger	Bosque Theatre
Sponsor	Powermatic CTWA	Vicmarc HUNT COUNTY	Powermatic GCWA	Powermatic WNT	Powermatic HILL COUNTRY	Powermatic DAW	Jet APT
<b>Saturday August 25, 2018</b>							
8:00-9:30	THE ZENREICHS Eccentric Jewelry Pendants	STUART BATTY Bowl Turning with The 40/40 Grind	JAMES THURMAN Spinning a Pewter Bowl	ASHLEY HARWOOD Fine Spindle Turning	DAN TILDEN Maximizing Your Expensive Wood	KEITH GOTSCHALL Off-Center Platter	JOHN SCHLOBOHM Making Pens with Different Materials Tips and Tricks
9:30-10:30	<b>Break</b>						
10:30-12:00	JEFF HORNUNG Airbrushing "High Desert"	TOD RAINES Natural Edge End Grain Bowl	CINDY DROZDA Multi Axis Hollow Form	JOHN SOLBERG Fun with Polygons	CRAIG TIMMERMAN Torus Vases	LEE SKY Birdhouse Ornament with Eggs	ZAC HIGGINS Cast Resin Pen Blanks
12:00-1:30	<b>Lunch</b>						
<b>World of Woodturners SWAP 1:00 Brazos South</b>							
1:30-3:00	THE ZENREICHS Embellishing with Archival Ink	STUART BATTY Off-Center Square Winged Bowl	GEORGE HATFIELD Design and Usage of Woodturning Tools	ASHLEY HARWOOD Rim and Foot Design on a Bowl	DAN TILDEN Exploring Natural Edge Designs	JIM CREEL It's What's on Top Focus on Finials	DON WARD Closed End Pens
3:00-4:00	<b>SWAT Directors Meeting Brazos South</b>						
4:00-5:30	DENNIS FORD Pie Crust Bowl	CORY WHITE Turning Bookends	JIM BURT Vases from Triple Crotches	JERRY DEGROOT Hollow Christmas Ornament	CRAIG TIMMERMAN Advanced Winged Bowl Turning an Arch Bowl	LEE SKY Birdhouse Ornament with Eggs	ZAC HIGGINS Cast Resin Pen Blanks
6:00-8:00	<b>Cash Bar</b>						
6:30-7:30	<b>Banquet Dinner</b>						
7:30-9:00	<b>2 for 1 Drawing</b>						



Room	Texas North	Brazos North	Texas South 116/117	Brazos South	Texas South 118	Ranger	Bosque Theatre
Sponsor	Powermatic CTWA	Vicmarc HUNT COUNTY	Powermatic GCWA	Powermatic WNT	Powermatic HILL COUNTRY	Powermatic DAW	Jet APT
<b>Sunday August 26, 2018</b>							
8:00-9:30	TOD RAINES Natural Edge End Grain Bowl	SAMMY LONG Creative Power Carving	GEORGE HATFIELD Woodturning Design	ASHLEY HARWOOD Fine Spindle Turning	DAN TILDEN Maximizing Your Expensive Wood	KEITH GOTSCHALL Three Legged Stool	TONI RANSFIELD Polymer Clay From Start to Finish
9:30-10:30	<b>Break</b>						
10:30-12:00	THE ZENREICHS Eccentric Jewelry Pendants	STUART BATTY Freehand Platform Sharpening	JAMIES THURMAN Spinning a Pewter Bowl	ANDY CHEN Beginning Segmented Turning	CRAIG TIMMERMAN Torus Vases	JEFF HORNUNG Airbrushing "High Desert"	JOHN SCHLOBOHM Making Pens with Different Materials Tips and Tricks
12:00-1:30	<b>Lunch</b>						
<b>Tool Drawing</b>							

As Of: August 1, 2018

## FAMILY PROGRAMS

This year's selection of programs, demonstrations and trips is designed to provide fun activities for the family members of the SWAT attendees. We will have a full day of Genealogy on Friday (some refresher classes, some new topics) and a variety of crafting classes and demonstrations on all three days. We will have our annual favorites; Zentangle, Fused Glass Jewelry, the Book Club Discussion, Spinning and Dyeing Demonstration and our Saturday morning "Share Time". We also have some classes repeating from last year as well as brand new topics! If you'd like to escape, check out the two trips; one on Friday to visit local museums (for art and culture enthusiasts) and one on Saturday to enjoy the Homestead Heritage Village (and to eat at the Cafe Homestead).

This year, our main room will be available as our "Community Store - to Shop, Sit, and Socialize"; bring your favorite unfinished projects to work on or if finished, to share or to sell! Come ready to spend time with friends! Check the event schedule and register early! All fee-based activities will require payment to the instructor (or trip captain) with cash only.

## WOMEN IN TURNING

The Southwest Association of Turners Symposium 2015 hosted its first *Women in Turning* gathering. *Women in Turning* is a virtual chapter of the American Association of Woodturners, that had its start at the 2014 AAW Symposium in Phoenix, AZ when Betty Scarpino organized a meeting of women to see if there was interest in forming a group focused on the support of women woodturners.

If you are attending the SWAT Symposium this year, please plan to join our meeting. The time and place will be posted throughout the Convention Center and on the Rotation Schedule.

## BEADS OF COURAGE



The SWAT Symposium took on the Beads of Courage program in 2010 inspired by Craig Fyock, owner of Wood World, Texas. Each year the contributions for the Beads of Courage by SWAT attendees and support of our vendors has exceeded the previous year, with 149 boxes in 2014.

If you are not familiar with the program, visit the Beads of Courage web site <http://www.beadsofcourage.org/pages/about.html/>, it is really a heart-warming experience.

Note: Beads-of-Courage entries are not judged.

## EXECUTIVE COMMITTEE MEMBERS

### **PRESIDENT, CLYDE LITTLE**

After 37 years experience in the electronics/computer world (mainly IBM), I decided to take up woodworking. Built a 24 x 60 shop and equipped it with woodworking tools, including a lathe that set idle for a year-didn't know what to do with it. I went to a Central Texas Woodturning meeting, where Stacey Hager was presenting. It turned out that Stacey and I had run around together at UT in the mid 60's and had not seen each other until the meeting. I subsequently became active in CTWA, learning woodturning from the best and eventually became president. I now have three lathes and lots of wood. I enjoy turning mesquite the most. Pat (my wife who is a past president) and I sponsor/host many classes in our shop, to include beginner's classes and national turners every year. It is a pleasure to be involved in a discipline with so many people that care about others and unselfishly share their knowledge. Because of that, I hope to help SWAT to continue to be the best symposium in the world, educating and sharing. I consider it an honor to be involved in such a community.



### **VICE PRESIDENT, GORDON GRAVES**

I was first introduced to a wood lathe in 1960, in 7th Grade wood Class. Mr. McDonald, my instructor, helped me attach a face plate to a chunk of maple. Took me three weeks of class to turn my Dad an ashtray. I still have that ashtray. After high school and college I started farming, forty-two years later I retired. During that 42 years I put together a good woodworking shop. Farming was always my first love, but woodworking came a close second. I bought my first lathe in 1992, a small Craftsman bowl lathe. In 2013 I decided I needed a bigger lathe, but during the hunt I found something much more valuable, The Southplains Woodturners Club. Mr. Glenn Williamson, one of the founding fathers of our club, sold me a lathe and sold me on the club. I joined the club shortly after and have attended many classes, beginners and intermediate. I am now helping to teach these same classes as well as serving as the club treasurer. I attended my first SWAT symposium in August of 2016 and was amazed at the number of people who were interested in woodturning. Everyone I met was friendly and helpful. I am looking forward to helping to carry on the proud tradition of SWAT.



### **2ND VICE PRESIDENT, HENRY PENNELL**

My first experience with a lathe was at a Woodworking Show in Dallas in 2009. Craft Supplies had a booth and invited me to make a pen. I was hooked. Later, I took a class from John Horn at Woodcraft, and bought a Jet mini lathe. I joined Dallas Area Woodturners (DAW) in November of 2010, and the demonstrator was Michael Hosaluk. Wow, I was mesmerized by his skill and the ease with which he handled his tools. I later became Treasurer of DAW in 2013, and most recently, President in 2017. I attended my first SWAT Symposium in 2013, and have been here every year since. I love talking to the other turners, seeing the demos and expanding my awareness of the various areas of our craft. I hope to help SWAT prosper and improve in the coming years.



**SECRETARY, BETTY HAGER**

Woodturning is not my primary hobby, but being married to Stacey Hager; I have had some quality lessons and have turned several art objects. When I turned these I was using a Delta Midi lathe or Stacey's 2436 One Way. I have attended this woodturning symposium since it was called TTT (Texas Turn or Two) and was held at the Maricopa Camp Ground. I remember the first time we attended a TTT symposium. The Maricopa location offered a few motel rooms and plenty of camp sites. There was a large barn where two demonstrations were staged and two smaller buildings for the other two demos; four choices at each rotation. The vendors were in tents! There were two to three tables where turners could display their work called the "Instant Gallery!" These early get-togethers were held in October. When the weather was great it was a perfect time of year...but we had two cold rainy years in a row. Something had to change. So we tried other locations – San Angelo, Temple, Wichita Falls...finally finding our current venue at Waco. Stacey and I were representatives from our Club (Central Texas Woodturners) when we transitioned from TTT to Southwest Association of Turners (SWAT). In 2008, I served as secretary to Steven Gottlieb when he was President of SWAT. I wrote a manual for the organization to provide some continuity from one year to the next. I have attended AAW and the Utah Woodturning Symposium and they are both wonderful, but what impressed me early on about our gathering was the spirit of friendship and willingness to share. The name tags at TTT always had your first name in large type...for everyone, turners and presenters. So everyone was on a first name basis. I watched David Ellsworth shoot long streamers of wood from his hollowing project, targeting friends in the audience. Rude Osolnik, gave me my first tuning lesson in a tent at the Powermatic booth. We have come a long way from those days, but I believe in this organization. Whether you are a beginning turner or an advanced artist, you will meet some great people at this Symposium and every time you attend you will learn something that will improve your skills.

**TREASURER, DAVE MARSHALL**

Raised in a small cabin on the plains of Kansas, I started my woodworking and woodturning career early in life. After building my first, small lathe, I began my woodturning career by selling hand-turned toothpicks to local farmers and businessmen. My skill set grew tremendously during this period which culminated in my ability to use a scraper to turn almost any product on the lathe. When I was thirteen, I read with lust about turner David Ellsworth in in an old black and white edition of Fine Woodworking. That article vaulted me to turn (scrape) my first box and lid. A beauty of a specimen in black walnut. Form and function – perfect. The bottom lacking just somewhat as not being completely flat and bearing the hallmark of three screw holes that attached the faceplate. Still stunning today.



Thirteen was the age a young student began his first year in Industrial Arts class in junior high school. After sweet-talking my Industrial Arts teacher, Mr. Anderson, he allowed me to come to shop before classes started for the day and turn all I wanted. He showed me the very basics of some of the limited tools we had available for turning. For some reason I don't ever recall a lesson in sharpening these tools though... that probably explains my expertise with the scraper. I turned my heart out that year; sock darns, miniature baseball bats, candlesticks, miniature baseball bats, boxes, small plates, miniature baseball bats to name a few. Something happened. I think life, girls, schooling, college, my masterplan to escape Kansas tapered my turning time. Now don't get me wrong, I tried to design, woodwork and woodturn as much as possible. I've always loved the design and then build and then re-design cycle of creation.

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Maybe that's why I became an Aerospace engineer. After graduation and landing in sunny Burbank, California, I got my first paycheck. I bought my first Shopsmith for my single-car garage/shop. I was on my way! Years later, and hundreds of projects later, we ending up in panther-sleepy Fort Worth. After starting a family, I began to look for a woodworking club to join, similar to ones I belonged to in California and Georgia. Not finding anything close by in the Metroplex, I ran across a magazine article featuring Devore Burc and its mentioning of a bunch of ragtags called the Woodturners of North Texas. Whoa... they met only three miles from my home! Their next meeting, I snuck in and grabbed a seat and was blown away by the demo. I was hooked again. I know that this is fascinating as all get-out, but long-story short, I joined that ragtag bunch and haven't looked back. After a while, I was president of the Woodturners of North Texas. The glamour and prestige went to my head and I ruled the Club with an iron fist for four years. That group of ragtags became a lean, mean turning machine, I say. As a Club member, I became familiar with the South West Association of Turners and attended my first SWAT symposium. Blown away, again! Unbelievable talent...and some of the other turners weren't that bad either. I've been Treasurer of SWAT for a few years now and can almost make the budget numbers add up - between turning projects. The remainder of my free time is spent....wait, I have no free time outside of SWAT. Other activities I do between SWAT projects are spending quality time with my wife, devotion to my new career in the Oil and Gas business, I'm also Treasurer of a professional organization (North Texas Measurement Association), eating, sleeping... well, you get the drift. I am truly honored to be associated with SWAT and every year look forward to the unbelievable talent and skill that you all bring to Waco! Onward to our 27th anniversary!

### **PAST PRESIDENT, STORMY BOUDREAUX**

My father was a carpenter contractor and I was always holding the end of a board that he was sawing or he had me close but out of the way, bending nails, pounding them into a chunk of 2x4 that he gave me to keep me occupied. He always built our homes, selling them as they were finished, and then building another, so on weekends I helped. During high school and college summers, he taught me the intricacies of finish carpentry. However when I graduated from college and joined the US Air Force as a pilot, my apprenticeship ended. Most military bases at the time had a DIY shop where I built really pitiful tables and other utility works of non-art. I did some carving and pyrography on going-away presents for members of my squadron, ultimately making a lot of picture frames. Then, when I retired from USAF, I opened an art gallery and picture framing business, but that wasn't viable. I finally found a real job with Lockheed, first in Palmdale CA and then in Fort Worth TX. In summer of 2003, while visiting the local Woodcraft store, I was invited to a Saturday demo at the Woodturners of North Texas (WNT) facility. Dick Sing was teaching how to turn an egg. Never having been near a lathe before, I wasn't ready for that, so Dick showed me some of the basics of woodturning and had me practice some spindle work. I was hooked. I bought a used Jet mini-lathe, and before I knew it, I was President of WNT. Seems like I blinked and suddenly I was President of SWAT. The people you meet and the things you can learn at the SWAT Symposium are priceless!



# SUPPORTING CHAPTERS



Abbr	Chapter	Area
AW	<a href="#">Acadiana Woodturners</a>	Lafayette, LA
AW	<a href="#">Alamo Woodturners</a>	San Antonio, TX
ALT	Ark-La-Tex Woodturners <a href="mailto:traderdon55@hotmail.com">traderdon55@hotmail.com</a>	Texarkana, TX
BW	<a href="#">Bayou Woodturners</a>	New Orleans, LA
BLT	Borderline Woodturners <a href="mailto:cwieters@elp.rr.com">cwieters@elp.rr.com</a>	El Paso, TX
BVW	<a href="#">Brazos Valley Woodturners</a>	Waco, TX
CAW	<a href="#">Central Arkansas Woodturners</a>	Hot Springs, AR
COW	<a href="#">Central Oklahoma Woodturners Assn</a>	Oklahoma, OK
CTWA	<a href="#">Central Texas Woodturners</a>	Austin, TX
CBW	<a href="#">Coastal Bend Woodturners</a>	Corpus Christi, TX
CTW	<a href="#">Comanche Trail Woodturners</a>	Midland, TX
CVW	<a href="#">Concho Valley Woodturners</a>	San Angelo, TX
DAW	<a href="#">Dallas Area Woodturners</a>	Dallas, TX
DSW	<a href="#">Diamond State Woodturners</a>	Jacksonville, AR
ETW	<a href="#">East Texas Woodturners Association</a>	Tyler, TX
GTW	<a href="#">Golden Triangle Woodturners</a>	Denton, TX
GCW	<a href="#">Gulf Coast Woodturners Association</a>	Houston, TX
HCT	<a href="#">Hill Country Turners</a>	Kerrville, TX
HCW	<a href="#">Hunt County Woodturners, Inc.</a>	Greenville, TX
LWT	<a href="#">Lone Star Woodturners</a>	Spring, TX
NEOWTA	<a href="#">Northeastern Oklahoma Woodturners Assn</a>	Tulsa, OK
NWOW	Northwest Oklahoma Woodturners	Enid, OK
PAT	Panhandle Area Turners Society <a href="mailto:celsea@yahoo.com">celsea@yahoo.com</a>	Amarillo, TX
SEOW	Southeast Oklahoma Woodturners <a href="mailto:engelwilson@fullnet.net">engelwilson@fullnet.net</a>	Idabel-Broken Bow, OK
SPW	<a href="#">South Plains Woodturners</a>	Lubbock, TX
STW	<a href="#">South Texas Woodturners</a>	Victoria, TX
WFW	Wichita Falls Woodturners <a href="mailto:handlebarsturner@aol.com">handlebarsturner@aol.com</a>	Wichita Falls, TX
WNT	<a href="#">Woodturners of North Texas</a>	Ft. Worth, TX

## LIST OF DEMONSTRATIONS

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## TURNING 27

WITH STUART BATTY

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### Bowl Turning with 40/40 Bowl Gouge Grind, Off-Center Square Winged Bowl, Perfecting the Art of Cutting, Freehand Platform Sharpening

*The Artist's essay ©2009 and previously appeared in the American Association of Woodturners Handbook, 2015, pg 62-67. This reformatted essay, is included with the permission of the American Association of Woodturners.*



#### Learning To Make Perfect Cuts in Woodturning: Turning Technique into Art

What are *Perfect Cuts* in woodturning? Perfect Cuts are consistent cuts made by a wood turner who demonstrates effective tool control, cuts easily and with very little physical effort, and produces any desired shape in any kind of wood – hard, soft, even spalted - all with no torn grain and no catches. *Perfect Cuts* reflect effective tool control!

Many wood turners around the world work at this level every day – and they are not all

professionals! They work with very little conscious thought since the vast majority of their techniques are performed sub-consciously. They have probably been turning like this for many years, and conscious thoughts control only basic decisions like shape, how much wood is removed, and how quickly the cutting takes place. At first even they found that mastery of the tools was difficult since there was so much to learn initially, and all that initial learning was based on conscious thought rather than sub-conscious action. If correct methods are not learned from the start, bad habits are stored in the sub-conscious, and it is very difficult to break these habits and learn correct methods.

I was fortunate in that I was taught correct cutting methods at a very young age. I served an apprenticeship under my father, but anyone can learn these methods from a qualified instructor. My personal quest is to teach others these correct cutting methods early in their woodturning careers so they turn more proficiently and more safely. By refining and breaking down the fundamental cuts into smaller and smaller increments, and explaining them in a way that is easily understood, I regularly achieve that goal. I instruct a small number of students (typically about 5 or 6 students), in sessions that last between 2 to 5 days. One-day classes are not as effective because repeating the fundamental cuts during at least a second day causes the sub-conscious to start to “kick in” and cement the learning into muscle memory (sub-conscious action).

Practice does not lead to perfect wood turning right away, but practicing *Perfect Cuts* leads to perfection in technique, which eventually leads to greater perfection in woodturning. An imperfect technique may work quite well, at least for a while, but using imperfect techniques



long-term is ineffective and fails to foster continuous improvement. Many self-taught wood turners have developed their own styles, but they seldom involve *Perfect Cuts*, and their proficiency in woodturning suffers as a result.

So what are *Perfect Cuts*? I will explain in words, but doing so is obviously not as effective as participating in a hands-on class. But...it is a start. For those who have taken a class with me, these words should serve as reminders of the points made in class.

I believe that the rules I espouse are the *only* way cuts should be made. I must admit that many wood turners break these rules and end up with satisfactory cuts. I am not interested, however, in “satisfactory” when I know that every wood turner is capable of attaining perfection if cuts are made correctly. The more rules one breaks, the more difficult the effort, and the less consistent the results – and yes, torn grain will be the rule.

To my great pleasure, many world-class wood turners have enrolled in my classes. They already demonstrated an ability to create incredible art, but they wanted to take their art to the next level by making more consistent cuts (Perfect Cuts). What they take away from my class is an improved understanding of techniques and a new awareness used to more critically analyze their own work and the work of others.

### Seven Principles That Lead To Perfect Cuts

Perfect Cuts result from practicing seven (7) principles that are summarized below, in order of importance, and then further explained. Very important to understand is that the first six principles must be in order to achieve success in the seventh principle – Technique (Push Cut Style) - and make Perfect Cuts consistently.

- |                                |                             |
|--------------------------------|-----------------------------|
| 1. Grain:                      | Side / End / Mixed          |
| 2. Chucking:                   | Secure / Accurate           |
| 3. Sharpening Cutting Edge:    | Type / Size / Shape / Angle |
| 4. Tool Rest:                  | Height / Distance / Angle   |
| 5. Lathe Speed:                | Fast but safe               |
| 6. Stance:                     | Position of feet            |
| 7. Technique (Push Cut Style): | Straight / Concave / Convex |

#### 1. GRAIN (orientation of grain or grain direction)

Woodturning is challenging because of the many types of material turned. Materials may be very soft, very hard, or in between. Grain is the only common denominator – all woods (with the exception of burl or burr wood) have side grain and end grain. Bowls can have either a side or end grain orientation. A side grain bowl has mixed grain (a combination of both side and end grain), while end grain bowls are pure end grain. If mixed grain, the grain is mounted perpendicular to the lathe bed so that the wood turner is presented half the time with side grain and half the time with end grain. If end grain, the wood turner is presented with only side grain, as in spindle turning, and end grain only is hollowed.

We try to avoid cutting into mixed grain directly since doing so tends to cause catches. Most importantly, we never cut directly into end grain. We focus on making slicing or peeling cuts (a gouge can slice and peel at the same time). Cutting end grain with the cutting edge facing uphill will invariably produce a catch. If the cutting edge of the tool is parallel to the floor or pointing downhill, then scraping, rather than slicing or peeling, is taking place.



In sum, there are only three ways to remove wood:

- Slicing (like a skew): There must be bevel contact (floating rather than rubbing) to create a slicing action.
- Peeling (like a parting tool): Only side grain can be peeled – trying to peel end grain will cause the tool to self feed and catch. Note that when peeling side grain the bevel does not always have to be in contact, but without contact scraping is taking place, and the cutting edge dulls very fast.
- Scraping (many tools): A scraper is not the only tool that scrapes - all tools can scrape if the handle is in the incorrect position. There are three main ways to inadvertently scrape: (a) the handle is too high, (b) the front of the tool is being pulled with the left hand, (c) the left hand / thumb is being used as a fulcrum during the cut.

Note: A gouge is the only tool that can peel and slice at the same time. The tip of the gouge creates the slicing action, and the wing produces the peel. A bowl gouge shape is better at this combination cut than a spindle gouge because of the differences in cutting surfaces in the respective flutes. A spindle gouge has a radius flute, while most bowl gouges have either a vee or elliptically shaped flute. A skew chisel can slice or peel, but not at the same time. A key disadvantage of the skew chisel is that only a small amount of wood may be cut at one time, so cutting with a skew is very time consuming.



## 2. CHUCKING (mounting the wood on lathe)

Wood must be mounted both securely and accurately to prevent vibration from occurring during the cutting process. Vibration creates spiral patterns on the surface of the wood as cutting takes place. The shape of a tenon or recess for gripping in a chuck – and most importantly – the seating of the wood against the chuck jaws - are critical to accurate mounting and a more secure grip.

## 3. SHARPEN CUTTING EDGE

Four factors must be considered before sharpening the tool:

- Type of Tool – Using the wrong type can be dangerous.
- Size of Tool - For example, blade diameter for a gouge, and the length of the handle.
- Shape of Cutting Edge – For example, wings of a gouge ground straight across for straight cuts and wings ground back for cuts with more shape and detail.
- Angle of Cutting Edge - 40° for most gouges and chisels (but there are exceptions).

First select the correct type and size of tool for the grain orientation and size or shape of the



turning. Example do NOT use a roughing gouge (sometimes called “spindle roughing gouge”) on a side grain bowl – you will be breaking *Principle #1* (Grain) by cutting end grain, which will result in a major catch that may snap the tang off the roughing gouge (and hurt the wood turner in the process). Another example – do NOT use a skew for roughing a spindle down, despite what you may have seen in a video – the correct tool is the spindle roughing gouge. Using a skew in this manner is dangerous.

When selecting a tool, it is also important to take into consideration the length of the blade plus handle. These concepts involve overhang ratio and gouge diameter overhang (see below). In general, spindle turning rarely requires a long handle and blade because the cutting edge is not usually hanging off the tool rest very far. Bowl turning can require use of much longer handles, especially for the inside of the bowl when the overhang can become considerable.

Overhang ratio depends on whether one is cutting, scraping or negative rake scraping

- Cutting requires a 5 to 1 ratio (for example, if the cutting edge of a gouge is extended 3 inches beyond the tool rest, then there must be at least 15 inches of blade / handle length behind the tool rest, and the wood turner must be holding the end of the handle to preclude loss of leverage).
- Scraping requires a 7 to 1 ratio (see above example).
- Negative Rake Scraping requires only a 3 to 1 ratio (see above example) and requires the least amount of leverage.

Gouge diameter overhang is important as it relates to the distance the tool overhangs the tool rest. Too small a gouge, or too much overhang, causes the blade to start vibrating. This vibration may sometimes be mitigated by using lighter and / or slower cuts. Below are guidelines:

Gouge Diameter	Maximum Overhang
1/4"	3/4"
3/8"	1 1/2"
7/16"	2"
1/2"	2 1/2"
5/8"	4 1/2"
3/4"	6 1/2"



Note: Gouge diameters might be cited differently in a mail order catalog – the above diameters listed are the physical size of the haft of the gouge, not the European measurement.

The shape and angle of the cutting edge are also important. In many books and videos, wood turners espouse different angles for different gouges or chisels. For the vast majority of all gouges and chisels, I am convinced that the optimal angle is 40°, and I know that a 30° angle on a spindle gouge tends to be too aggressive. This is the angle of a chef's knife, and also of a beaver's tooth. It is also the angle between a self-feeding cutting edge (35° and below) and a duller angle (45° and above) that requires much more pressure to perform the cut (a 45° angle requires about 4 pounds of pressure, while a 40° angle requires only about 2 pounds of pressure). There are of course exceptions to use of 40° all the time; these exceptions will be addressed in a future article on grinding and sharpening woodturning tools.

#### **4. TOOL REST**

Tool rests are critical to effective control of the tool. Height, distance, and angle of the tool rest must reflect the size or type of tool and size of wood blank, as well as the direction in which the cut or scrape is being made, including consideration of the location at which the cut will start and end.

Height:

- The standard height for the majority of cuts is approximately 1/8" to 1/4" below center a little lower for a 5/8" or larger diameter bowl gouge. Lower the tool rest when hollowing

the inside of a side grain bowl, but only as the cut gets deeper, to ensure maintenance of an upward angle when cutting.

- When planing or rolling beads with a chisel (not needed for gouges) raise the tool rest to above center. The diameter of the wood blank and the size of the chisel will dictate how much the tool rest should be raised.
- When scraping, the tool rest is generally fixed above center so that the cutting edge of the scraper is pointing downhill (uphill will result in a catch).
- When negative rake scraping, only the negative angle on the top of the blade needs to point downhill not the actual blade.

Distance:

- The distance between the tool rest and the wood is critical to effective control of the tool too much distance, and leverage is reduced. The tool rest can also be so close to the wood that use of the tool becomes impossible. There needs to be just enough space to place the tool securely on the tool rest, ready to produce the cut, without the cutting edge of the tool being in contact with the wood. Usually 1/8" to 1/4" away from the wood is ideal, possibly further for 5/8" diameter or larger bowl gouges.

Angle:

- The angle at which the tool rest is set to the wood is critical for both the shape one desires to produce and control of the tool. One must be able to both start the cut in a controlled manner and complete the cut comfortably.
- Most tool rests supplied with modern lathes are not ideally shaped for what wood turners need them to do and often do not allow optimal positioning of hands. For the most part, however, this failure by manufacturers represents an inconvenience rather than a major issue.

**5. LATHE SPEED**

Lathe speed in woodturning is a balancing act. Higher speeds are needed to effectively cut; slower speeds tend to make clean and consistent cuts much more difficult to achieve. With higher speeds there is greater potential for injury, more stress is placed on chucking systems, and unbalanced wood blanks can literally fly off the lathe from excess vibration. Use of variable speed controls on modern lathes has to a great extent made addressing these issues easier.

Below are guidelines for round wood blanks that are in balance. For square wood blanks, the longest diagonal measurement should be used. The rightmost column is the key to understanding risk.

<b>Diameter of Wood</b>	<b>Blank Maximum Lathe Speed (revolutions per minute)</b>	<b>Outer Diameter Surface Speed (miles per hour)</b>
2	2,400	14
3	2,200	20
4	2,000	24
6	1,700	30
8	1,500	36
10	1,350	40
12	1,250	45
14	1,100	46
16	950	45

### 6. STANCE

Stance is the position of one's feet while performing a cut. Stance is an important part of effective and consistent cutting. Positioning one's feet correctly is also critical to producing desired shapes while controlling the tool during the cutting process.

The three stances are:

- Parallel Straight Cut: Feet are parallel to the lathe bed (may also be parallel to the cut if the cut is angled – for example, when removing the corner of a side grain bowl).
- Oblique Straight Cut: Left foot is forward.
- All Curved Cuts (concave or convex – both directions): Right foot is forward. Longer cuts may require the right foot to be even more forward for example, the larger the bowl diameter, the longer the curved cut, and therefore the right foot might need to be quite far forward to maintain balance during the cut.

### 7. TECHNIQUE (Push Cut Style)

Technique is the way the tool is controlled, both with the type of cut, and with correct use of the hands. Technique is last principle on the list, but technique must be considered before selecting a tool, setting the tool rest, and determining stance.

The Push Cut.

The principal style of cut I use and teach is the Push Cut – a name I assigned to my style after watching other professional wood turners pull the gouge around the outside of a side grain bowl. I call their style the “Pull Cut”. Note that this Pull Cut cannot be performed on the inside of a bowl, and also that it is impossible to get into corners using the Pull Cut. The Push Cut should be learned and practiced first to foster use of the most effective woodturning cuts.

Correct Use of Hands:

Assume for the purposes of this explanation that the wood turner is righthanded, and Push Cuts are therefore controlled by the right hand (the one holding the handle).

The key mantra associated with use of the Push Cut is that **CONTROL COMES FROM THE RIGHT HAND!** It is impossible to complete a Push Cut Perfect Cut using both hands. The Pull Cut, and also scraping, requires control from both hands.

What does this right hand and arm do to control the tool during a Push Cut? Only four motions & their opposites are possible:

1. Lift or drop
2. Push or pull
3. Twist (left and right)
4. Swing (left and right)

Straight cuts use the first two motions (lift and push). If twist or swing is added, the cut will no longer be straight. Note that nearly all straight cuts involve body contact with the handle during the cut. Curved cuts require use of all four motions to produce a fair curve. Note that all curved cuts do not involve handle contact with the body. The cut may start with the handle against the body, but as soon as the tool moves, the contact will cease since there is simply too much travel in the handle during curved cuts. If the cut is progressing in the opposite direction, then the handle would start away from the body, and at the very end of the cut the handle would either be touching the body or be very close.

What does the left hand do? Think of the left hand as an assistant who adds no controlling action to the tool. The left hand provides assistance in four possible ways, but only one (weight) is essential in all cuts:

1. Weight: Adding weight to the front of the tool, or down onto the tool rest, is essential in all cuts. Most tools are not heavy enough at the front, largely because the handle is lower than the blade.
2. Positioning the front of the tool for the start of the cut. The right hand is simply too far back to effectively position the front of the tool. The left hand, at the front near the cutting edge, is much more capable of accurately positioning the tool to start the cut.
3. Preventing skid. When starting certain cuts, such as an entry cut on the inside of a bowl or cove, the gouge will want to skid / skate to the left because at that point there is no wood behind the bevel. This skidding effect will not take place on a broken surface such as a natural edge bowl or pommel – the tool will simply not skid on air. The left hand can prevent this skid / skate through use of the left thumb on the tool rest (in contact with the rest) behind the gouge blade, with the left hand fingers on the opposite side of the blade pinching the blade between thumb and fingers. A key point is that this assist from the left hand must be momentary only once the cut has started, and the bevel has wood behind it, the left hand must be moved back away from the rest and used only to add weight. Leaving the left hand on the tool rest often prevents the tool from cutting correctly.
4. Braking or squeezing. At the end of certain cuts, the tool must be prevented from travelling past a certain point for example, past the center on the inside of a bowl or box. The left hand is used to squeeze the front of the tool back toward the right hand to counter the pressure being applied to produce the cut – in essence applying a brake. This squeezing technique is also useful while cutting the outside of a sidegrain bowl to reduce the bounce effect typically caused by the left hand adding pressure to the bevel – in effect helping to float the bevel.

The left hand must **NEVER** control the tool or influence the path of the tool. The left hand will destroy any cut if it influences the path, adds pressure to the bevel, or removes the bevel off the surface by pulling the blade. The left hand or thumb must **NOT** become fulcrum points. The left hand must **NOT** pull the front of the blade at any time since doing so causes the bevel to come off the wood and the cut to become a scrape, leaving small grooves in the surface of the wood. Scraping will also dull the cutting edge approximately 30 times faster than keeping the bevel in contact with the surface.

### **Other Aspects of Tool Control**

1. Understanding Handle Height:
  - Handles need to be at the correct height for each type of cut. Too high, and the cut turns into a scrape. Too low, and aggressive cuts result.
2. Understanding the Concept of Bevel Flotation:
  - The bevel must be in contact to be cutting (if not, one is scraping), however, the amount of contact is the critical issue. The bevel must **float** (i.e., move across the surface without pressure) rather than rub on the surface.
  - If too much pressure is applied (bevel rubbing), the cut will bounce. This bounce occurs most often in bowl turning because the grain is mixed (both side and end grain) and the bevel therefore travels over different densities of grain. Any pressure on the bevel will start a very small bounce on the surface, which will amplify in longer cuts – and result in an uneven or rippled surface.
  - A vivid demonstration of the destructiveness associated with bevel rubbing is attempting to cut a broken surface while pushing the bevel on to the wood – such as cutting a barkedged bowl or a pommel (the shoulder between the square section and the rounded diameter on a chair leg or baluster). Unlike rubbing the bevel on a solid

surface, the effect of placing pressure on the bevel while cutting a broken surface is instantaneous failure of the cut.

### 3. Understanding Flute Orientation (applies to gouges only):

- Flutes must be correctly oriented – too open and the cut will become aggressive, and too **closed and the tool will fail to cut**.
- An **open flute** means that the opening of the gouge faces the ceiling. A **closed flute** means that the opening of the gouge faces the floor. Since no cuts are possible with the flute fully closed, to achieve a cut the flute must be facing right or left, or more open.
- During any curved cut, the flute must be twisted / rotated to enable the cutting edge to reorient to the grain. **Concave cuts** start with the flute on its side (left or right) and end with the flute fully open (facing the ceiling). **Convex cuts** start with the flute fully open (facing the ceiling) and end with the flute half closed (left or right).

The goal of this paper is to improve understanding of what constitutes *Perfect Cuts* in wood turning. I am convinced that *Perfect Cuts* are possible for all wood turners. Hopefully the information in this paper will enable wood turners – with some practice – to achieve *Perfect Cuts*. Practicing the correct techniques is the key!

For further resources: The artist has over 30 High Definition free videos at [vimeo.com/woodturning](https://vimeo.com/woodturning) that anyone can watch and download (18 hours in total).





# TURNING 27

WITH JIM BURT

[<Link to List of Demonstrations>](#)

## Vases from Triple Crotches

This demonstration describes how to turn a vase from a crotch with three branches. These vases are designed such that the top of each wing is at the same height and radius. This gives good visual balance to the turning. Perfect triple crotch blanks are rare. Dealing with imperfect blanks is the focus of this demonstration. A rational process is described for finding, cutting, mounting and turning a blank to yield a simple form with high symmetry.

Figure 1 illustrates a progression of forms turned from various blanks. The two vases at the top right are turned from simple logs. These blanks place few constraints on the shape of the vase. The two vases at the top left, called winged vases, are turned from a typical crotch with two branches. To achieve good visual balance, the branches should have similar diameters and emerge from the trunk with similar angles. These blanks typically place few constraints on the shape of the vase.



Figure 1: Vases Made from Various Blanks

The four vases on the bottom row are turned from triple crotches. Ideally, the three branches should have similar diameters, emerge from the trunk at similar angles and be equally spaced around the trunk. These ideal, high symmetry blanks, though rare, are easy to mount and turn. Imperfect blanks can be quite challenging to mount and turn. They also place severe constraints on the shape of the vase. These blanks are the focus of this demonstration.

These vases can be divided into three sections; the base, the body and the top (wings). A simple base supports a simple body. The visual interest lies in the top of these turnings and arises from the natural structure of the crotch of the tree. Decorative elements are sometimes used to connect these sections. This demonstration will describe a rational way to control, to the extent possible, the appearance of the top.

### Safety First

Woodturning is potentially dangerous under ideal conditions. Turning blanks with protruding branches is especially dangerous. Follow all standard safety procedures when turning. In



particular, always position the tool rest and then slowly spin the blank by hand to ensure clearance. Once the tool rest is set, never move any body part or clothing past the tool rest. Set the lathe to its lowest speed and bump the motor to check for excessive vibration. If you are not sure you can safely turn that blank then don't do it. To prevent a catch, start your cuts carefully and remember your ABC's. You cannot always predict when the cut will begin. These blanks are long and almost always unbalanced. Turn at low speeds and always use a tailstock or steady rest for support during turning.

### Harvesting a blank appropriate for your lathe

Blanks for these vases are usually severely unbalanced. The weight and especially the balance of a blank must be appropriate for the weight, minimum speed and method of anchoring of your lathe. A severely out of balance blank requires a massive lathe with a low speed. A well-balanced blank, even if heavy, can be turned on a small lathe. I used a Jet 1220 lathe bolted to a heavy cabinet to turn the vases in Figure 1. This lathe's minimum speed of 500 rpm is too fast for even a moderately heavy, unbalanced blank. I must choose my blanks carefully. I also regularly replace the bearings! A similar lathe on a lightweight stand would require a very lightweight, very well-balanced blank.

A major challenge for turning these vases is finding an appropriate blank with minimal imbalance. Look for small trees with straight trunks that have a triple crotch. The 3 branches should have similar diameters, emerge from the trunk at similar angles and be equally spaced around the trunk. Salt cedar is a good source of lightweight, but often unbalanced blanks. Mesquite offers heavy blanks that can be well-balanced – if you have the patience to look.

### Mount the Blank

The blank is initially mounted between centers. The center of the trunk is found with a center finder. The center of the branched end is found as follows. Shim the blank so the trunk is vertical as in Figure 2A. View the trunk from several directions to ensure it is vertical. Use your best judgement if the trunk is bent. Make a square cardboard template with a circle cut out of its center. The diameter of this circle determines the diameter of the top of the wings. Place the template over the blank and position it horizontally and touching the outer edge of all 3 branches. Sight from corner to corner to locate the center of the circle. The horizontal red lines depict this process. The vertical red line shows the axis of rotation of the blank. The tailstock is located at the center of this circle with a piece of plywood (see below). Ideally, the center of this circle lies near the center of the trunk as shown in Figure 2B. Each branch is marked and then trimmed where the template touches them. This procedure ensures the top of each wing is at the same height (horizontal) and lies on a circle with a known diameter. This procedure gives the vase good visual balance. You can also look between the template and the crotch to judge the variation of the rim between the wings.

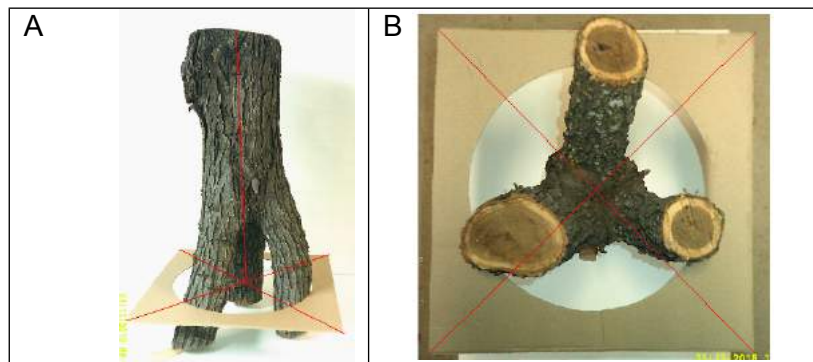
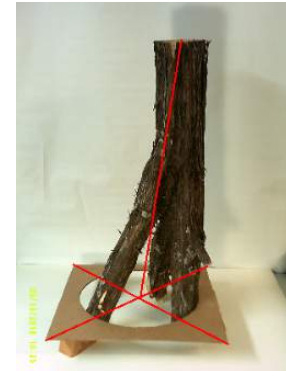


Figure 2: Mesquite Triple Crotch and Template.

The blank in Figure 2 is close to ideal. How do you deal with a less symmetrical blank? We follow the same approach described above but must choose the diameter of the circle wisely.

**Mounting a Non-Ideal Blank**

This figure shows a salt cedar blank with a 10 inch diameter template. The vertical red line tilts strongly to the left, indicating that the trunk near the crotch is completely off the axis of rotation. (Project the width of the trunk down to the template to see this.) The blank is too unbalanced to turn under these conditions.



This figure shows the same blank with an 8 inch diameter template. The axis of rotation is still tilted. The center of rotation is now at the edge of the trunk. The balance has improved relative to the 10 diameter template but is still not very good.



This blank weighs less than 5 pounds. I'm tempted to try an 8 inch diameter vase. If it is too unbalanced, I can always further trim the blank.

This figure shows the same blank with a 6 inch diameter template. Sometimes you can't see the corners of the template to judge the center of the circle. The square projects the corners of the template onto the table top. Lines connecting these four points define the center of the circle where the pencil is placed. For this template, the axis of rotation is almost vertical, indicating a more balanced situation. I'm sure my lathe can handle this blank.



Lines are marked around each branch at the height of the template. The blank is trimmed on these lines.



## 27<sup>TH</sup> SWAT SYMPOSIUM

I want to see if I can get lucky and turn a larger vase. I marked the branches at the height of the 8 inch template and I cut the branches on these lines.



After the branches are trimmed, plywood is cut to fit snugly between the branches. The point of a compass is set on the outside edge of each branch and an arc is drawn. These arcs define the location of the tailstock point. This approach eliminates the need to position the tailstock by trial and error.

Note that the plywood rests inside the branches to ensure it cannot come out even with severe vibrations.



The blank is mounted between centers. Position the tool rest near the tailstock and slowly rotate the blank. Ensure that the tip of each branch is the same distance from the tool rest. Sometimes the balance can be improved by adjusting the position of the drive spur.



Tighten the tailstock and bump the motor. If safe, turn on the lathe and observe the rotating blank.



You can visualize possibilities for the shape of the vase in the spinning blank. To further refine your ideas, rotate the blank by hand and use your finger as a gauge. This process revealed that I could not turn a pleasing form with the blank mounted in this way. The solution is to trim the blank at the 6 inch lines and go through the process to remount the blank. Finally, cut a tenon for a four jaw chuck.

**Turning the Vase**

Turn the exterior of the top of the vase. Start making light, curved cuts but stay well below the white line at first. Avoid heavy cuts that can damage the bark on the backside of the branches. Find a suitable place for the steady rest and turn a cylinder at that spot. Remove excess wood below the cylinder to reduce vibrations.



Refine the shape between the white line and the cylinder.

Move the tool rest and begin turning the interior of the top. Keep the tailstock in place. Take light cuts and remove wood deep as practical. Note that the plywood has been cut but not enough to weaken its grip of the blank.



Replace the tailstock with a steady rest and continue turning the interior. Again, use light cuts. It helps to drill the center of the blank down to the depth of the steady rest. A 1 $\frac{1}{8}$  inch diameter Forstner bit was used here.



Continue turning the interior until you reach the depth of the steady rest.

I usually don't turn past the steady rest because I don't always know what shape the body will take. I don't want to weaken the body.



## 27<sup>TH</sup> SWAT SYMPOSIUM

Replace the steady rest with the tailstock with a cone center.

Turn a base for the vase and then connect the top and base with a pleasing shape. The pencil line shows the depth of the 1 1/8 inch diameter hole drilled into the vase. Don't turn this region too thin. Stop the lathe often to check the shape from different angles. Be open to design changes but do not accept an unpleasant form just to highlight a feature in the wood. The shape of the body must support the natural rim in a pleasing way.

Now finish hollowing the interior of the vase. Given the thin profile of this vase, a 1 inch diameter hole was drilled the length of the vase. The step between the 1 1/8 and 1 inch diameter holes was carefully cleaned up with a scraper. The steady rest is used when more turning is necessary.

Reverse mount the vase using a dowel. Very carefully clean up the bottom. The base should be wide enough to give stability to vase. If the base is too small, turn a tenon and make a base from another blank. The new base should complement the natural rim on top.

Here is the completed vase.





# TURNING 27

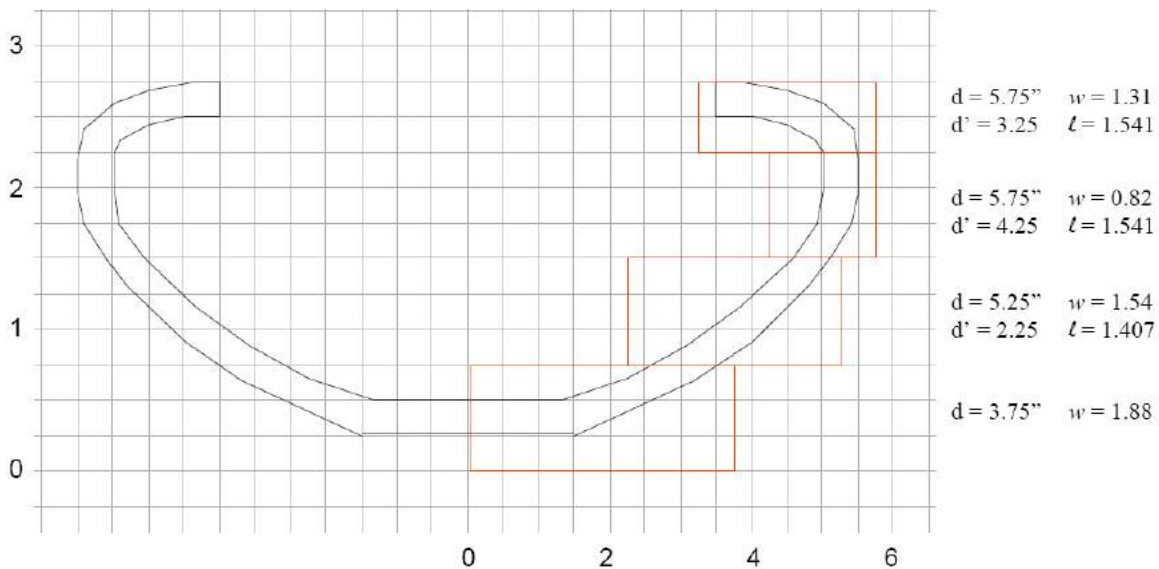
WITH ANDY CHEN

[<Link to List of Demonstrations>](#)

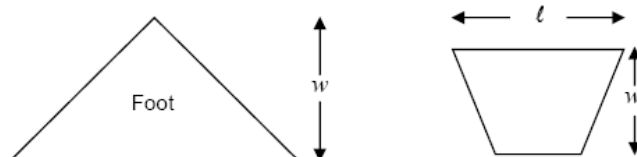
## Beginning Segmented Turning

The greatest difference of segmented turning from the “block” turning is the turner must decide what final form the turning will take even before the first cut is made. Although the sky is the limit as to the form and design, once the segmented turner sets the course, there is very little leeway for deviation from the original design. Therefore, the planning is the crucial part of the entire process. Typically, segmented turnings are constructed from stacked rings of varying sizes. Below is a sketch of a simple bowl that is built from four segmented rings. It was designed by hand drawing on a traditional graphing paper. The dimensions of the necessary segments are then calculated accordingly. The formulae for calculation are all on the next page. The spreadsheet below is an actual printout from MS Excel which makes the process less painful. There are computer programs on the market that make life much easier, Woodturner Pro ([woodturnerpro.com](http://woodturnerpro.com)), Turnedwood Software ([turnedwood.com](http://turnedwood.com)), to name just a couple.

Arguably the most critical aspect of building a segmented turning blank is cutting the miter angle on segments accurately. I use a homemade “wedgie sled” (see [segeasy.com/wedgies.htm](http://segeasy.com/wedgies.htm) for the wedgies and [youtu.be/hpFNE1CHsc4](http://youtu.be/hpFNE1CHsc4) for construction of the sled.)

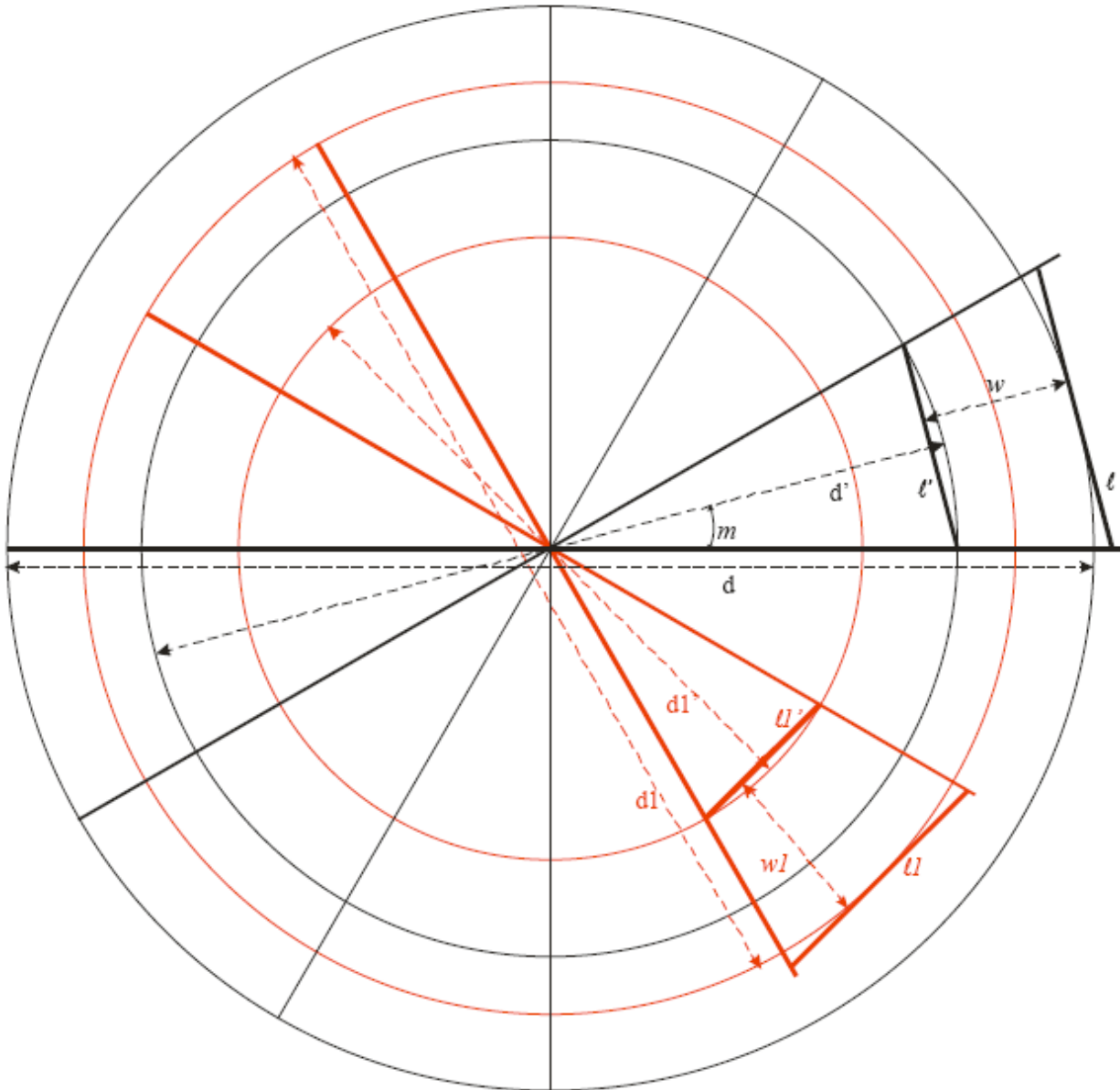


Layer	n = # of seg	m = miter angle	d = OD	d' = ID	w = width of seg	l = length of seg	l' = short length	Total board length	T = thickness
1 (Foot)	4	45	3.75		1.88	3.750	0.000	8.21	0.75
2	12	15	5.25	2.25	1.54	1.407	0.582	13.49	0.75
3	12	15	5.75	4.25	0.82	1.541	1.100	17.40	0.75
4	12	15	5.75	3.25	1.31	1.541	0.841	15.84	0.5



## 27<sup>TH</sup> SWAT SYMPOSIUM

Calculation of segments on 2 overlapping rings of different diameters. The OD ( $d$ ,  $d_1$ ) and ID ( $d'$ ,  $d_1'$ ) of each ring are determined from the sketch on page 1. Note that the width of the segments is NOT the difference between the OD and ID.



$n$  = number of sides,  $m$  = miter angle,  $d$  = diameter of ring,  $d'$  = internal diameter of ring,  
 $w$  = width of segments,  $l$  = length of segments,  $l'$  = short length of segments

$$m = 360^\circ/2n$$

$$w = 1/2(d - d' \times \cos m)$$

$$l = d \times \tan m$$

$$l' = d' \times \sin m$$

$$\text{Total board length} = (l + l') \times (n/2) + (0.125/\cos m) \times n$$

Example: For a ring with 12 segments, 6" OD, 4" ID

$$m = 360^\circ/(2 \times 12) = 15$$

$$w = 1/2(6'' - 4'' \times \cos 15) = 1.068$$

$$l = 6'' \times \tan 15 = 1.608$$

$$l' = 4'' \times \sin 15 = 1.035$$

$$\text{Board length} = (1.608 + 1.035) \times (12/2) + (0.125/\cos 15) \times 12 = 17.307$$

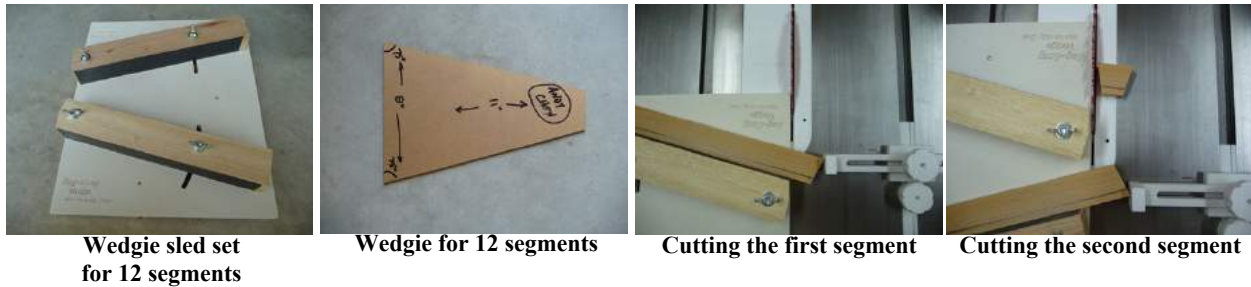
Non-italicized are assigned and italicized are calculated.

**Procedure:**

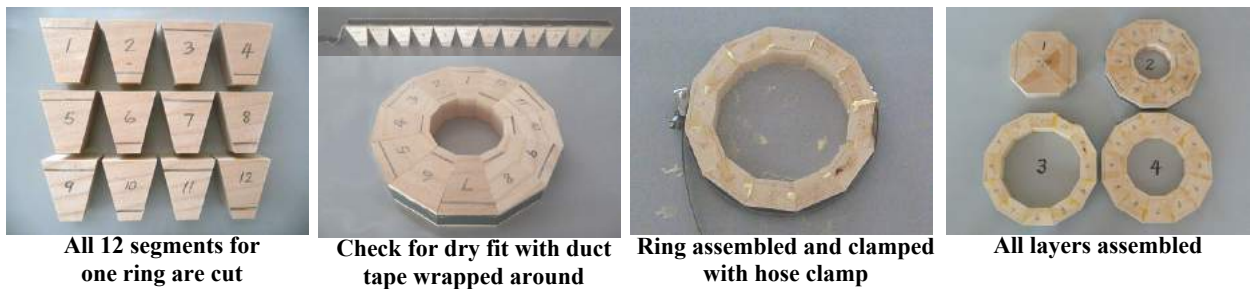
The foot (bottom layer) is constructed with four equal segments cut diagonally to the wood grain. They are glued in two pairs. The two halves' facing sides are trimmed on a table saw and two halves glued together such that the apexes of all 4 segments come to the center. One face of the block is flattened on a disk sander and glued to a waste block already trued up on the lathe. A center mounted on the tailstock is used to center the piece on the waste block as well as providing pressure while the glue sets. The block is turned round and center of the block is turned to near final depth before the edges are trued up to a perfectly flat surface.



The other layers are built from segments cut using the wedgie sled with a stop block as shown below. Segments are cut using the two backing fences alternately. Notice the black line on the stock. This line helps keep the correct orientation of the segments.

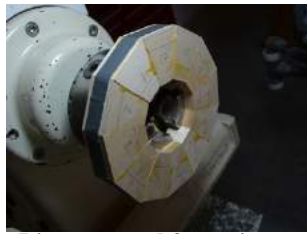


Wrap the segments tightly together with a strip of duct tape to form a ring to check for a perfect fit. If there are no gaps between segments, unwrap and apply wood glue between segments. After rewrapping the tape, snug up the ring with a hose clamp.



After the glue sets, flatten one side of the ring by sanding with 60 grit sandpaper mounted on a sheet of granite or truing up on the lathe. Mark the middle of a couple of segments for easy alignment with the previous layer. Glue to the previous layer using a cone that can be mounted on the tailstock for concentric alignment of rings as well as providing pressure.

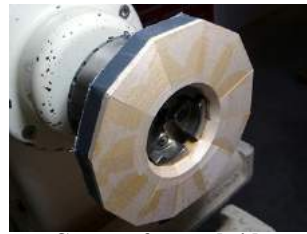




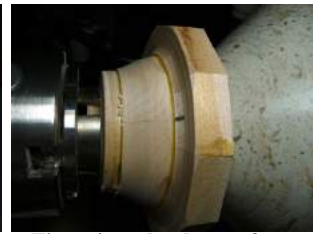
Ring mounted for truing up one side



One side of ring trued up and middle of segments marked

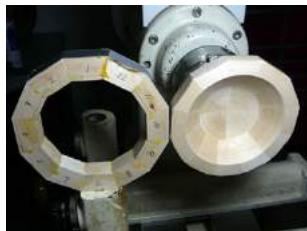


Center of second side rounded for alignment



First ring glued onto foot, pencil mark/seam lined up

True up the face and one side of the next ring and glue the new layer to the previous layer, again using the cone to center and provide pressure. Repeat the process until all the layers are glued together. Finish-turn the bowl after the glue is set. Sand to 320 grit on the lathe and apply finish.



Cut away the inside of the smaller ring - easier to true



Glue all rings together concentrically



Finish-turn the outside and inside



Completed project

#### References:

- Brown, E. E. and Brown, C., *Polychromatic Assembly for Woodturning*, 113 pp., Linden Publishing, 1982.  
Hampton, R., *Segmented Turning, A Complete Guide*, 151 pp., GMC Publications, 2003.  
Nish, D., *Woodturning with Ray Allen*, 137 pp., Fox Chapel Publishing, 2004.  
Tibbetts, M. J., *The Art of Segmented Woodturning: A Step-by-Step Guide*, 184 pp., Linden Publishing, 2004.  
Smith, W., *Segmented Wood Turning*, 64 pp., Schiffer Books, 2007.  
Keeling, D., *Segmented Turning: Design, Techniques, Projects*, 182 pp., Tauton Press, 2012.

#### Websites:

- <http://www.segmentedturning.com/>, Bill Kandler  
<http://www.bowlkitco.com/bowl-plans>, Bud Latven  
<http://www.turnedwood.com/>, Kevin Neeley  
<http://www.curttheobald.com/>, Curt Theobald  
<http://www.tahoeturner.com/>, Malcolm Tibbetts  
<http://www.segmentedwoodturners.org/>, Segmented Woodturners chapter of AAW



## TURNING 27

WITH JIM CREEL

[<Link to List of Demonstrations>](#)

### It's What's on Top Focus on Finials

There is nothing that will adorn a lidded vessel more than a finely turned finial. You can see that for yourself by closely studying the gallery pieces displayed at symposiums, in galleries, and magazines.



Having a positive interest in learning to turn thin delicate finials, I took a hands on class with Cindy Drozda. She was very kind to me on critiquing my gallery pieces brought to the class. To say the least, I needed help and being left handed didn't help. I was breaking every finial I tried to make in the class. By the end of the class, and a stubby fat toothpick as a finial on my lidded box; Cindy said, maybe you should learn to turn right handed. But I took what she showed me and practiced over and over. And that's what this demo is all about. How and what to practice to be able to turn a thin elegant finial.

Now just what is a finial? A dictionary definition, (among other definitions) describes a finial as an ornamental terminating point. This definition seemed more fitting for our particular needs.

## 27<sup>TH</sup> SWAT SYMPOSIUM

When deciding the size and shape of the finial I'm placing on a designated piece, I want to take into account the overall appearance when finished. Most turners when making bowls, hollow vessels and lidded boxes, use the golden mean ratio to their turnings. This 1.618 to 1 ratio is all around us in nature and has been applied to many objects for thousands of years. The reason for this, is that it is pleasing to the eye. You can also use the rule of thirds to simplify these measurements. My preference for applying a finial size to a vessel is to make the finial height the same as the width of the vessel it is going to be placed on. To do this, I measure height and width of the vessel. Then on to the sketch pad, drawing the completed piece with different finial designs and heights along with the size and height of the base or foot. Also in designing the finial, I once again apply the golden mean, or simply the rule of thirds, to all the elements of the finial. Sometimes with a very large vessel, the finial would be extremely high, so, I go back to the thirds idea and make the finial one third or two thirds the vessel width. To come more closely in finding the appropriate size finial, from dowel material, I have finials of several different heights and configurations that I can actually place on the vessel. This gives me the correct perspective before turning a finial out of an expensive exotic wood. When I have determined the size, I try to imagine a tall thin tapered spire rising from the bottom of the base through the vessel and ending at the finial tip. Each cove that is cut into my base and finial is cut equal to the diameter of the spire as it continues through the base and finial. I feel that this gives a look of symmetry and balance. It's like seeing the graduating spire going through the entire piece if held against a light and looking at the silhouette of the whole completed piece. Now, this is only one example of the hundreds of combinations to be had to create a well balanced work.



### MY TOOLS FOR FINIAL WORK

1. 1/4" bowl gouge for removing bulk of wood
2. 1/2" Thompson spindle gouge
3. 3/8" Thompson spindle gouge for fine details
4. 3/8" Carter & Son low profile spindle gouge
5. Drozda vortex tool for very tight and tiny cuts
6. Thin 1/16 th" Carter & Sons parting tool
7. Hollow punch set

Both my spindle gouges have approximate 30 degree bevels. I grind off most of the bevel going up the shaft leaving about 1/32" bevel to the cutting edge. This allows for deep thin clean cuts. The reason I use the Drozda tools is that they come ready to use, ground and sharpened. And I like them.

The 1/4" bowl gouge is used to remove the bulk of the wood which saves the sharp edge of my gouges. It's a lot easier to sharpen the bowl gouge than it is to sharpen the spindle gouge reproducing the same profile over and over.

The material I use to practice is a 3/4" dowel purchased at hobby lobby. I think maybe its birch, but not sure. I have used oak dowel, but they can be iffy at 1/16" diameter. I go through the box of dowels and pick out the ones with long straight grain with very few terminating grain on the sides. I get six pieces from a 36" dowel. This is great practice wood as it is not very forgiving and makes you concentrate on taking your time.

On the subject of wood. The woods that I used for the majority of my finials are African blackwood, rosewood, ebony, pecan, persimmon, and purple heart. I just try to match the finial wood color to the turning.



I like to use a collet chuck to hold the 3/4" dowel. I can drive the dowel into the chuck leaving only a few inches exposed for turning which gives great support for turning small work. As I use the wood, I can loosen the collet and with a knock out tool, tap out some more wood.

Practice exercises are necessary to produce perfection. Where have I heard that before? Your parents, your teachers, your wives told you, and you probably have told your kids. Practice makes perfect.

The first practice exercise is to make a 1/16" dowel out of a 3/4" dowel, or commonly known as a toothpick. Because, because the size of the finial may be the size of a toothpick. Don't just turn one and say, OH I HAVE THIS. Make enough to gain the confidence that when this is a piece of expensive ebony that you can turn the finial without concern. When making this small diameter piece, it will be necessary to support the wood with your fingers to prevent snapping.

The next practice is to turn small round balls. Round ball after round ball. Make a rosery. If you make enough balls for a rosery, you've got this step down.

Now turn an olive on a toothpick. Do enough to fill a martini glass. Color one side red just for fun. The only difference from an olive on a toothpick and a finial, is the ball will taper out to make the finial. Practice that too.

Next, let's work on turning small disks. Turn tiny disks, small disks, medium disks and large disks. Turn several of each in a row, then alternate diameter small to large, large to small; just make a bunch of each. Once you have practiced making the disks, let's now make disks with nice sharp edges. What's that? Who said 100 grit? Nah! We're going to use our spindle gouge. To get that sharp edge, we need something for the gouge to start the cut on. Make a small flat on the disks edge with the gouge on the disk edge that will allow enough room to make that final cut and leave a sharp edge on the disk.

## **27<sup>TH</sup> SWAT SYMPOSIUM**

Now lets do some spindle work. We are going to turn some beads and coves. Some thin beads and tight coves and some long tapered beads and long coves. That's all a finial is: small spindle work. We will only be removing enough wood as we go to complete and sand each step.

While finials come in all sizes and shapes, you must determine what the end use will be of the final project. Most times, the tall thin elegant finial is not practical for the use on a vessel that is to be used on a daily basis. Here you must consider another style finial that can handle the rigors of multiple handlings over a long time period. Let's take for example an item that will be used in the kitchen, like a salt and box, sugar bowl, or spice box. On these items, I would have to put a round ball on top. This ball (finial) can be used a very long time, there is no fear of breaking and is easy to grasp. To make a perfect round ball, whether very tiny at the top of a tall slender finial or on top of a utility vessel, I use a hollow punch. First a round ball is roughed out, then the hollow punch is used to create the perfect sphere. A punch set with multiple sizes can be purchased at harbor freight for under ten bucks. I create a burr on the inside of the punch by running a bastard cut file flat across the opening while rotating the punch in a circular motion. Because of the steel used, it is necessary to do this often to maintain the burr. With the lathe spinning the ball, I bring the punch up to the wood and move it side to side and up and down to form the perfect sphere.

Sandpaper is the final cutting and shaping tool and must be done at each step through all your grades of paper. Once you have finished a step, it is not likely you will be successful going back and sanding as the piece is thin and delicate and breakage is probable. I read that somewhere.

Take your time, practice diligently and take your time, practice diligently and take your time and.....Before you know it, you will be turning beautiful delicate finials.



# TURNING 27

WITH JERRY DE GROOT

[<Link to List of Demonstrations>](#)

## Hollow Christmas Ornament



### Tools

Any tool that you prefer can be used to shape the outside of the ornament. It's the inside removing tools that are different, since their homemade. I use three different tools; all made with 3/8 cold roll steel as shafts.

Note: do not use square stock for the shafts of the cutters. If square shaft touches the edge of a 5/8" hole, it is now 7/8" or greater. Even with the round shaft, try not to touch the edge of the hole as it will worry a larger hole!

The tool on the left is drilled out to a 1/8" hole, the cutting part comes from metal turning. It is a 1/4 tool that comes about 4 inches long. This cannot be cut by any means; it must be ground in two, thus giving you two cutting tools. Grind the shape you prefer, be aware that this tool is very aggressive. I use epoxy to hold the tool in place and when it wears away, just heat it, remove and place in the new tool. Use this tool to rough out the inside of the ornament.

The second tool, the 3/8 cold roll steel has been filed to a flat station on the end of the rod. This gives a solid base for the round carbide cutter to be secured to. The hole drilled and tapped must match the screw that comes with the round cutter bit used. The shaft is bent without heat to give the goose neck shape. My goose neck is somewhat offset to the left and required a lot of hand/arm pressure to hold it steady when turning. Attached to the shaft is the strange looking arrangement of aluminum blocks. This is James Johnson's idea and it works great, relieving the hand/arm tension in turning. It is secured to my shaft in such a manner that the cutter is not a scrapper but by changing the angle it becomes a shearer thus cutting more smoothly and is quite aggressive. This tool is used to hollow out the ornament, it may not be able to reach all the way to the back.

The third tool has been filed flat, is drilled and tapped to fit the screw of the round carbide cutter. Its purpose is to reach all the way to the back of the ornament and remove desired wood.



## THE ORNAMENT

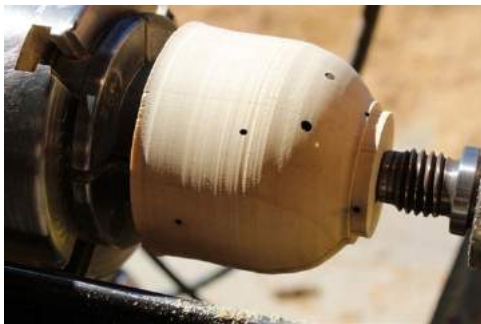
Any type of wood can be used. I prefer Box Elder, but I have turned mesquite, walnut, maple, oak, and even plywood. Plywood certainly is not my favorite.



I like a 3 x 3 x 3 block of wood, but smaller can also be used as can larger.

I use a pressure hold. You can measure for the center of the block by drawing lines from opposite corners, if you wish. I use an awl and guess at the center and its close enough for me.

Turn the block round, then cut a tendon that will fit your chuck.



Start turning the right half of the ball, stopping to leave a small shoulder at the tendon. Then turn the left side of the ball, down to where you feel comfortable without touching the chuck.

Sand to your smoothness desired, I seldom go beyond 240 grit. This is because I apply a sanding sealer which is sanded with worn out 240 grit sanding paper.

At this point if I intend to add any texture and or color, it's time to do that. I have a three sided very pointed, sharp tool and at this point I cut a very light groove in the ball. This allows the use of a wire of some sort to be applied to the grooves cut and with higher rpm's, a black line is developed.



The wire used can be any wired desired. I've used bailing wire, piano wire, guitar string wire. The larger the diameter of the wire, the heavier the black line will be developed. The thinner the wire the more dainty black line will develop.

The ornament has a 5/8" opening on one end and a 3/8" opening on the opposite end. It's time to drill a 5/8" hole. I use foresters bit because is drills a flat bottom hole.

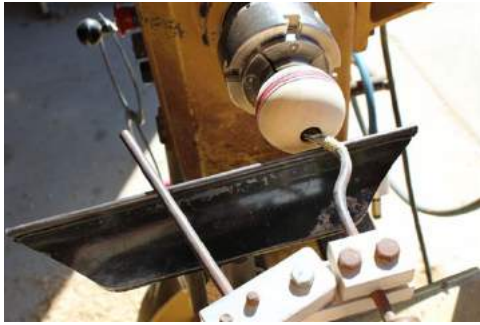


I hold the bit alongside the ornament and determine how deep I want to drill. Place a white chalk mark on the shaft of the bit and drill till the chalk mark is about ready to enter the ornament. Note, the foresters bit is made with no set, the walls of the bit rub on the walls of the wood just drilled, so heat builds up very fast, so drill at a lower speed.

Use the tool on the left of photo to "hog" out most of the wood. You will need air pressure handy to remove the chips inside the ornament. You are removing compressed wood into a limited space that fills up very quickly. If you find you've lost control of the tool, its jumping around out of control, you'll discover that it's time to remove the chips via air pressure.



You are turning blind, brail; you cannot see where you are inside the ornament. Turn a bit, and measure the



wall thickness to see where you are. I try to leave a 1/16 or 1/8 inch wall thickness. I turn about 1500 rpm, faster and I find the thinner the wall thickness the more flexible the wall, then add in the centrifugal force of higher rpms, and quickly it falls apart.



When you feel you have removed enough with the first tool, you can go to the second tool, the goose neck. You will notice that there is a strange assembly of aluminum blocks attached the shaft of the tool. This is James Johnson's creation and it's great. Without this addition the bit is offset to the left of center, thus when turning there is pressure to spin the tool counterclockwise. James gadget takes the pressure away from your hands and arms. I have turned my tool clockwise a little and now it's searing instead of scraping. This tool can be quite aggressive, so light passes are all that is needed when using it.



When you have reached the wall thickness that you desire, and you can not quite reach to the back of the ornament, it's time to bring in the third tool. This one is used to finish removing the wood from the back wall of the ornament. I do keep a small flashlight handy to see what the inside looks like.

With the ornament still held in the chuck, drill a 3/8 hole through the back of the ornament.



I've turned a bun with a 5/8 tendon. Remove the ornament and turn it around so that the 5/8 hole fits the 5/8 tendon. In the 3/8 hole place a larger live center.



Now finish turning the shape of the ornament and cut to remove. The ornament has a 5/8" opening on one end and a 3/8" opening on the opposite end.

### Acknowledgement

I want to give recognition to the following persons, who without their encouragement and guidance I would not be the turner I now am.

KATHY HAMPTON

JAMES JOHNSON

KEN MORTON

JOHNNY TOLLY



**THE FINIAL**

Any wood can be used for the finial, but straight grain wood I find works best. I usually use maple, its white in color, and is a common wood all lumber yards carry. I buy rough sawn boards, 4 quarter in thickness. Rip the boards into 1 inch stock, so it's 1X1" and cut to 8" length.



Turn the blank round keeping as much thickness as possible.

Turn a 5/8" tendon.

With a quarter inch detail gouge, remove end grain wood from one inch diameter down to the 5/8 " tendon. This is going to set on the ball ornament and must be undercut to make a good fit to the ornament.



To make this cut, the gouge must be pointing in the direction you want to cut. It must be in neutral! When in neutral the gouge will not jump left or right. A tiny indention is made, now you have a shoulder, place the bevel of the gouge in that shoulder and start pushing in, turning the gouge counter-clock wise. One pass is all that is needed and it's cut down to the 5/8 tendon.



Remove stock from the one inch rod, but leave enough wood on the end to form the bell housing that fits to the ornament. I turn the 1" stock down to about 3/8" diameter. Here you start forming what you want your finial to look like. The choice is yours. I always have a small arrow head on the end of the finial and when all is sanded enough to please you, the finial can be removed by dissecting at point of the arrow head.

**THE ORNAMENT CAP**



Turn the blank round keeping as much thickness as possible.

Turn a 3/8" tendon.

With a quarter inch detail gouge, remove end grain wood from one inch diameter down to the 3/8 " tendon. This is going to set on the ball ornament and must be undercut to make a good fit to the ornament.



Remove stock from the one inch rod, but leave enough wood on the end to form the bell housing that fits to the ornament. I turn the 1" stock down to about 3/8" diameter. Here you start forming what you want your cap to look like. The choice is yours. I always have a small ball and use an eye screw to attach a ribbon hanger.



## TURNING 27

WITH CINDY DROZDA

[<Link to List of Demonstrations>](#)

### Multi-axis Hollow Form

This unique project takes a look at “making the inside bigger than the outside”. The result is a triangular vessel with “windows”. Multi-axis layout and turning, and my reverse chucking methods, are part of this presentation.



[<Link to List of Demonstrations>](#)



## Pie Crust Bowl

### Dimensions

The demo will use a blank that is 8" dia. X 3" thick. This will be deep enough for a bowl with carved feet which goes nicely with the carved edge. The concept works for any diameter bowl although I suggest that a very deep bowl is not a good choice for your first pie-crust carving.

### Wood

Choose a wood that is strong enough to be durable after carving (there will be some cross grain areas that would be fragile if the wood is very soft). Soft maple and Cherry are easy to carve and strong enough for this. Many other woods are also suitable.

### Number of Flutes

The more flutes you make, the smaller the flutes should be to look right. I suggest a minimum of 1 and a maximum of 2 flutes for each inch of bowl diameter. This will allow good sized flutes that are not difficult to carve. You can have an even or odd number of flutes. It is easier to lay out if you choose a number such that you can index twice that many spaces (one for peak of each flute and one for the valley).

### Tenon or Recess?

Either can be used but there are reasons to choose one over the other.

- If you are turning a "rough-out" to be turned again after it dries, a tenon is much easier to true up after drying. (be sure to make it big enough that it can be trued up)
- For dry blanks that are barely thick enough; a recess can become the inside of the "foot" without wasting thickness IF the chuck is small enough.
- For dry blanks that are barely thick enough; a tenon can become the outside of the "foot" IF the chuck is big enough.
- If you have plenty of thickness, a tenon, recess or face-plate can be used (your choice)

The outside of the bowl should curve outward at the top (see sketch on next page).

The inside can be a simple curve or can be slightly undercut. The top should be thick enough for the flutes and bowl thickness. The carving is only around the top edge, so make the thickness below the carved area evenly thin (1/4" for the 8" demo bowl).

I recommend a slightly convex top edge, flat and sloped away from the bowl is also OK, concave is NOT recommended.

While the bowl is spinning, draw two lines on the top edge to mark where the carving ends. These represent the flute thickness which should be the same as the bowl thickness. Shown on drawing as dotted white lines.

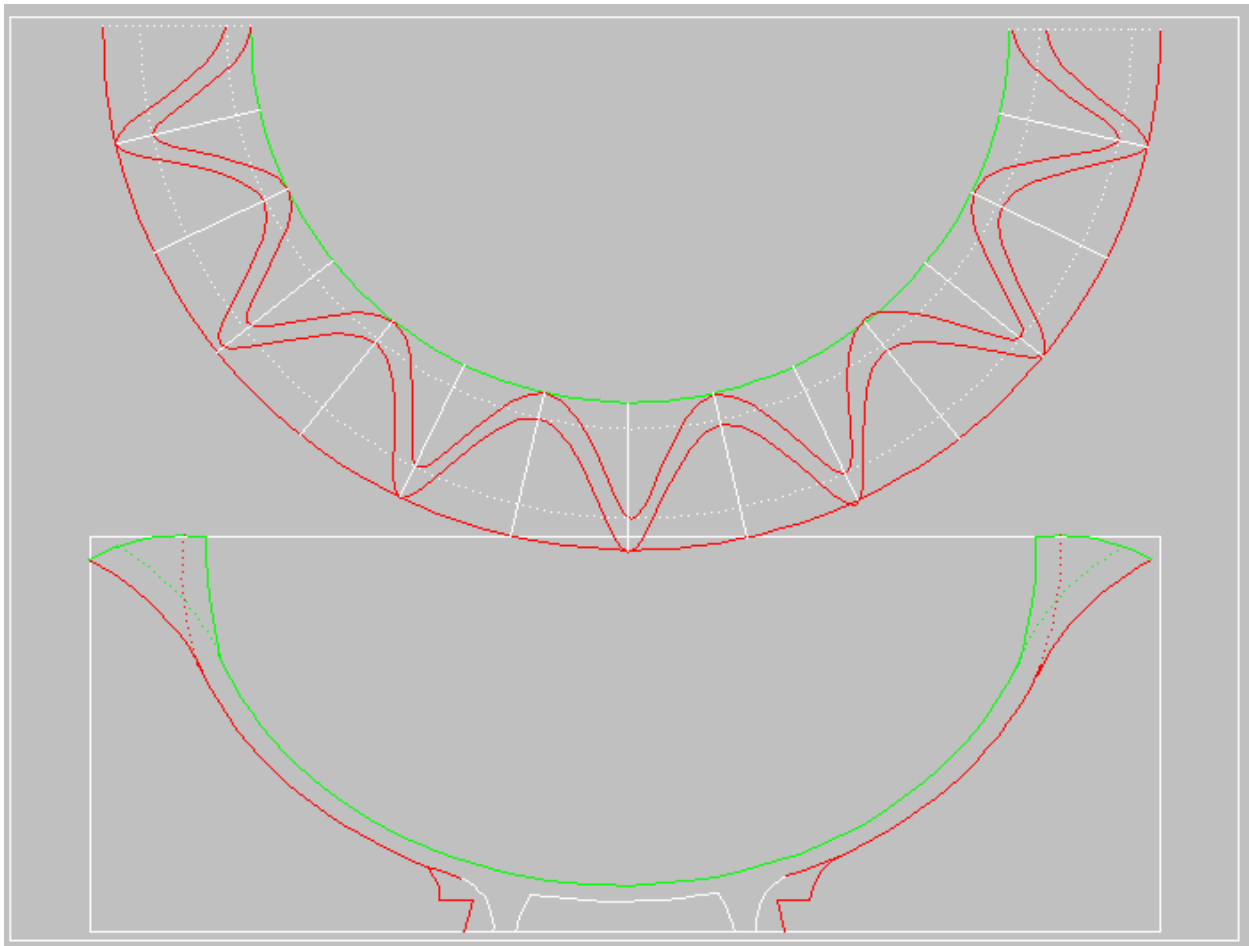
Divide the top edge into an even number of segments with each segment being about as long as the top edge is wide. There will be **TWO** segments for **each** flute.

Draw curved lines representing what will be the edge once the carving is done. Shown as red lines on drawing.

Carve the flutes with your choice of tooling. Use a fast cutting tool for roughing out the shape (stay away from the lines while roughing) and smooth up with something easy to control. Some hand sanding will be necessary. I recommend rotary cutters for roughing out and rasps for blending before sanding. If you have a flex shaft system, a ball shaped Sabretooth cutter works great. If you don't have power carving equipment, consider using a round rasp. Coarse sandpaper wrapped around a dowel rod is a good substitute for a fine rasp. If you are skilled with chisels and carving gouges, use them but this is not a good first project for hand tool carving.

In the drawing below note:

- The tenon is large enough that it will be converted to the foot of the bowl.
- The thick area that will be carved tapers into the bowl walls with a concave shape.
- The dotted white line is the thickness of the flutes.
- The shape of the flutes (red) is not great, they are exaggerated in an attempt to make the lines clear.





# TURNING 27

WITH KEITH GOTSCHALL

[<Link to List of Demonstrations>](#)

## Off-Center Platter

*Please Note: Most of the material in this handout appeared originally in the Journal of the American Woodturning Association, Vol.22.2.*



To make an off-center platter, start with a blank of wood that is sound, avoiding cracked or flawed material. I chose maple for this project as it shows the dark detail lines well, but any wood will work. The dimensions are sort of variable, depending on one's lathe. When mounting the blank off-center, err on the side of caution. An 11 inch blank mounted an inch off-center might be more than a lathe with a 12 inch throw can handle. Mount your blank on a screw chuck. Use spacers to reduce the length of the protruding screw so that about 3/4" is firmly seated in the wood. Note in picture #1 that the hole is in the center of the blank. I would normally use the tailstock for safety at every step possible, but have not used it in these pictures for clarity.

Once mounted, bring the blank into round and trim what will be the bottom evenly. With some sort of measuring device, such as Vernier calipers, mark the dimensions of your chucks jaws in the center of the platter. Make a recess to expand into, not too deep; 1/8 to 3/16 inch is plenty. Don't bother with any decoration yet, as this recess will be trimmed off later. Make sure though that it is a nice flat recess with crisp sharp corners for the jaws to seat against. At this point you will also want to establish the edge of the platter. Don't define the shape of the "bowl" of the piece yet, but just give yourself a nice rim detail that is rounded. Also, don't make the rim too thin, for now shoot for about 3/8 inch. See picture #2.



Remove the platter from the screw and mount it on a scroll chuck, expanding into the recess just cut. Clean the face off,

bring it into true and make a clean cut across the platter. Make sure this is a flat face, so check with a straight edge. See photo #3. If one does not keep this flat, then the platter will have a rim that is thick

on one side and thin on the other. (Something to play with later perhaps, but for now keep it simple.) For decoration, cut in some beads on the top face. I always do this by eye, but you can measure if you care to. I chose to have basically even beads going from the rim to almost the center. I know some of these beads will be cut away eventually, but would rather have too many than not enough. Alternately, you could have your beads changing dimension, or have



only a thinner band of them. Cutting all the beads on the right side, and then cutting the left on the way back will speed this operation up. Photo #4 shows cutting back the left side of the beads, using a 3/8" spindle gouge. Start at the top of the bead with bevel rubbing, and then roll the tool while lifting the handle. The flute should be closed (at 3 or 9 o'clock position) at the end of the cut as shown in the photo. Once your happy with the beads, sand the top of the platter. It is impossible to sand once out of round, so take it to your final grit. Also sand the rounded edge, as this is your last opportunity here.



As another design detail you can accentuate the beads with color. Take a thin wedge of dark wood and push it into the valleys between the beads. See photo #5. Most of the exotic woods will make a nicely defined dark line as they burn into the spinning wood. Remove the platter from the chuck and drill a new hole for the screw chuck. Don't go crazy here; an inch off-center will make a dramatic difference. See photo #6. Once mounted on the screw, bring up your tailstock again for safety and put the lathe speed down before turning on. Electronic variable speed control is a real help here as you can raise the speed to just under the point of vibration. The platter will be making a blurred rotation once spinning, be careful to stay away from the outside edge. Carefully start to remove material from the blurred edge. This can be safely done by working the outside edge, cutting in steps toward the solid area in the center. See photo #7. By using a 3/8" bowl gouge on it's side and making pull cuts, you can reduce the amount of off-center wood going around, taking weight away from the platter rim and reducing vibration further.



Work in stages, cutting up to the bottom of your already formed rim. Stop the lathe and check your progress, this will help you understand what is happening during this off-center process. See photo #8. You will also need to remove the original recess, and cut a new one. See photo #9 and #10. Once the bottom is clear of the old mounting, mark and cut a new recess and clean up the bottom of the platter.

## 27<sup>TH</sup> SWAT SYMPOSIUM

Photo #11 shows the making of details in the already cut recess. This will be the final bottom of the platter. Since the rim will over hang on one side, make the platter bottom on the bigger side. If you make it too small and delicate then the weight of the rim will make it tip over.

Continue to thin out the rim and shape the “bowl” of the platter. See photo #12. Make a clean even cut to the underside of your platters rim. The reason for establishing a thicker rim edge is so that this over hanging rim won't be flexible. Making a thinner rim is possible, but once it starts flexing it becomes very difficult. Be careful that it is cut parallel to the top face, this also affects how the entire rim will look. Once you are happy with the underside, sand the bowl section and what you can get to of the rim. See photo #13. You may find it easier to sand the underside of the rim with the lathe stopped.



Now that your platter is finished on one side it is time to turn it around once more and mount with an expanding chuck seated into the newly cut recess. Carefully start to hollow out the bowl section. See photo #14. All though it looks weird, photo #15 shows how the second hole is now center. Continue with the hollowing.



Photo #16 shows the 3/8 inch bowl gouge being used to hollow out the interior of the platter. To start the cut, the flute is at 3 o'clock, and the bevel is directly perpendicular to the face of the rim. See photo #17. Taking small bites, it is quite easy to cut through the uneven, spinning, beads. Once into the solid wood, rotate the tool flute up to make a more efficient cut, and ride the bevel toward the bottom of the bowl. Keep an eye on the outside shape, aiming for a reasonable wall thickness, neither too thin nor too thick. Cut the interior of the bowl deeper, remembering that you are chucked on a recess and you don't want to cut through the bottom. Once happy with wall thickness and depth, sand the interior of the bowl. See photo #18. When you are done with final sanding, finish with penetrating oil off the lathe.



There are lots of things you can change slightly to make big changes in the design of this project. Varying the amount of offset, the size of platter, depth of bowl, or even changing the amount of decoration will make very different looking projects while using the same techniques. This is certainly only one of many ways to turn off-center; I hope you enjoy your experiments. Be safe.





## TURNING 27

WITH KEITH GOTTSCHALL

[<Link to List of Demonstrations>](#)

### 3 Legged Stool

In this demo, a discussion of spindle replication will make the design and layout of elements easier for anyone. Design considerations, simple hole drilling jigs, production methodology will be covered as well as the basic bead-cove-straight cuts that make up all of turning. Though speed is not an issue everyone is worried about, there will be a timed element to making the legs.

#### Material used:

- 12" diameter disc, 2 inches thick  
Sugar pine (traditional) or similar, options vary
- 3 Legs, 2x2x14", poplar or similar

#### Tools used:

- 1" Spindle roughing gouge
- Parting tool
- Calipers
- 1" Skew
- 3/8 Spindle gouge

Layout and drill holes for legs, 1" hole, use a 1.5" block under seat to get correct angle on drill press. Mark legs for center on both ends.

Mount seat on lathe by pushing with tailstock, make shallow recess. Remount onto recess and make another recess on top of seat. Turn blank around and remount on second recess. Turn sides, decorate underside, re-true recess. Sand. Remount on underside recess and turn away a dish for top, decorate and sand.

Mount leg between centers, turn round. Mark from template, use parting tool and calipers to set details. Turn tenon carefully to 1", complete turning details to match template. Sand. Continue on other two legs. Check fit into mortise holes, glue legs in. Finish as desired.





## TURNING 27

WITH ASHLEY HARWOOD

[<Link to List of Demonstrations>](#)

### Rim and Foot Design on a Bowl

For this demonstration, I will begin with a short slide show featuring examples of different designs that can be executed completely on the lathe. I will turn the outside of a bowl using the Push-Cut method. I will show various design elements that can be added to the rim and/or foot of a bowl on the lathe. I will use a bowl gouge, vortex tool, and negative rake scrapers to add details to the bowl and will demonstrate sharpening of all of these tools. I will talk about design aesthetics, e.g., bowl shape and curve, proportion of the foot, creating rim and foot designs that work together. I will briefly address how to sand the bowl without dulling sharp details.



## TURNING 27

WITH ASHLEY HARWOOD

[<Link to List of Demonstrations>](#)

### Fine Spindle Turning

For this demonstration, I will show how I turn and assemble a sea urchin ornament with a fine ebony spindle. I begin by demonstrating all of the fundamental cuts of spindle turning on a larger piece of wood. I break down the actions of each hand and the way that my tool cuts in order to achieve a finish ready for 180 grit straight off of the tool. Next, I turn a fine ebony spindle using a half inch bowl gouge, a ¼ inch detail gouge, and a vortex tool.



## TURNING 27

WITH GEORGE HATFIELD

[<Link to List of Demonstrations>](#)

### Design and Usage of Woodturning Tools

The object of production turners is to turn as fast and efficiently as possible to leave a clean finish off the tool to reduce the time sandpapering, hence quicker turning, more money. The structure of the wood determines the most efficient way it can be cut. In a fundamental way, I believe it doesn't matter if the woodturner is a hobbyist turning 2-3 hours per week, or a full time professional, the material they are working and the things they are turning – whether it be chair, table, bed or cupboard legs, knobs or spindles – are the same. The size of lathe varies, but there is no reason why the cutting tools or techniques should.

Of course, the professionals should be a lot faster and more efficient, but I am sure the hobbyist enjoys the challenge of becoming more competent, and eventually will get far greater satisfaction from being able to make two turnings which are the same. This demonstration will be aimed at giving the beginner a sound understanding of the basics. It will also build on the turning procedures with illustrations and explanations. This is designed to allow the more competent turners to benefit by comparing notes.

Having watched professional woodturners from all over the world, I can assure you that while some may use differently shaped tools which require somewhat altered approaches, the underlying principles they use are always the same.

#### Wood Structure and Cutting Directions

A basic understanding of the material being worked is essential, as this governs the way it is best cut. Without getting too technical, wood, like all other members of the plant family, is made up of fibrous cells of varying shapes and complexities. A substance called lignin in the cell walls sets apart those plants which we describe as being 'woody'.

The lignin bonds the wood fibre and provides the rigidity which gives size and strength to such plants. This woody tissue forms a cellular structure of vertical vessels or pores. These vessels carry moisture and mineral salts up from the ground which is then transformed into sugars and starches by the process of photosynthesis. The sugars and starches (the food for the tree) are first stored, then used for growth in the formulation of new cells.

Food stored by the tree against future use is held in horizontal vein like configurations known as medullary rays, which radiate out from the middle of the tree. The vertical vessels and horizontal medullary rays are

entangled to form a basket-like framework of interwoven fibrous tubes (Figure 1).

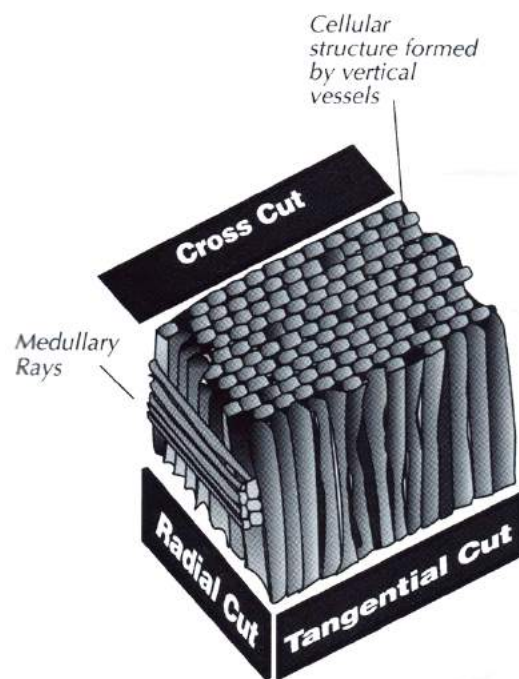


Figure 1. Wood structure

It is the cell structure that gives wood its strength and resilience, and also what we refer to as its 'grain'. Although this structure is made up of millions of cellular tube-like containers configured at right angles to each other, the predominant cells are the vertical vessels, and it is therefore these which form the grain direction (Figure 2).

This grain direction is evident in the way in which the cellular matter or tissues separate when the wood is split. The cutting of wood also uses a splitting action. When wood is cut, one side of the cut will be with the grain – leaving a smooth surface – and the other side will be against the grain – leaving a chipped surface (Figure 3).

By making the side of the cut which is going with the grain our 'job', and the side which is going against the grain the 'shavings' or waste, we will obtain the best finish on our work. Grain direction on the face of a piece of sawn timber can be identified visually – by the direction of the ends of the fibre – or physically – by dragging the tips of your fingers across its face.

If your fingers are going against the grain, you will feel the fibres sticking into your fingers (and possibly getting spinters!). If your fingers are going with the grain, the fibres will lay down and the surface will feel smooth. Figure 4 shows the grain going in one direction on the edge and face of a board. The direction of grain on the opposing edge and face of the wood will be in the opposite direction.

When cutting with the grain, the fibres being cut are supported by the fibres in front of the blade. When cutting against the grain, the fibres lift, separating the tissue and leaving crack-like gaps. Woodturning is different to all other forms of cutting wood in that when planing, carving or even sanding, only one surface is being worked at the one time.



Figure 2. End view of vertical vessels

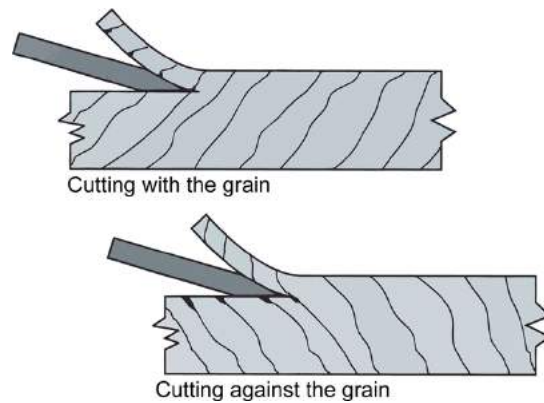


Figure 3. Cutting with the grain / cutting against the grain



Figure 4. Fibres show the grain direction (here the grain direction is to the right)

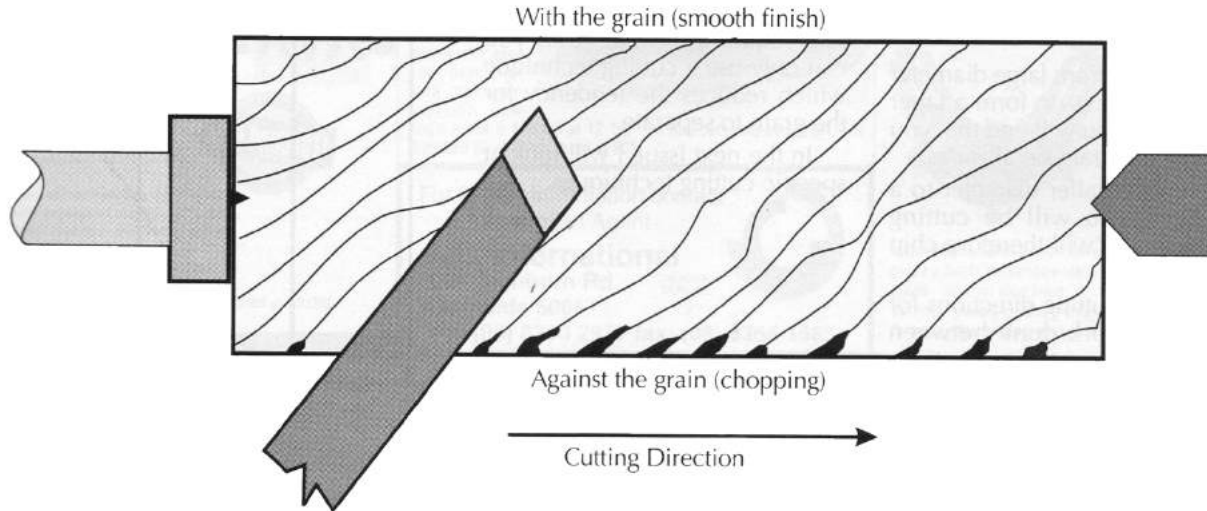


Figure 5. The result of the grain not being parallel to the axis

**Most Efficient Cuts**

Normally wood which is turned between centres or in a chuck (e.g., a goblet) has the grain running parallel to the axis, and work turned on the faceplate has the grain at right angles to the axis. In woodturning the cutting is made around the wood, cutting all faces in the one action.

Smoothing a cylinder with a skew chisel on between-centre work, with the grain not 100% parallel to the axis, will cause one side of the cylinder to be smooth – this is the side cut with the grain – and the other to have small chips – because it’s the side being cut against the grain (Figure 5).

However, cutting from large diameter to a smaller diameter – to form a taper or similar shape – you will find that you are cutting with the grain on all sides. Cutting from a smaller diameter to a larger diameter, you will be cutting against the grain and will therefore chip the fibres.

Figure 6 shows the cutting directions for detail shapes on work done between centres and Figure 7 the cutting directions for chuck work. Cutting directions for detail on faceplate work are also shown (Figure 8).

If you are unsure of the direction of cut you should use for your particular job, all you need do is to make a quick sketch of the shape you want to turn, draw in the grain direction, and the direction of cut will become evident. Occasionally you will find it impossible to cut with the grain, because of the configuration of the shape and the access of the tool required. In that case, you can only use a cutting technique which reduces the tendency for the grain to separate.

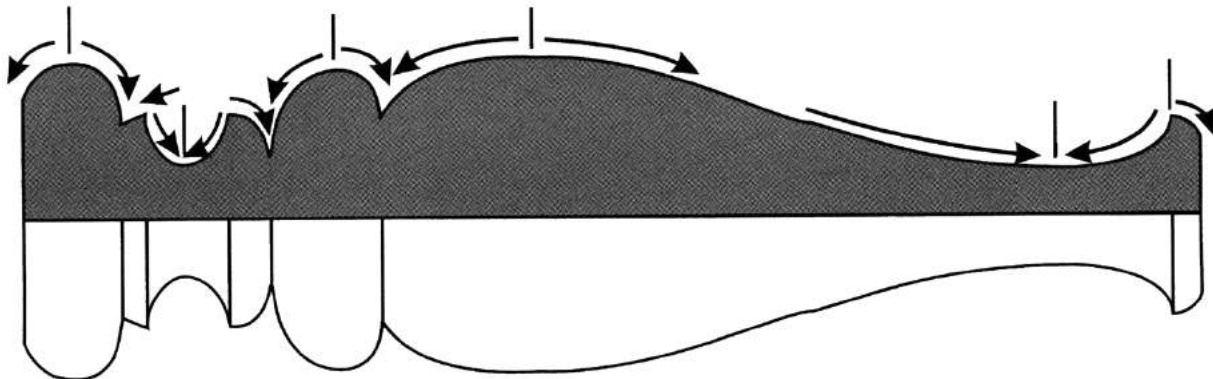


Figure 6. Cutting direction on between centre work

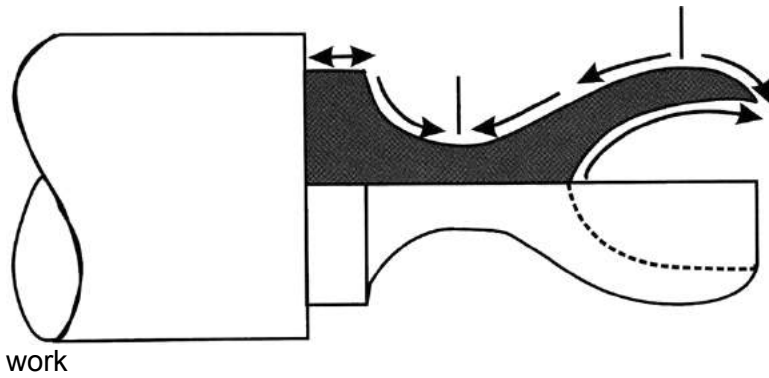


Figure 7. Cutting direction on chuck

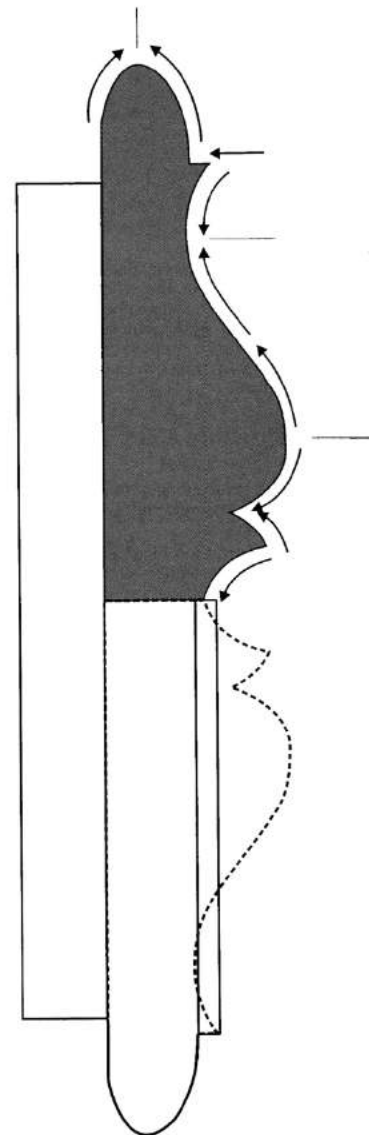


Figure 8. Cutting direction for faceplate work

### Choosing Tools

People who are just starting in the craft of woodturning often get terribly confused about which tools they will need to buy. The problem is that with limited turning skills, it is hard to select a set of tools from the large variety available. I have had enthusiastic students in their second or third attendance at the Lidcombe Technical College (Sydney), bring in and show me a brand new set of tools which has cost them anything up to \$300. I get embarrassed when I shake my head and say 'I wish you would have waited till after the lesson on tools'.

Here, I will give my recommendations and reasons for what I believe are the best tool shapes, size required, type of steel, and sharpening equipment and techniques.

First, let's look at the types of steel. The steel that is required for woodturning is a steel which can be quickly sharpened to a keen cutting edge, tough enough to retain the cutting edge for long periods, and able to withstand the heat caused by the friction of the revolving wood.

Thirty-five years ago when I started woodturning, the only woodturning tools commercially produced were made of carbon steel, the same as that used for cabinetmaker's chisels.

This steel can be sharpened to a keen edge and depending on the quality of the steel, will retain its cutting edge for varying periods. Its main problem is that carbon steel is not made to withstand excessive heat. It is ideal for hand chisels used by cabbies which are used on stationary wood. However, when introduced to excessive heat by the friction of the revolving wood (especially on face plate work), the cutting edge will turn blue and the edge will become as soft as butter and curl over.

Carbon steel was totally unacceptable to production woodturners in the trade, as they couldn't afford the time to be continuously sharpening their tools. As woodturners worked side-by-side with wood machinists, they obviously saw the High Speed Steel (HSS) used on moulding machines which could be sharpened to a keen edge and which stood up to the friction and percussion of spindle moulders, jointers, planers, etc. It is easy to buy long lengths of spindle moulder cutter steel (used on slotted collars) which is thick and varies in width – an ideal material for chisels.

The gouges were the problem. Since the number of production woodturners was very small, it was not an economical proposition for manufacturers to tool up and produce the small number of gouges required, so the woodturners had to have their gouges custom made. Square

sections of hardened HSS were hand ground to make detail gouges, i.e., fluted, rounded bottom, and tang.

To make roughing gouges, the HSS was bought in the annealed state, heated up and formed by a blacksmith to the required shape and then heat treated to about 65 Rockwell (hardness). I have had roughing gouges shaped out of old car springs approximately 50mm wide and 8 to 10mm thick. Providing they are properly heat treated, they make magnificent tools. This customization of tools and the use of higher priced steel, made HSS tools considerably more expensive than the carbon steel tools, but the superior durability of the cutting edge made the effort and expense worthwhile.

About fifteen years ago, the hobby wood turners started to come out of their closets and formed woodturning associations. Today, there are thousands of hobby turners in clubs all over Australia and New Zealand and probably just as many who dabble at home and prefer not to become organized.

Manufacturers have become aware that the hobby turners are producing the same work as the production woodturners, from the same woods (sometimes harder) and require the same tool. The large increase in potential numbers of woodturners has encouraged them to produce HSS tools to such an extent that it is now hard to buy carbon steel tools in Australia today (except, perhaps, at chain stores such as Big W).

HSS has the ability to be sharpened to a keen edge and then retain that edge when introduced to the heat generated by the friction of relatively high speed revolving wood. HSS can be identified by the colour of the grinding spark. A low quality or carbon steel will give a whitish to yellow coloured spark, whereas HSS will give an orange to red spark. Usually, the more red the better.

Just as wood comes in many forms from numerous species, HSS is manufactured to many formulas for a large variety of different uses. Because the grinding angle for woodturning tools is 25°, the HSS used for woodturning tools should be more tough than hard in structure, i.e., tungsten carbide as used on saw tips is too hard to be used to tip woodturning tools; it is too brittle and with 25° grinding angles, it will chip under the stress of woodturning.

Apart from the hardness arising from its intrinsic structure, HSS will also vary in hardness depending on its final heat treatment process. I have machine tested the hardness of all the manufactured HSS tools available to me and found the hardness varies from 57 to 65 Rockwell. I recommend tough HSS with a hardness of 64-65 Rockwell to be most suitable for general woodturning.

I trialed an imported HSS detail gouge made from a steel produced by a relatively new process for making HSS called particle metallurgy. The results were amazing. The cutting edge remained sharp for three times that of traditional HSS and was twice as easy to grind. Take a tip from me, with these kind of results, particle metallurgy HSS has got to be the steel for the future of woodturning.

### **The Skew Chisel**

The skew chisel is a tool which terrorizes the novice woodturner and commands respect, even from professional woodturners. It should be the most used tool in a woodturner's kit as it produces the best off-the-tool finish, but this is not always the case, since it is also the most unforgiving of woodturning tools. One small slip, or lack of concentration, and any woodturner will have that dreaded dig-in.

Woodturning books recommend numerous configurations for the skew chisel which must be very confusing to the beginner. The design of any tool is obviously governed by its usage, so I will focus on the design that was shown to me as an apprentice, and which I still use and recommend. I will also point out the usage of each feature of the design.



The common features depicted in Figure 9 are:

- Grinding Angle (25°).
- Cutting Edge (Straight to retain the intensity of the sharpness of the long and short point).
- Bevel (Hollow ground – to retain the same grinding angle and reduce the amount of steel removal when honing. To obtain a 25° grinding angle, the bevel should be approximately twice the thickness of the tool (Figure 10).
- Top Section (This part of the cutting edge is never used. If a cut is made in this area, the long point of the tool will be pulled into the job. DIG-IN! This happens because the tool is supported on the bottom edge and the higher you cut up the cutting edge, the more leverage or tool control you lose.)
- Thickness (A minimum of 6mm – 8mm is better – to obtain the necessary rigidity of the tool.)

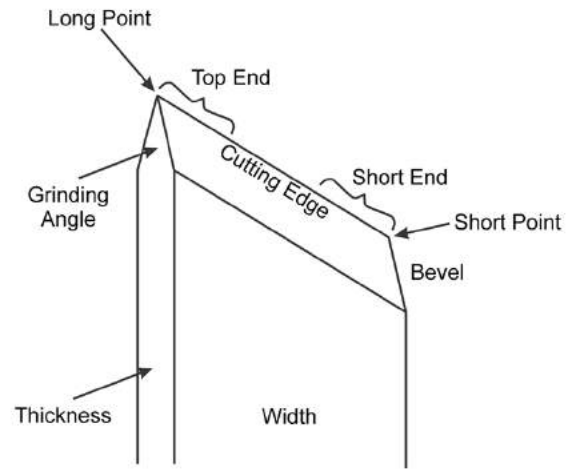


Figure 9. Common features

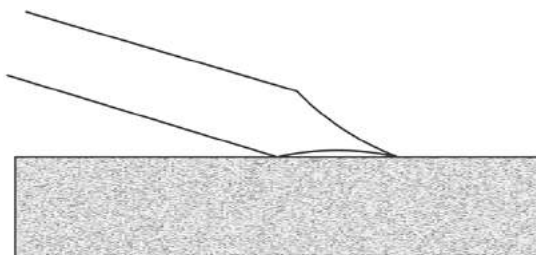


Figure 10. Bevel hollow ground

I divide the skew chisel into two categories. The first is the smoothing chisel, which is generally used for turning long plain shapes, and the second, the detail chisel which is used to turn all convex detail shapes. The design of these chisels differ slightly because of their different functions.

SMOOTHING CHISEL	
Feature	Usage
Bottom third of cutting edge	Used to cut long plain shapes. (Figure 11)
Long Point	Used to cut the shoulders of squares when turning a cylinder adjacent to a square. Used to train the end grain of a cylinder. Used to part off, or cut large vee cuts. (Figure 12)
Short Point	Used to cut into a sharp corner where a plain shape meets a square or mould. (Figure 13)
Angle of Skew	60° in use, the cutting edge is held at 45° to the axis of the wood; the tool is therefore held at 75° to the axis, this is more comfortable for the woodturner. This angle gives a relatively sharper long point for slicing, (i.e., vee cut, etc.) It also reduces the sharpness of the short point, however this does not hinder its function.
Width	38mm* to 50mm
*You may find it difficult to buy a skew chisel 38mm wide. If so, you can buy a heavy duty HSS scraper 38mm x 9mm in section and grind it to the required shape.	

When cutting with the bottom third, the long point is kept well away from the job. There is less chance of a din-in. The narrower the chisel or the larger the diameter of the wood, the closer the long point comes to the job.

DETAIL CHISEL	
Feature	Useage
Bottom third of cutting edge	Used to cut compound curves which are too tight to be cut with the Smoothing Chisel, or plain shapes which are too short to be with the Smoothing Chisel.
Long Point	Used to cut clearing cuts, parting off, vee cuts.
Short Point	Used to cut all detail convexed and straight work, i.e., rounding over heads, cutting fillets, cutting up to a sharp corner, etc. (Figure 14)
Angle of Skew	70-75° this angle increases the sharpness of the short point, which is the most used feature of the detail chisel.
Width	6mm to 25mm, increasing in 3mm increments

I have three detail chisels in my kit, one 19mm (personal choice) which I use almost exclusively and one 6mm which I use in areas where the 19mm won't fit. When turning large work, i.e., newel and veranda posts or any work larger than 125mm in diameter I use a detail chisel with a cross section of 12mm x 12mm, and a grinding angle of about 28°. This gives the extra rigidity necessary for the larger overhang required from the tool rest.

When using a skew chisel to turn a compound curve, you may find at the bottom of the curve that section you have just cut is being scared by the sharp corner of the chisel's bevel. This is easily overcome by using your slip stone to hone the sharp corner off. You will find the corner of the bevel still rubs against the job, but will not score it. The biggest tip I can give on the skew chisel is – concentration and practice.



Figure 11. Bottom third of cutting edge



Figure 12. Long point



Figure 13. Short point



Figure 14. Detail short point



## TURNING 27

WITH GEORGE HATFIELD

[<Link to List of Demonstrations>](#)

### Woodturning Design

One of the biggest problems for the new turner is finding a shape to turn – and then be able to reproduce the design.

In this demo I will discuss rules for designing woodturnings. I will explain and apply each rule.

With the aid of the audience we will design a coffee table leg, then turn the coffee table leg.

If time permits I will make a pencil gauge (or storey stick) and reproduce the coffee table leg.



## TURNING 27

WITH ZAC HIGGINS

[<Link to List of Demonstrations>](#)

### Cast Resin Pen Blanks

A discussion and demonstration of embedding objects and materials in resin to create mixed material pen blanks. Zac will discuss the basics of resin casting and embedding different types of materials and do a live demonstration making a batch of pen blanks with some fun materials.



## TURNING 27

WITH JEFF HORNUNG

[<Link to List of Demonstrations>](#)

### Air Brushing “High Desert”



This lesson will focus on the steps needed to use stencil sheets and airbrush to create a stunning look on a turned platter or bowl. Wood selection considerations are that it's light in color and the grain is simple. Maple, Ash, Poplar (not with green coloring) and Sycamore are excellent choices for airbrush projects. Single “A” grade Maple is my favorite.

**Equipment:** As with any project you can get as elaborate or simple as you'd like. Airbrush setups come in all shapes, sizes, options and price tags but you don't have to break the bank to do many of these techniques. In all honesty, this project can be done with an \$8 blow pipe if you're careful. For this project I will be using my dual action top feed airbrush with a mini compressor. I also have a moisture wicking regulator and can run my airbrush from a standard shop compressor. 25-30 psi is about what you need. For color, I recommend alcohol based dyes and prefer brighter colors.

We will be using a self adhesive product called Frisket. This is a low tack transparent film designed to be used as a stencil, and is available at most art stores or online. All of these techniques can be used with die cut stencils as well. I have more flexibility with the Frisket because I can use it for any design or pattern...including original work. For this project my primary stencil form is a scrapbooking stencil I liberated from my wife's stash. Please don't tell her.

#### Project prep

The first step in the project is to turn the back of your workpiece to completion. Use the wormscrew that came with your chuck to hold the blank on the lathe. Turn the back of your piece and create an appropriate sized recess to allow you to finish the back entirely before turning the front face and airbrushing. If the back side is complete we don't need to consider reverse chucking after finishing all of the airbrushing. Make note that this project is intended to be displayed on a stand or hung on the wall. Shape your project accordingly. For these projects I prefer to make a classic ogee shape. This fits well in a standard plate stand.

Turn, sand and finish the back to your preferred method. I have sanded to 320 and applied a gloss wax finish. The recess is properly sized to my 100mm jaws, and I have already created my maker's mark. The back is complete and ready to hold the workpiece as we progress.



Next, mount your project on the chuck, holding in expansion mode. Turn the bowl or platter shape you'd like. I prefer a rim that can be detailed later and a gentle curve inside. While you can airbrush in a deep bowl it can get a little tricky when using the roll Frisket material. Keep the shape of the surface you intend to airbrush "simple", at least when learning the techniques.



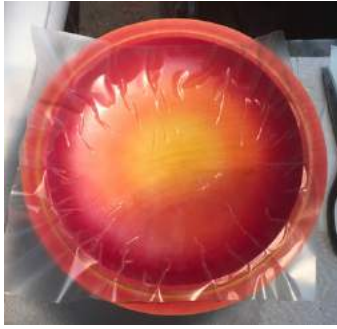
Here I have turned my piece, left a rim and sanded to 320. Do NOT apply any sealer or finishing products if you plan to airbrush...especially when using dyes. Wipe off or blow away any dust from the surface, back and sides of your workpiece. Clean off your lathe as well. The air from the airbrush can blow sanding dust back on to your project while you are painting. See if your workpiece gives you any interesting grain or natural coloration that can benefit your project. I used the darker colored area on mine to use as the "bottom" of the project where the mountains are painted.

### Airbrushing

Connect your airbrush to the compressor and power on. Protect your machine with at least paper towels on the lathe bed. I made a cardboard shield that slips over the lathe spindle to protect the headstock and electronics. I also do most of my spraying of this kind in the 4 o'clock position. This angle of spraying will keep you from getting dye on the back of your project. Set the speed of your lathe to about 200 rpm (if possible), shake the dye bottle to ensure proper mixing and load the airbrush with your lightest color. We are doing a basic sunburst gradient pattern and starting by laying the lightest color down first. Yellow is my lightest color...power on the lathe and spray the color on the entire surface of the workpiece. Dump out any remaining yellow and spray on a paper towel to empty the color cup. Shake the orange dye next and add some to the color cup. While the lathe continues to turn, you should spray from the outside edge to about 4/5 of the diameter. You will cover most of the yellow but should leave a strong yellow circle in the middle. This is where your sun is either rising or setting. Note: because we are going light color to darker colors we don't need to clean out the airbrush in between unless you need to pause the project or the airbrush seems to be clogging. Also, applying the colors in quick order will help with blending. You can wait until the previous color is dry but that isn't necessary. Next, repeat the above steps with red. This time you only want to spray about 3/5 in from the outside. Lastly, repeat again with magenta. This color only covers 2/5 of the surface. Once your sunburst pattern is complete, turn off the lathe and position the platter in the horizontal orientation you chose at the beginning.

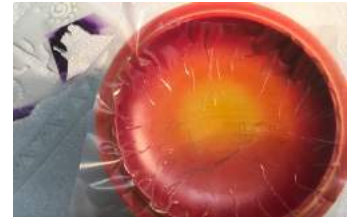
Continuing with the magenta, airbrush from left to right and color in the "ground" a bit more. This will break the concentric color rings and set the backdrop for our mountains. Let your dye dry for a few minutes at this point. While leaving the workpiece in the chuck, remove the chuck and platter from the lathe.





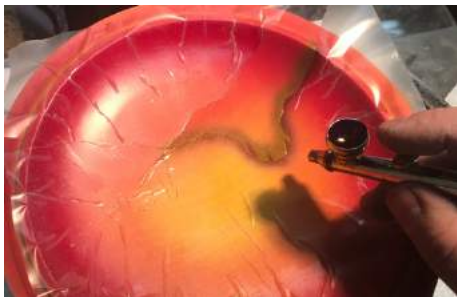
Cut a piece of Frisket material that is sized big enough to cover your workpiece and apply. Save the waxed backer paper, you will need it later. Because I'm only going to be working in small areas on the "bottom" of this platter as I progress I'm not as concerned about getting a good seal on the upper half.

Use your hard stencil as a template to draw in the layout you want. Because I want these to appear to have depth, I have made sure that one mountain overlaps the other.

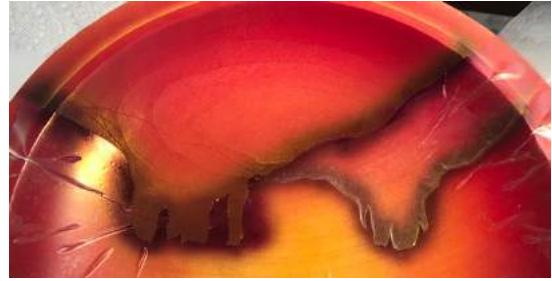
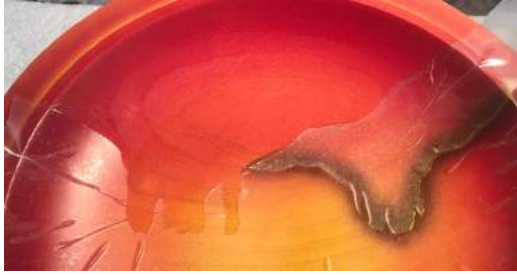


You'll need a very sharp craft type knife to cut along the lines you've drawn. Don't press so hard you slice into the wood - fibers can chip out and you can ruin your project. Remember, one of these mountains is in "front" of the other. Don't cut the side of the mountain that is supposed to be behind the other one. Make sure you cut all the way to the edge of the Frisket though as we will be lifting these cutouts in the next couple steps.

Carefully lift off the stencil covering the "back" mountain. Re-stick that stencil to the waxed backer paper from the original sheet you cut. Use your finger and make sure you have a good seal around the edges of the cutout.



Rotate the workpiece 180 degrees, load your color cup with purple and very carefully spray around the cut edge of the stencil opening. Only spray the "back mountain", don't spray along the other edge. Practice detail spraying with your airbrush on a piece of paper or paper towel first. When using a two stage airbrush like this, getting closer to the surface being painted will make your spray pattern much smaller.



Reapply the stencil cutout you had removed and set aside. Lining up 100% is not critical, get as close as you can and move on. Lift the second stencil cutout in total and set aside on the waxed backer paper, spray purple along the cut edges of the remaining material and this time continue spraying the entire front slope of that mountain. Replace the second stencil cutout and draw in a third mountain. Use your craft knife to cut round the tracing, lift the third cutout stencil and spray the edges with purple.

Carefully lift off all Frisket material at this time. You can use the very tip of your craft knife to lift the material if it sticks or tears. Inspect your work and remount the chuck assembly on the lathe. Set your lathe speed to 160 or so but don't turn it on yet. Spray a coat of gloss lacquer onto your piece and then turn on the lathe. Only spray the finish with the lathe off and make sure you set the speed to low before spraying. This will minimize the chance of runs in your spray finish. Once you have the airbrushed surface protected with lacquer and have let that dry, finish your rim as you desire. For this piece I like to add texture and paint with a metallic copper and patina technique. I also used a black ink brush pen to create a solid black border between the airbrush and rim design. Apply several more coats of gloss lacquer to finish your piece. Sign your work and display proudly.







## TURNING 27

WITH SAMMY LONG

[<Link to List of Demonstrations>](#)

### Creative Power Carving

For this demonstration, I will use a turned disc which is 5/16" – 3/8" wall thickness. When turning a hollow form for carving I use the same wall thickness. Once the hollow forms are dry, I lightly sand the outside to get a smooth surface on which to draw the design. For this demonstration, I will be using natural leaf designs.

Once I have cut out the stencils for the leaves, I trace them onto the hollow form or disc in pencil. After I have them arranged to my liking, I use a fine point sharpie to make the transfers permanent. With the sharpie, I shade the negative space indicating where the wood needs to be removed.

These pictures show a leaf that has been transferred onto the disc for carving.



With a Foredom or Master Carver, I use a 1/8" bit to drill holes around the outside edges of each leaf. Next I use a 1/8" diameter ceramic tile cutter to connect each drilled hole to remove each section between the leaves to create the negative space.



Using my detail carver, RAM or Mater Carver Micropro, and Mini Stump Cutters, I clean up the edges of the leaves.

The round Saburr Tooth Bur is used in the next step. This allows me to add the undulations onto the leaf.



I begin carving the details in the leaf. Using a Round Stump Cutter, I can define the shape and get a cleaner surface on the wood as I add the details.

I carve each leaf using the same process, making each unique, but adding the same general details. It is a slow but rewarding process.

Once each leaf is carved, I then use the Stump Cutters and the Mini Stump Cutters to remove the thick, square edges from the back edge of each leaf. This also removes all shadow lines that also need to be removed. Once this is done, I use the Round Diamond Burs to clean and smooth out any scratches on each leaf. I use the Pointed Diamond burs to smooth the back edge of each leaf.

Sanding is up to the artist.





[<Link to List of Demonstrations>](#)

## Natural Edge End Grain Bowl

In this bowl turning demonstration, I'll discuss a couple of jigs for processing logs at the bandsaw. Then I'll demonstrate a couple of different methods of holding blanks on the lathe for traditional, natural edge and end grain bowls. I will also demonstrate different tools used to make essential cuts in the wood. I will demonstrate the turning of a natural edge end grain bowl using a hook tool and teardrop scraper for hollowing.



This kind of natural edge bowl really highlights the bark. The bowl above is about 5.5" tall and 5.5" wide. The walls are thick at about 1/2" and it is Maple. This might seem like a clunky form but with this shape and size I feel like it is highlighting the bark with the lichen and when you pick it up and notice the heft, the relation to the log is felt.

### Side Grain vs End Grain Natural Edge Bowls

So first why a natural edge? From a utilitarian point of view, a natural edge bowl does not make sense. However, the artist view will see the different textures, colors and shape of the natural edge bowl form. The two prominent orientations for woodturning are side grain and end grain. To get a natural edge for a side grain bowl is just a matter of utilizing a part of the circumference of a log but, an end grain natural edge bowl requires the whole circumference of the log. Therefore, the size of the log will dictate the width of an end grain natural edge bowl. Something to keep in mind when planning to turn an end grain natural edge bowl.

For hollowing, cutting side grain is much different than cutting end grain. One of the best tool to hollow cut end grain is a hook tool. The hook tool has a bevel but in an orientation that allows it to cut and hollow across the bottom and transition smoothly diagonally up along the long grain. A scraper is also useful in end grain hollowing.

### Log to blank

The first step is choosing your material. Choose a log that has a tight connection between the bark and the cambium layer. If the bark is peeling or loose it will not stay in place during turning. Typically, a fresh cut log is best. Choose a size suitable for your lathe and end goal.

For an end grain natural edge bowl, I typically will work a 4-6" diameter log. The length should be long enough for your vessel plus 2" for tenon and parting (waste) material. Larger logs can be used but I like these smaller sizes that fit within our living space. They are also easier to demonstrate the turning.

There are a couple of bandsaw jigs I use when milling logs and side grain bowl blanks. The first is a simple cross cut sled but I have added movable slanted fences to handle round logs. The second is a circle cutting jig for shape round bowl blanks. You can find plans for this jig here: <https://sawg.org.nz> then to 'Tips & jigs'.

### **Work holding on the lathe**

With side grain natural edge bowls, it is necessary to mount the bark side to the headstock drive center. This can be done with a spur center, faceplate or a screw chuck. Each of these three have significant disadvantages. The spur will tend to slip and then drill onto the bark; the faceplate is difficult to level and mount to the bark; the screw chuck will not be supported around the entire circumference of the chuck face. The Elio-DR Drive center is a perfect solution for all these problems

The Elio-DR Drive Center, which comes in three sizes, has three adjustable pins. The center pin is adjustable and can protrude about 1" from the face. The two spur pins on either side of the center pin are fully adjustable socket head screws that can protrude up to 5/8" from the face of the drive center. The adjustable machine screws make this ideal for use on logs and large spindles and bowl grain orientation, especially natural edge work where the driven face is uneven. Available at Woodturning Tool Store ([woodturningtoolstore.com](http://woodturningtoolstore.com)).

### **Natural Edge End Grain Bowl**

- Mount with Elio-DR
  - o Mount with the top at the headstock and the foot at the tailstock
  - o Use the Elio-DR with its adjustable length pins; pin protrusion – ensure the blank is not touching the faceplate and is only driven by the three pins
  - o Bring up tailstock and engage lightly and check how the log sides rotate in relation to each other
  - o Before turning lathe on turn speed to zero, then start lathe and then set lathe speed. – Get in this habit!!
- Roughing – remember this is end grain and requires slightly different technique
  - o Define the ends – use a parting tool to true up each end of the log section
  - o Bowl gouge with small trans axial biting cuts through bark
  - o Some balance – start at the tailstock end to remove bark and get to round; continue up the log towards the headstock but be sure to stop short of the top to leave bark around the entire perimeter of the log
- Begin rough shape
  - o Start to shape the bowl outside shape ensuring to leave the bark around the rim
  - o Preserve rim bark by taking light cuts with sharp tools (bowl gouge) from bark into the wood (i.e large diameter to small diameter).
  - o Start some shear scraping to refine bark transition
- Fixture cut – size and cut tenon; explain critical dim of tenon
  - o Use gouge, angled parting tool, skew, shaped scraper
  - o Critical facets of the tenon; critical diameter; dovetail jaws.
  - o Remember leave center nub!! Make the nub diameter small enough to fit inside chuck/jaw
- Reverse mount - chuck jaws with small gap
  - o Tighten chuck, rotate, tighten chuck, rotate, tighten chuck.
  - o in chuck – check concentricity with finger on tool rest; re-true if necessary
- Initial Shaping cuts – how to visualize and create a pleasing form.
  - o End grain orientation – cut large to small diameter; remove the high spots
  - o Use of small bowl gouge and spindle gouges; strive for pleasing form – no flats; gentle continuously changing radius curves

## 27<sup>TH</sup> SWAT SYMPOSIUM

- Cleanup prep
  - o Use thin CA glue to soak the cambium layer; If needed flood the bark with thin CA glue
  - o Wait for a good 20 – 30 minutes for CA to dry; do not spray with accelerator as this may cause the glue to turn white and brittle.
- Cleanup cuts
  - o Clean up cuts - sheer scrape and sheer cut; have a clean, bump free tool rest – clean it need be!
  - o Can use bowl or spindle gouge; sheer scraper
- Hollow inside –
  - o Drill depth hole about  $\frac{3}{4}$ " diameter
  - o Use hook tool
    - Set tool rest to appropriate height and distance;
    - Orient the hook tool, with the open side pointing up at 12:00. This is the safest, least aggressive cutting position. To cut more aggressively rotate the handle clockwise so the opening of the hook is pointing between 12:00 to 2:30. At 2:30 is the most aggressive cutting angle.
  - o Using the teardrop scraper tool
    - Secure the teardrop scraper with the bevel pointing down to the round side of the bar.
    - Orient the scraper with the large end pointed at about 11:30 (slightly to the left)
    - Use this tool to remove and tool marks, unevenness and the middle mountain
- Final outside shaping
  - o Rim cut – clean up the front to establish balance and where the rim will be
  - o Complete the final shaping especially around the foot or bottom of the vessel.
  - o Start the parting off process just enough to define the bottom of the vessel.
- Sanding and finishing
  - o Sand both the inside and outside through the grits. I usually go to about 400 grit.
  - o Use power sanders or inertia sanders if available; stop the lathe and sand with the grain by hand.
  - o Seal the wood with a sanding sealer; cut back the sanding sealer with #0000 steel wool
  - o Now finish with your favorite finish.
- Parting off (option 1)
  - o Use a thin parting tool; part in straight for the first  $\frac{1}{8}$  –  $\frac{1}{4}$ " then start to undercut
  - o Use a small handsaw to cut the piece free.
  - o Use other tools to clean up the bottom and Use the same finishing schedule on the bottom
- Reverse again (option 2)
  - o Mount the vessel using a jam block/chuck or a chuck with Cole jaws; use tailstock
  - o Use light cuts to remove the waste and to clean up the bottom.
  - o Use the same finishing schedule on the bottom.



## TURNING 27

WITH TONI RANSFIELD

[<Link to List of Demonstrations>](#)

### Polymer Clay From Start to Finish

Polymer Clay was developed in 1939 and certainly isn't a new material in the Art World. There are numerous ways to use Polymer Clay or "PC" as it's also referred to. PC, when designed in the proper way, lends itself to unique and beautiful designs perfect for use in pen turning. In this presentation, I will discuss the different brands of PC and which one is right for you. We will also focus on how to use PC, cure the tubes, bake them and finish them. I will also be showing you examples of how Polymer Clay can be use as an inlay in woodturning.



#### What is Polymer Clay:

Polymer Clay is a manufactured modeling compound that remains soft until cured in the oven. Polymer Clay is a combination of Polyvinyl Chloride (PVC), plasticizer and pigments. Different combinations of these substances give each brand of clay its distinct qualities. PC bakes at a low temperature between 230 degrees – 275 degrees Fahrenheit. PC is the most versatile and forgiving medium on the planet.



#### Different Brands:

There are several clay options available through craft stores and the internet, i.e., Michaels, Hobby Lobby, [Polymer Clay Express.com](http://PolymerClayExpress.com) and [Munro Crafts.com](http://MunroCrafts.com) to name a few. They all have different benefits and limitations in regards to workability, strength flexibility and firmness.

All Clays have an indefinite shelf life if properly stored. However, the amount of time clay remains in the conditioned state depends on the firmness of the clay. The following is a breakdown of the most common Polymer Clay types:

- Sculpey III: One of the first clays to be introduced. It is very soft and easy to condition. It bakes firm, but is not flexible and tends to be brittle after baking. I do NOT recommend this clay for pen turning.

## 27<sup>TH</sup> SWAT SYMPOSIUM

- Premo by Sculpey: Very soft and pliable excellent range of 30 colors. When baked its flexible. It is known for being stickier than other brands and may need to be leached (pressed between paper) to remove excess oils. It is one of the brands I do recommend for pen turning.
- Fimo Classic: It's the oldest and widely recognized Polymer Clays. It is one of the strongest and most resilient clays after baking. Offering an excellent degree of flexibility. Very stiff to condition. 24 colors. Can be used in pen turning.
- Fimo Soft: This is one of the easier clays to condition. Fimo Soft also offers the least amount of resistance or "blade drag" when slicing. It has good strength and flexibility after backing it is available in 50 colors. Can be used in pen turning.
- Kato: It can be stiff out of the package and takes longer to condition, but it offers excellent strength and flexibility after baking. It is available in 17 colors. It can be used in pen turning.

### Work Surfaces/Tools:

A smooth ceramic tile is the best work and baking surface for polymer clay. I personally use a glass sheet, but this cannot go into the oven. Your work must be transferred to a ceramic surface.

Any gadget/tool can be of great use in polymer clay work, but they must be dedicated to the clay and never used in food preparation again. I also do not recommend eating near your workstation ☺



© Toni Ransfeld

### Clay Conditioning and Handling:

Conditioning your clay is pretty self-explanatory. Even though you open up the package of clay and it is soft and pliable it stills needs to be conditioned. All Polymer Clay must be conditioned to restore the clay to a useable state. By conditioning the clay, you are softening up the clay, so that its particles are realigned. This is very important as this will give the clay maximum strength and the strongest adhesion.

1. Wash hands to keep dirt and debris off the clay.
2. Open the package, stand the brick of clay up on one end and use a blade to cut it into thick slices.
3. Using an acrylic rod, thin the clay by rolling the rod over the clay. Keep doing this until the clay begins to thin out, by doing this you will minimize crumbling and shredding of the clay.
4. Fold the clay in half and roll again.
5. Now you are ready to place it through the pasta machine on the thickest setting. Roll the clay through the pasta machine.
6. Change the pasta machine setting to medium, #3. DO NOT fold the clay in half, run the clay through the pasta machine again.
7. Fold the clay in half and continue running it through the pasta machine on the #3 setting until the clay is soft and pliable. Look at your sheet of clay it should have a soft sheen and be free of air bubbles and surface imperfections.

**Storing Your Clay:**

Polymer clay begins curing at approximately 266 degrees Fahrenheit, so the location you choose to store your clay is very important. Make sure the clay is not exposed to heat or direct sunlight. Place it where the temperature is low, but not freezing!!

Raw clay may be wrapped with plastic wrap, covered with a sheet of plastic wrap, placed in a zip lock bag or in a plastic container, i.e., tackle box. By doing this you will keep the clay clean from dust, hair and any debris. There is nothing worse than using the clay the next day only to slice through it and have cat, dog, etc. hair in the design!!

**Baking/Curing your Polymer Clay:**

Curing polymer clay transforms it from soft clay into a rigid plastic. Clay is cured by exposing it to temperatures ranging from 266 degrees Fahrenheit and up. Each brand has its own recommended time and temperature and these recommendations should be followed to the letter. To achieve the maximum strength, the recommended temperature must be reached.

It's a good idea to use an oven thermometer and timer. With the thermometer you can keep an eye on the temperatures. Oven temperatures fluctuate and don't always heat up at the temperature the oven is set to. When I bake my pieces in the oven I always leave the thermometer in, so I can check to make sure the temperature is holding steady, if not I can always increase or decrease it. ALWAYS pre-heat your oven to the desired temperature before placing your tubes in.

I do recommend buying a dedicated oven to cure your tubes in completely. Although Polymer Clay is labeled non-toxic, it is not to be used in conjunction with food items!! If you must use your home oven to cure your tubes use tin foil to tent over the tubes to keep the fumes inside and keep any residue from gassing onto the oven walls.

I suggest baking your tubes on a bead rack. The tubes will get cured from all sides and it's easier to bake. I recommend baking your tubes according to the manufacturer's directions on the clay that you choose to use.

**Finishing:**

Once your tubes have cooled down you are now ready to turn them. These directions are for finishing your tubes that have Millefiori<sup>i</sup> designs on them. Place the tubes with the bushings on the mandrel for the kit the tubes are for. Make sure it's on center. Very lightly sand using 800 and then 1,000 grit sandpaper, I recommend Abranet. Without turning on your lathe sand the tubes back and forth lightly to make it smooth, slowly turning the tube around. You want to be very

careful not to sand the design off!! Once you have gone all the way around turn your lathe on and put some polish to clean the tubes from any dust or clay particles. To apply polish put a little on a paper towel and go back and forth on the blank. Once its clean apply CA to the blank with the lathe spinning spray with accelerator. Once dry use sandpaper to smooth it out and then polish again. VOILA' you are done!! Assemble your pen!





## **27<sup>TH</sup> SWAT SYMPOSIUM**

### **Resources:**

Michaels  
Hobby Lobby  
[PolymerClayExpress.com](http://PolymerClayExpress.com) ~ New Market, Maryland  
SunnydayCrafts.com  
[MunroCrafts.com](http://MunroCrafts.com)

### **Books:**

Pen and Pencil Projects a guide for woodturners ~ by Walter Hall  
The Art of Polymer Clay ~by Donna Kato  
The Polymer Clay Techniques Book ~ by Sue Heaser  
Polymer Clay for the first time ~ by Syndee Holt  
Creative ways with Polymer Clay ~ Dotty Mcillian

Millefiori, which means “thousand flowers” in Italian, is the process of merging rods of glass into specific patterns, such as floral petals, heating the rods and then stretching them out to form what is called the cane. The cane can be sliced and combined to simulate intricate floral and similar patterns and then used to decorate beads or other glass objects.

Millefiori cane work can be replicated using Polymer clay. The canes are logs of clay which are created by laying differently colored and differently shaped clay pieces together (usually lengthwise) to form a pattern or a picture (the image runs all the way through the clay, but shows only at each end). Slices can be cut off the end to be placed elsewhere, yielding many little copies of the same image. The cane can also be carefully compressed from the outside to reduce (lengthening) the image/cane. This will give you a longer cane with a smaller image. The resulting cane can be sliced to form beads or used as a decorative layer for other objects.



## TURNING 27

WITH JOHN SCHLOBOHM

[<Link to List of Demonstrations>](#)

### Making Pens with Different Materials Tips and Tricks

**The first pen is free.** That is one of the rules in my shop. When anyone comes over I offer to show them how to turn a pen. I promise them they will leave with a nice pen that they made. Many of them come back again and again, or show me the pen they made each time I see them. Many of us started out turning a pen. It is one of the easiest things to turn and you do not need a lot of tools and equipment to make one. After we made a few pens, many of us wanted to move on to more challenging things. It is natural to want to challenge ourselves, and to become better at the craft we enjoy. Maybe we are selling pens short on the challenge they provide. Pen making is more than just wood. Pens can be made from many different materials and there is no reason for any skill level turner not to use them. We are going to look at what can be done to customize wood for pens and explore other materials from which pens can be made. This is a way to make pens more challenging and make them one-of-a-kind works of art.

#### Presentation Summary

- How to make a pen (Brief Power Point on making a pen)
- Tools
- Drilling
- Antler (Rough Turn)
- Stabilized Wood and how it is turned (Rough Turn)
- Casting with Alumilite and how it is turned (Rough Turn)
- Acrylic (Turn, Sand and Finish)
- Assembly Trick

#### Tools

Pens can be made with any tool you feel comfortable using. I have used skewes, EZ Tools, and roughing gouges. Some turners will tell you that a skew is the only tool that should be used to turn a pen, but I will show you that all these materials can be turned with a roughing gouge. A roughing gouge can be used by any level of turner and is one of the easiest tool to sharpen and keep sharp.

#### Drilling

Drilling pen blanks can be a challenge with some materials. The standard wood drill bit can damage acrylic on the exit end of the blank. Acrylic drill bits are available and are worth the extra expense. It does not take damaging, too many acrylic blanks to pay for an acrylic drill bit.

#### Antler

Antler is a wonderful and popular material to use for making pens. However, it provides several challenges for pen makers. The first challenge is finding the right size antler to use. Too large and you get into the center of the antler, which is very porous and does not finish well. The other large challenge it provides is drilling. The issue with drilling is in the shape of the antler. In general, antler does not fit well into the drilling vise. If you are able to get a good hole drilled and a tube glued in it, then you have to trim the ends. Because you have to trim both ends of the blank, alignment



## 27<sup>TH</sup> SWAT SYMPOSIUM

becomes an issue. The easiest way around both of these problems is to preturn the antler. Cut the antler to length and place the antler between centers and turn it round. If you are planning on leaving some of the outside of the antler (bark) visible, you may not want to turn it completely round. As long as you get more than 180 degrees round, it will fit into the pen vise properly.

Antler can be finished with many different materials. I have used spray lacquer, shellac, and urethane. I have also buffed them with wax or put on a CA finish. But for a more natural look, I sand to 600 grit and then buff with micro mesh. Antler is hard enough that it can be finished just like acrylic, but I don't use plastic polish because it can get trapped in the fibers.



### Stabilized Wood

Stabilization is a great way to take punky wood and make it good for turning again. Stabilization will not fill cracks and holes, (Casting will fill holes and cracks.) It will make wood hard enough to turn and finish. While stabilizing the wood, you can also add colors. Coloring is done with stabilizing dyes.

Stabilizing is done in a vacuum chamber. I stabilize with Cactus Juice ([www.TurnTex.com](http://www.TurnTex.com)). This web site has all the information you need to get started stabilizing. One of the most important thing to remember when stabilizing is the wood must be very dry. I dry my wood in a small oven and move it straight to the vacuum chamber once it cools enough to handle.

Stabilization is a great way to create your own pen blanks. By using multiple colors and different wood, you can make your own one-of-a-kind blanks. Colored resin can be stored in the refrigerator and used over and over for different projects.

I use CA to finish all stabilized projects.



### Casting with Alumilite

Casting with Alumilite is done in a pressure pot. Pots can be built from paint pots or purchased ready to go. **\*\*Safety is always the most important thing. Never over pressurize your pot, and never use a pot that does not have a pop-off pressure valve set below the pot limit. A pot that does not have a pop off is a bomb. Anyone who tells you otherwise is a fool.\*\***

Alumilite can be cast by itself or with other materials. Sometime woods need to be stabilized before casting. When using items like wood, pine cones and other natural products, make sure

they are very dry. As with stabilization, I dry all materials in an oven and move them to the casting molds as soon as they cool.

Casting must be done in molds and I purchase mine or make them out of 1/2" plastic cutting boards. Molds can be purchased that enable you to cast around a pen tube. This enables you to put items on the tube and use clear Alumilite. Most of the time I cast into larger molds and then cut multiple blanks from one casting. Dye and powders can be used to color Alumilite. If I want the color to penetrate into the wood, I will use dyes. Most of the time I will use powders because I like the way they blend in the casting, and give more of a 3D effect.

For more information go to [www.turntex.com](http://www.turntex.com) or [www.alumilite.com](http://www.alumilite.com)



### Laser Engraving

If you are going to laser engrave your pen, it should be done before the pen is assembled. On light colored woods, laser engraving shows up very well. On dark woods and acrylics, you may want to fill the engraving with some other material. When using dark colored wood, you will need to put a CA finish on before it is burned and then again after it is filled. The purpose of the first CA finish is to keep the filler from getting into the wood grain. On acrylics you can just burn, fill and then finish with CA.

### Acrylic

Acrylic is available from many locations. Using acrylic is a fun and easy way to make colorful pens. Acrylics can be a challenge to drill and turn, but with a good sharp tool and an acrylic drill bit you can get past any challenge. The acrylic drill bit will help prevent bottom blow out while drilling, but also keeping your bit clean is also important. Small bites with a good sharp tool, and higher speed will also make turning acrylic easier.



I paint the inside of all my acrylic blanks before gluing in the brass tube. You can paint the tube but on many acrylics you can still see the glue marks. By painting the inside you hide the glue marks and can make the same blank look different. If you are using the same blank for two different pens you can paint one black and one white and get different looks from the same blank. I use acrylic paint and a Q-tip to paint the inside of the hole. I will let the paint dry at least overnight before I glue in the tube.

### Finishing

Finishing can be done with many different products. For plain wood, stabilized wood, and Alumilite cast with natural materials I use CA. On antler that is very porous, I will also use CA, but on antler that is solid, I will use the method below without the plastic polish.

This is the method I use to finish CA, acrylic and Alumilite that is cast with no other products.

Sand to 600 grit (side sand all grits)

Wet sand with Micro-Mesh though 12,000 grit (side sanding first 4 grits)

Plastic polish

Acrylic buffing system

Any plastic polish should work, but I use Hut polish. An acrylic buffing mandrel can be purchased from most suppliers of pen products.

### Assembly Trick

There is nothing more annoying than to pick up a pen and run your finger down it and feel the sharp edge of the blank because it is slightly larger than the pen part it mates up to. An easy way to get around this is to roll the edge off the blank before assembly. Take some 600 grit sand paper and set it on a cloth towel on your bench. The towel will soften the surface and keep you from rubbing a flat spot on the blank. Take your turned and finished blank and place it at a 45-degree angle on the sand paper. Now spin it around several times to remove the sharp edge. This trick will also clean up any CA that was left after removing the bushings.

I hope that this will encourage you to go get out into your shop and try pens again. We just touched on several ways to make pens more challenging. We didn't even get in to segmenting. You can make them as challenging as you can dream up.





# TURNING 27

WITH LEE SKY

[<Link to List of Demonstrations>](#)

## Birdhouse Ornament with Eggs



### TOOLS AND SUPPLIES

- Spindle roughing gouge
- 3/8" spindle gouge
- 1/4" square round-nose scraper
- 3-point tool
- 16 tpi thread chase set
- Thin parting tool
- Texturing tool
- Body blank, 1-1/4" x 1-1/4" x 3"
- Cap blank, 2" x 2" x 2-1/2"
- Palm seeds
- Eye hook
- CA glue, thin and medium



**BODY**

1. Rough out the blank and cut a tenon. Mount in chuck, then shape upper 2/3 of ornament body, leaving enough material at base for support during hollowing. Choose the acorn face and drill 5/16" entrance hold. Refine body shape using the spindle gouge.



2. True up the top of the acorn body, then bore a 3/8" hole to the inside bottom depth. Hollow 2/3 deep inside with round-nose scraper, leaving rim 1/8" thick and parallel side 1/4" deep.



3. Angle inner edge of rim slightly outward, 3/16" inside, thin the wall 1/16". Reduce lathe speed to 300-450 rpm for threading.

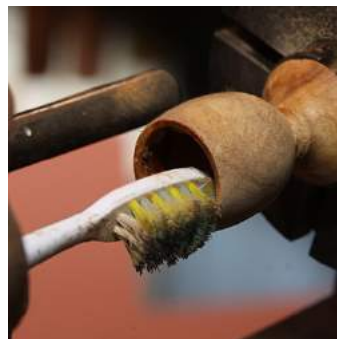


4. Begin working female thread chaser on the angled-out rim, cutting half of first thread on first pass with the chaser angled outward, feeding the tool into the opening. Thread chasers are scrapers, so they need to be positioned at center or slightly above center inside your turning and at center or slightly below center outside. Continue working the chaser into the opening lightly, cutting half thread deeper with each pass while shifting the tool parallel with the lathe bed. About 20 passes with the tool are needed.



5. Hollow remainder of body with round-nose scraper. Refine inside of bird entrance hole with round grinding bur in Dremel, then carefully sand interior, not touching the threads.

6. Finish shaping outside of acorn body and sand. Clean dust from inside, wax threads and interior, then part off.



**CAP**



7. Rough out blank, cut tenon, and mount in chuck. Cut 5/16" long tenon, 1/16" diameter larger than threaded opening in acorn body. Shape cap side. Nest material can be made using a shearing cut with spindle gouge during cap shaping.



8. Angle tenon edge slightly and cut groove using 3-point tool in corner where tenon meets cap.



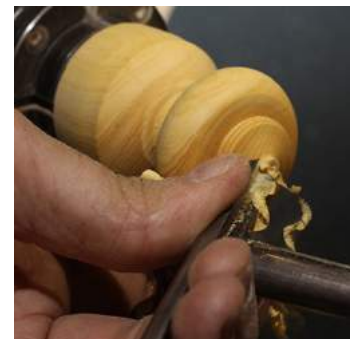
9. Slow lathe speed to 300-450 rpm. Top of male thread chaser must be on center line or slightly below. Start with tool handle angled toward tailstock and chamfer angle. Begin moving tool lightly to the left, cutting half thread each pass, bringing the cutting edge parallel to the wood as you work along the tenon. Pull the tool off the thread before the left edge touches the cap, or threads will be destroyed.



10. Test fit acorn body and re-cut threads until body screws on loosely, fitting flush to cap. Screw body on cap,



11. Shape cap to match body, then remove body. Cut away extra threads leaving two near cap, finish cut the cap base, wax the threads.





12. Stipple cap surface using chatter tool or texturing tool. Shape top of cap, leaving top stem 3/16" thick, and part off.



13. Make threaded jam chuck from scrap wood (or your next acorn body) and screw in cap. Finish cut the cap top, leaving stem 1/8" diameter. Texture top to match. Drill eye hook hole with proper size drill bit. Apply finish.



**EGGS**

14. Eggs are made from Christmas palm (a/k/a Adonidia palm) seeds that have burgundy veins in the nut meat. Any palm seeds, wood, or other materials can be used.



15. I get fresh seeds, air dry them, remove outer husks, flatten end on belt sander, rough up flat end with 80-grit sandpaper, and CA flue onto wood tenon in chuck.

16. Using freshly sharpened spindle gouge, rough turn seed, cutting only toward lathe headstock. Cut until nice egg shape is produced. Sand if needed. Continue cutting base until it comes off, catching with your hand. Make two more same size and shape.

**PERCH**



17. Perches can be turned from a dowel and colored or from leftover wood to match cap. Drill perch-size hole in acorn body and glue in.

**NEST**

18. Break up fine shavings (made while shaping cap) into small pieces. Drop into acorn body. Create nest with a pencil or dowel. Carefully apply thin CA glue, using long narrow tip to only the eggs and nest. Use minimum amount just to wet everything. Squeezing air from glue bottle before putting it in body helps to control flow.

19. One small drop of medium CA glue placed on the outer edge of each egg locks them into place. Set in safe place for glue to dry.





# TURNING 27

WITH JOHN SOLBERG

[<Link to List of Demonstrations>](#)

## Fun with Polygons



A **STOP** sign is the most common polygon that we see every day. Polygons are all around us yet we rarely stop to think about their designs or shapes. They are all around us in nature and in construction but rarely do we notice them. The comb in a bee hive is made up of a Hexagon (6 sided polygon), the stop sign above is a regular Octagon (8 sided polygon), and the worlds largest office building is a 5 sided polygon the Pentagon.



But as common as they are in nature it is uncommon for us to see polygons in woodturning. Those involved in segmented turning worry about the number of sides and the angles of the of the segments when assembling their project but then in most cases they turn them round. In the December issue of the *American Woodturner*, Ted Rasmussen presented an article on “Turning a Five-Sided Box” where he describes the layout for his project. We will take a look at that.

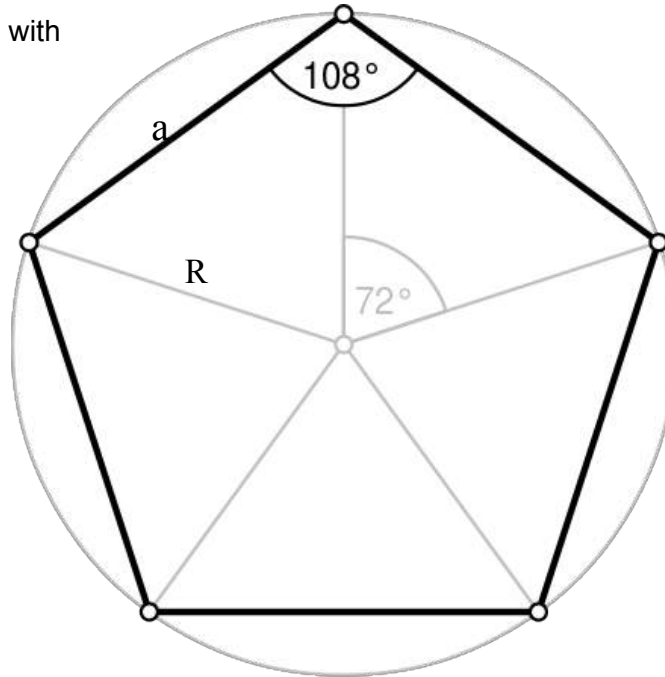
## 27<sup>TH</sup> SWAT SYMPOSIUM

The goal of this demonstration today is to determine how to easily layout a regular polygon of any number of sides and any size, and finally turn a multisided polygon into a bowl or an object of your choosing.

First let's define a regular polygon and look at some of the math behind it.

**Regular Polygon (also Equiangular Polygon) Definition:**  
A polygon that has all sides equal and all interior angles equal.

A five sided polygon with radius "R" and side length "a".



To find the length of side "a" use the following formula:

$$a=2R\sin(180/n)$$

a = the length of the side

R = the radius of the circle

n = the number of sides in the polygon

With this formula we can calculate the length of side "a" for any regular polygon with any number of sides "n". This will allow us to construct a polygon of any size on a selected piece of wood that we can then turn into an art form.

For example with a 5 sided polygon as above lets assume the diameter of the circle is 8 inches. Then R or radius would be 4.0". If we plug that into the above equation above:

$$\begin{aligned} a &= 2 * 4 \sin(180/5) \\ (180/5) &= 36^\circ \\ a &= 8 \sin(36) \\ \sin(36) &= .588 \\ a &= 8 * .588 \\ a &= 4.70" \end{aligned}$$

So the length of all sides of a 5 sided polygon with a diameter of 8" would be 4.70". Now all that needs to be done is to lay it out on a turning blank.

For those not comfortable with the math I will try to make it a bit easier with the following table:

No. of Sides	180/N	sin(180/N)
3	60°	0.866
4	45°	0.707
5	36°	0.588
6	30°	0.500
7	25.7°	0.434
8	22.5°	0.383
9	20°	0.342
10	18°	0.309
11	16.4°	0.282
12	15°	0.259

You can see from the chart a hexagon or 6 sided polygon is the only polygon where the radius “R” is equal to side length “a” so with a compass the sides of the polygon can easily be laid out. (R=4 and a=4)

For this demonstration I will layout a 7 sided polygon on a piece of ash and will discuss the various methods of laying out the length of the 7 sides using a compass, protractor, dividers, or digital calipers so that the sides are equal length. A 7 sided blank will then be mounted on the lathe and turned to a bowl. Various mounting methods will be discussed along with some ideas of what can be accomplished with different shapes and designs.

**List of potential equipment:**

- Screw Chuck
- Face Plate
- Glue Block
- Vacuum Chuck
- Four Jaw Chuck
- 3/8” & 1/2 “ Bowl Gouge
- Parting Tool
- Negative Rake Scraper
- Beading Tool
- Point Tool
- Digital and Vernier Calipers
- Compass
- Dividers
- Scientific Calculator
- Sanding Disk with Various grits
- Safety Glasses and/or Face Shield



Seven sided Polygon

**Resources:**

- American Woodturner*: December 2015 Vol 30, no 6 - [woodturner.org](http://woodturner.org)
- Wikipedia*: The Free Encyclopedia on the Web - Search Polygons
- Polygons: A Woodworker’s Guide to Multi-Sided Projects* By: Jerry Cole



## TURNING 27

WITH JAMES THURMAN

[<Link to List of Demonstrations>](#)

### Spinning a Pewter Bowl



Howdy y'all! Although I am a Metalsmithing & Jewelry faculty member at the University of North Texas, I'm not really a Texan (but, as the bumper stickers say, I did move here as fast as I could). Ever since I made these spun cowboy hat pins for the 2010 SNAG (Society of North American Goldsmiths) Conference in Houston, I thought they would be a great example for a technical article about metal spinning. Although metal spinning is a centuries old process, there are surprisingly few practitioners and even fewer using it as part of contemporary one-of-a-kind work. The proliferation of CNC metal spinning equipment has made production components more affordable but reduced the number of skilled spinners making one-of-a-kinds. I hope that this article inspires more people to experiment with metal spinning and perhaps incorporate into their own work.

For those of you not familiar with metal spinning, it is the forming of metal with specific tools while the metal blank is rotating on a lathe (not a subtractive process like machining). Spinning tools are used like simple levers, pushing against the rotating blank of metal to form it. Depending on the size of the spun piece, different sizes of woodturning or metal spinning lathes can be used. The most important aspect of the lathe is that it is sufficiently stable for the forces involved. The lathe I use was manufactured for woodturning but is great for metal spinning as well. The only alteration I had to make in order to use it for metal spinning was to change the toolrest.



The toolrest used in metal spinning is very different from the kind used in woodturning or machining. Because of the need of a fulcrum for the spinning tool, the toolrest must be able to accommodate toolposts. Throughout the spinning of a piece, the toolposts and toolrest are moved frequently to adjust for the constantly changing outside diameter of the metal.

Basic metal spinning tools are relatively simple to make, especially if you are able to do any hot forging or have a blacksmith friend that could help you out. I've been fortunate to either find my spinning tools used or have them gifted to me. The typical "spoon" tool usually has a variety of radii within a single tool to allow it to be used in a variety of ways during the process of a piece. Other more sophisticated tools are used for more advanced or technical processes, like a wheel tool for the rolling of the edge of the piece.



"Chucks" are the positive forms that metal is spun up against to maintain uniformity while producing a series of similar pieces. Most of the spinning of any piece is mostly done "on air" (the metal not up against the chuck). The metal is only spun against the chuck at the end of spinning to help ensure the piece has the required form and dimensions. When making prototypes or one-of-a-kind pieces, any chuck can be used that will not interfere with the final form desired.

As with any process involving rotating power equipment, appropriate safety precautions should be taken. Beyond just securing anything that might get caught in the lathe (long hair, loose clothing or jewelry, etc.), I would strongly recommend a face shield, tight fitting gloves, and a dedicated work apron or worksuit. A variety of lubricants are applied to the metal blank which eventually spin off the work (and onto you) so having separate work clothes for spinning is helpful in keeping grease and oil from getting all over everything. Obviously NEVER touch the edge of the rotating blank and be aware that the blank can fly out so a face shield is always required.



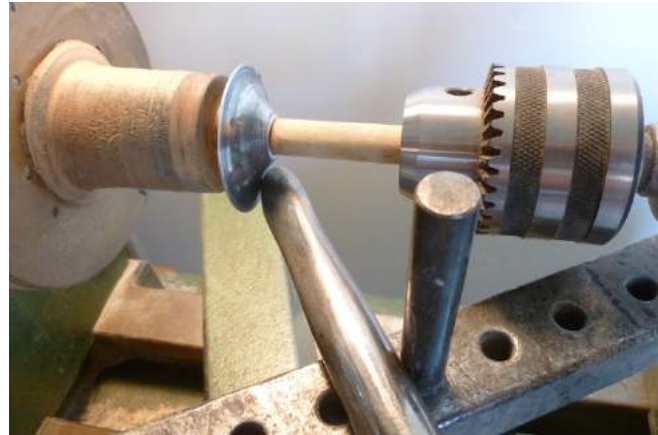
## 27<sup>TH</sup> SWAT SYMPOSIUM

For this demonstration, I will be illustrating how I spin and form the Cowboy Hat Pins. In this image, the aluminum blank is held between the chuck and the follower block. The follower block should have a small enough outside diameter to allow the spinning tool to push the blank around the first shoulder of the chuck, seating the blank on the chuck and reducing the chance of the blank slipping out. The follower block is held in the tailstock, ideally with a live bearing



that allows it to spin along with the metal blank, reducing friction and heat. Typical RPM while spinning is 500-1000. Be sure that the disk is precisely centered. Experienced spinners can do this with the lathe running by loosely holding the disk between the chuck and follower block and centering with a push stick. This is an extremely advanced and dangerous practice so it is advised that you center the disk before starting the lathe.

One of the most challenging aspects of learning metal spinning is that a certain amount of strength and confidence is necessary to get the metal to move. The other challenging aspect is that every piece is a little bit different and knowing exactly how to move the spinning tool and how much force to use only comes with experience. Generally, the force should decrease as you move out towards the edge, which helps keep the edge perpendicular to the axis of rotation. This is critical so that the piece maintains structural integrity, which prevents collapse or wrinkles.

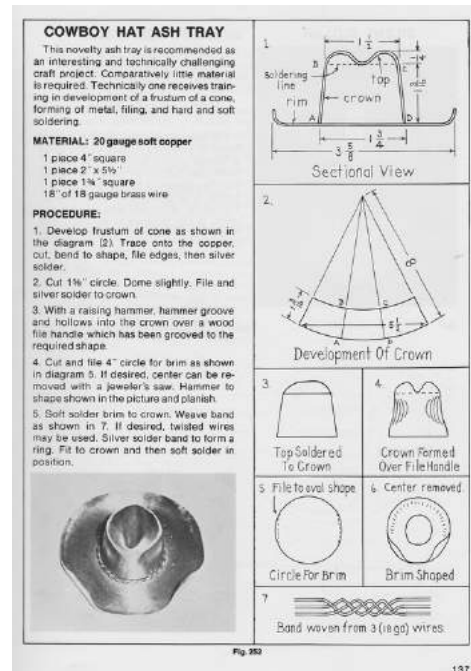


For larger pieces, it will be necessary to trim the edge. Trimming keeps the edge of the piece concentric with its center and relieves some tension that builds up in the piece. The effect is like slightly annealing the piece. When the piece is almost complete, burnishing or polishing the piece is usually done while still mounted on the lathe.

Although not a typical approach in spinning, the Cowboy Hat Pins have several subsequent forming stages not done on the lathe. Knowing that I would dap the top of the hat in, I spun the blank a little taller to account for the metal compressing back down. I used this example to encourage the incorporation of other techniques along with basic metal spinning.



Since metal spinning is typically used to create hollowware and vessels, I wanted to show a variety of my experiments. As you can see, many of them have involved the exploration of perforated blanks and how the perforations deform through spinning. Other techniques that you see in the samples include the use of a backstick to support the metal while spinning (which can reduce wrinkles), rolling an edge (a standard industrial approach to finishing the edge of the metal), and backspinning (rolling the metal back on itself, like the metal version of a turtleneck sweater)



I did want to share my inspiration for the Cowboy Hat Pins. As a frequent visitor to flea markets, garage sales, and junk shops, I noticed and started collecting the cowboy hat ashtrays pictured. Although some were certainly produced as souvenirs, I see most of them as a form of



## 27<sup>TH</sup> SWAT SYMPOSIUM

folk/outsider art since they are probably inspired by the typical Industrial Art assignment also included here. Ironically (or perhaps prophetically), I began collecting these items before I ever knew that I would end up living in Texas.

By necessity, this article can only be the briefest of introductions to metal spinning. Thankfully, there are a myriad of print and online resources available to anyone interested in pursuing this further. Of course, I would be happy to answer any questions since this article is only able to include the most basic of introductory information. In the future, I am hoping to offer metal spinning workshops and other public demonstrations once suitable venues are found. Please contact me with any suggestions or opportunities on how to share metal spinning with others.



### ONLINE RESOURCES

[www.jamesthurman.com](http://www.jamesthurman.com)

James Thurman's website

<https://www.maytool.com/>

high quality metal spinning tools (not cheap...)

<http://www.metalspinningworkshop.com/>

Terry Tynan: sells DVDs, tools, etc. (from England)

### BOOKS

Fred Crawshaw, Metal Spinning: Practical Instruction in a Fascinating Art, 1909 (Lindsay Publications reprint 1991)

Reagan & Smith, Metal Spinning, 1936 (Lindsay Publications reprint 1991)

SME (Society of Mechanical Engineers), Tool and Manufacturing Engineers Handbook, Vol II: Forming

Robert E. Smith, Etching, Spinning, Raising and Tooling Metal, 1951

Tuells & Painter, Machinery's Reference Series: #57 Metals Spinning, 1910 (Lindsay Publications reprint 1994)

Paul Wiley, The Art of Metal Spinning: A Step-by-step Guide to Hand-Spinning, 2004



## TURNING 27

WITH DAN TILDEN

[<Link to List of Demonstrations>](#)

### Exploring Natural Edge Designs, Maximizing Your Expensive Wood



#### INTRODUCTION

When I begin a piece, the main focus is capturing the natural features from its original form. Taking advantage of each unique portion allows the material to display its natural potential. Having full control over something completely original makes it easy to highlight its elegant beauty. Butchers would agree that the best meat is near the bone, and the same goes with figure and grain patterns in wood. All burl wood and highly figured material has the most interesting grain patterns, character, and beautifully figured designs near the exterior of the tree. Occasionally, I will buy or harvest turning stock seeking material with protruding branches near the foundation. I strive to highlight every inch, hoping to incorporate it in the live edge. Other examples are the roots, jutting out of the bottom which create an excellent base. I refer to this as “selective turning”. When you see one or more natural features in your turning stock, it’s crucial to design your piece and shape while incorporating its natural feature. The material is the main influence when looking for direction. It often speaks to you while shaping its future. The wood tells you where to go, and what some woodworkers consider a flaw, I use to its full advantage.

### ABOUT THE CLASS

We'll start off by discussing the many possibilities of incorporating a natural edge on our hollow vessels or bowls. We'll discuss how using a natural edge begins with the first cut of the chain saw or bandsaw. I'll review the numerous natural edge designs I've created as well as my students' designs. I want the beginning of the class to be a group collaboration, sharing the ideas and opinions of each student's experiences. Focusing particularly on their involvement with using a natural edge opening while looking at a slide of photos about the topic

I will then demonstrate turning a natural edge vessel to the class from start to finish. I'll be using a design I like to use, involving a natural edge. This class will also focus on the process and techniques of turning a hollow vessel. How to mount a piece, how to properly cut your wood, and how to measure your wall thickness for a consistent even wall thickness.



### BENEFITS OF THE CLASS

- Students will be apart of a open discussion, gaining knowledgeable tips from myself and others in the class.
- Students should walk away having a different perspective on how they go about their process or add to their skills they already have.
- The class will cover how to properly turn a hollow vessel using a natural edge according to me.
- Using a natural edge can maximize your expensive and rare wood.
- Teaching students how to use a natural edge will get them more excited about designing their pieces.

### CLOSING STATEMENT

I really do believe looking at the raw tree and your turning stock in a different way will help you create unique designs and get yourself more excited about your work. This class will make you more aware of opportunities your woodturning stock gives you to enhance it in a naturally clever way. Let's not get too far away from the roots of this art by changing and manipulating your piece to not even look like wood. Let's instead use those natural features in a way haven't thought of.



## TURNING 27

WITH CRAIG TIMMERMAN

[<Link to List of Demonstrations>](#)

### Arch Bowl (Advanced Winged Bowl)



Select a defect free rectangular blank. Good first time size is 9-10" long, 4-5" wide and 3" thick. Shorter in length is harder as is a thicker blank. If you have a small lather, go for shorter and thinner stock.

Mount the blank between centers with the bottom of the bowl facing the tailstock.

Flatten the bottom and add a tenon for your chuck. Make sure the tenon is recessed below the outside edge of the blank – i.e., what will become the feet of the bowl. This helps to guarantee that the feet will extend past the bottom of the bowl once the tenon is removed.

You can do some initial shaping of the bottom of the bowl at this time, but it is not necessary. Do NOT shape the entire bottom at this time, as it is easier to first shape the top.

Mount the bowl in your chuck using the tenon on the bottom of the bowl.

Shape the top of the arch. Start by nibbling away at the corner and work your way closer to the center and closer to the foot with each pass. Lathe speed is important to get clean cuts, faster is better. However, be safe with the speed and comfortable with what you are doing. Use the tailstock for support and additional safety.

Keep shaping the top until there are not flats on the ends and you have a nice arch shape from the center to the end.



## 27<sup>TH</sup> SWAT SYMPOSIUM

Add a tenon on the top. Recess this inside what will become the bowl portion so that you don't modify your arch shape.

Reverse the bowl in the chuck, mounting it on the tenon you made on the top. Prior to reversing, mark where the number 1 and 2 jaws of the chuck were on the tenon. This will help to re-center it later.

Remove wood to shape the legs of the bowl. Try to match the arch shape of the top. Work the legs in sections about an inch at a time down to their final thickness. Once you have a section complete, move on to the next section and don't go back. The legs will begin to vibrate/move as you remove more material so you can't go back.

As you remove material for the legs, you can also start forming the bowl portion. This can be tricky as you will be working between the legs of the bowl. Keep an eye out for the legs to make sure your bowl gouge does not come in contact with the legs. NOTE: do NOT remove the tenon on the bottom – you will need that to hollow out the inside of the bowl.

When you get closer to the center of the bottom, it will be very difficult to use a bowl gouge to make the final cuts as the space between the legs/wings will be very small. You can decide to make them meet at a sharp angle which can be done by carefully cutting from both directions with the bowl gouge – however, watch the wings of your gouge in both directions to make sure you don't hit the bowl or get a nasty catch. Another option is to put a cove at the base of the bowl and wing using a round nosed scraper. In either case, position the toolrest in the gap between the bowl and legs so that your tools don't hang off the toolrest too far.

At this point, you should sand as much of the bottom as possible. If your bowl is long enough and arch not too deep, you can use a drill and 2" sanding mandrel to sand the inside of the legs. NOTE: do this with the lathe OFF.



You can also use drum sanders to get into the tight spots. I like the slotted, sleeveless drum sanders as you can just wrap sanding paper around the drum and avoid the high cost of the sanding drums.

To sand the bowl portion, you may need to use a larger diameter sanding mandrel on you drill. I've used one as large as 5" to get to the top of the bowl.

Reverse the bowl again and mount it on the bottom tenon again. You should be able to get this to run true if you – prior to removing it the first time – you mark on the tenon the slot between the number 1 and 2 jaws. You can then use the little indentations left by the chuck to re-center it.

Mark the outside diameter of the bowl on the face based on the shape you made on the bottom. Use this as a guide when hollowing out the bowl.

When you are done hollowing the bowl, sand the top. I use a sanding mandrel on a drill and sand with the lathe moving. Be careful not to over rotate the drill and catch the mandrel on the wing. If you power sand like this, you need to reverse the lather every other grit so you don't round over the same edge all the time.

With the sanding complete, it is time to remove the tenon on the bottom.

My preferred way is to use a vacuum chuck as you can get the tailstock out of the way and do final refinement of the bowl.

If you don't have a vacuum chuck, take a waste block of wood and make a little donut chuck the bowl will be jammed up against using tailstock support. The center must be concave and have a definite rim to it.

Place a piece of leather between this jam chuck and the inside of the bowl and bring up the tailstock. The leather acts as a bit of grip and if the bowl slips and spins, it won't leave a mark on the inside of the bowl.

You can now carefully turn away most of the tenon. Don't cut it all the way off – it is much too dangerous as you can't safely catch a square bowl. Just trim off the remainder with a rotary tool, chisel or knife.

Finish with the bowl finish of your choice. Mine is Mahoney's Utility Finish, a.k.a. walnut oil.





# TURNING 27

WITH CRAIG TIMMERMAN

[<Link to List of Demonstrations>](#)

## Torus Vases



### BLANK LAYOUT

- 6-1/4" w x 7" h x 2-1/4" thick block. Block size is based on the 4-3/4" long flared vase tubes I use.
- Mark centers on front and back faces, based on 7" x 7" block.
- Mark length center on top and bottom. Do not mark width center unless you know block faces are parallel.
- Mark circle on one face and cut waste using bandsaw. Do not cut off top and bottom marks.

### INITIAL SET-UP AND FACE CLEAN-UP

Mount vase face sides between centers.

Make cuts across front and back faces to make them parallel. Now you can mark the width centers on the top and bottom because you know you have the correct thickness.



Cut an expansion chucking point in the face that a 4-jaw chuck can expand into. Cut it as close to the center as possible, and no deeper than necessary.

### CREATE VASE TUBE HOLD

Mount between top and bottom centers.

Turn a tenon on the bottom, keeping the rest of the bottom as flat as possible.

Chuck the blank on this tenon and drill most of the vase tube hole. Be careful that you don't drill too far such that the point of the drill bit

goes too far. I use a brad point drill bit with the point ground off.

Turn the curved recess around the test tube hole. Use a jig to determine proper depth and curve. Jig is dowel that matches vase tube diameter and curved portion to match the shape of the curved recess you are making.



Sand the recess

If using flared vase tubes, cut a rebate for the top of the flared vase tube using a bedan or small skew.

Finish drilling the vase tube hole to the proper depth.

**TURN FIRST FACE**

Mount blank on expansion chucking point on face.

Drill face hole. I use a 2-1/4" Forstner bit. Be aware of how close you get to chuck jaws. Hopefully you will drill right between them!

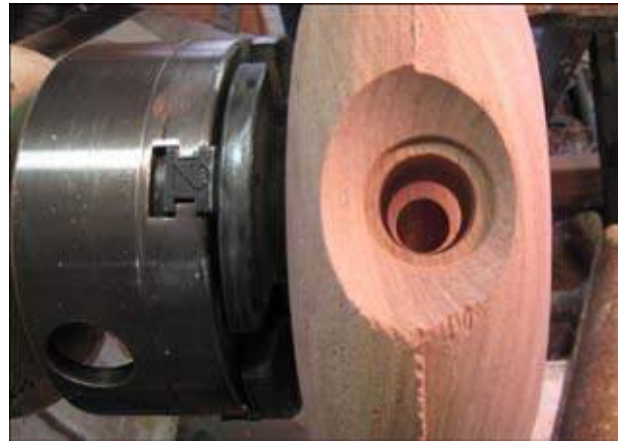
Mark center line of outside edge to guide you in rounding the outside edge.

Round the outside edge. First to the front face. Turn inside to outside.



Then round back face. You may need to turn from outside edge to inside. Use light cuts because this can chip out.

Have same curve on front and back. Use center line on edge as guide. Use the shape of the bottom and area around top recess to judge uniformity.



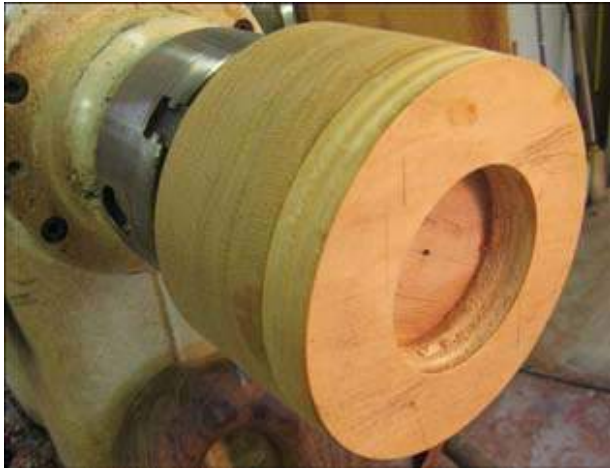
Join the front face to the drilled hole. You will want a smooth curve from outside edge to inside hole. Turn into the hole, but try not to make hole too much larger.

Sand the front face and blow and/or wipe off all sanding dust.

**TURN SECOND FACE**

On the headstock, use a wood drum chuck with flat face. Mount in chuck or faceplate or use MDF and tap to match spindle size.





Add double-sided tape to drum chuck.

Alternatively, you could build a specialized vacuum chuck.

Bring torus disc up to drum chuck or vacuum chuck. Use a large cone attachment on the live center or use a 4-jaw chuck attached to live center adapter (pictured) or turn a loose jam chuck to fit hole in vase and mount that on live center.



If you are using double sided tape, keep the tailstock pressure applied for at least a minute before removing the tailstock.

Turn second face like you did first face, but use light cuts ... no catches! Make sure the two sides meet cleanly in the center of the hole.

Sand the second face, including the center hold.

## REMOVE BOTTOM TENON

Mount jig you used to turn top recess in a 4-jaw chuck.

Bring up tailstock on bottom tenon.



Turn off as much as you can.

Ensure the bottom is flat. Use straightedge to judge.

Remove any remaining tenon with carving tools and/or burrs.

Sand bottom as needed. A sanding disk mounted on the lathe along with a flat platform attached to a dowl and mounted in the toolrest post hole works great for this.

Apply finish of your choosing.



# TURNING 27

WITH CRAIG TIMMERMAN

[<Link to List of Demonstrations>](#)

## Winged Bowl Basics

This demo covers making bowls from parallelograms—a four sided figure with opposite sides parallel.

This demo is all about turning air and coming up with bowls that fly!



### Square

Results in bowl where all wings are identical

Easiest to do, turning the least amount of air



### Rectangle

Long bowl with two identical wings

Turning the most amount of air for greatest time/distance



### Rhombus

Two main corner wings, with two minor wings

More air at main corners, but less air than rectangle once get farther in

## 27<sup>TH</sup> SWAT SYMPOSIUM

### Rhomboid

Two main wings and two points

Secondary wings rarely will curve out depending on angle of sides and length

Even more air at main corners than rhombus, but less air than rectangle once get in farther

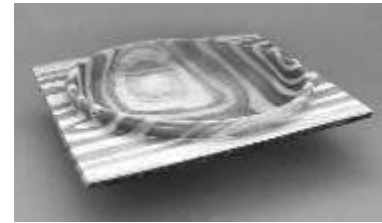


### Natural

Take half log section directly from chain saw and use that shape

Two sides are natural edge, with or without bark

Typically works best for flat wings



### METHODS

Two methods for turning non-round shapes:

#### Waste wood method

- Glue on waste blocks to fill our square so you do not turn air
- Requires clean edges on blank for gluing on the waste blocks
- Can be less sanding with this method, especially for beginners
- Turns like normal bowl

#### Natural method

- Start with non-round shape from beginning
- Great if you are impatient and want to turn
- This is the method I use

### STOCK PREP – DETERMINE WING SHAPE

Decide on shape you want to produce

- Square is easiest for first time (least air)
- Natural is quickest prep as there is no sawing

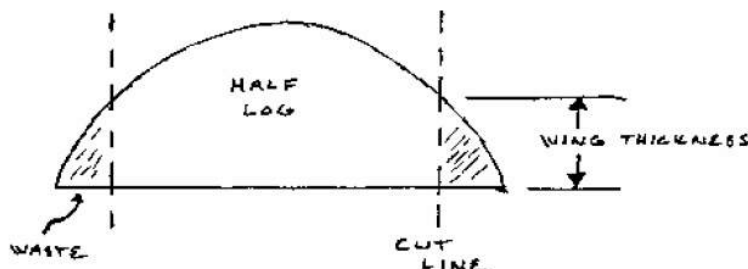
Determine wing shape and location

- Straight
- Curve up/down
- Top/middle/bottom of bowl



The wing thickness/location determines how much of the bowl blank needs to be square

- This will maximize the size of the bowl you can make from a blank
- Entire blank does NOT need to be square



**STOCK PREP – CUTTING THE BLANK**

Cut one straight side on blank

- For square, any side can be the first side
- For rhombus, I like to use the end grain sides as the angled sides, so the first side is with the grain
- Do not cut to final thickness yet

Use first side against miter fence to cut 2<sup>nd</sup> straight side

- For rhombus bowls, I use an angle of 70-75 degrees – just an angle that I think has best balance
- Smaller angle results in very extreme points/wings
- Larger angle and the bowl is more square
- This is a great area for experimentation
- Now have two sides straight

Now use wing thickness to determine how far in you need to cut opposite sides

- Set saw fence accordingly and cut opposite sides
- Using freshly cut side against fence, repeat process for original two sides
- **NOTE:** To get equal length sides for the rhombus, make sure you measure the length on the edge of the wood and not the distance from fence to blade when making angle cuts – otherwise, you will probably cut the blank too short!

**MOUNTING ON LATHE**

Find center on both sides

- Squared end is easy – draw lines between points
- If other side is not flat, hold blank against straight edge and measure distance to center from straight edge and transfer this to other side

Mount between centers with top facing the tailstock

- The way I do these pieces is to double chuck them
  - Chuck via the top to do the bottom
  - Chuck via the bottom to do the top
- This is done so we can get the tailstock out of the way
- Can do these without the chuck point on the top
  - To do that I must mount between centers with bottom at tailstock and turn entire bottom between centers
  - Harder to work bottom and sometimes limits wing design
  - Seems to work easiest for rectangle bowls, since wings extend out farther

**SAFETY TIPS BEFORE TURNING**

Always test spin piece prior to turning lathe on – double check to make sure piece won't hit tool rest or banjo

Keep fingers and hand out of reach of the wings

No flaws in wood near wings – easiest place for pieces to fly off (remember they are wings!)

Eye protection as usual

**CUTTING TOP TENON**

Flatten the top

- Take light cuts from outside edge to center
- Rubbing the bevel, but not a lot of wood to rub on, so don't push into the wood (Toolrest hand should just keep tool on tool rest)
- If having difficult time seeing edge, put dark color on bed ways, light from above, look down from top

## 27<sup>TH</sup> SWAT SYMPOSIUM

Put tenon on top side

- If don't have much wood to work with, this tenon can be cut into the wood instead of out of the wood
- It is possible to do these pieces with faceplates, but must be careful to get the mounts exactly centered or symmetry of wings will be off

### WASTE REMOVAL AND INITIAL FORM

Reverse onto top tenon, bring up tailstock for support

Can attack from multiple ways – work wings first, work bowl first, or work both

I typically start to waste away area up to the wing thickness

- Make cuts from outside edge to solid area of blank
- Get rid of waste material down to wing thickness

Rough shape the outside of bowl and put tenon on bottom

- Make your cuts from the bottom to the top
- Tailstock will be a bit of a limiting factor, go as far as you can for now
- **NOTE:** do NOT shape to final form – final form is not set until wings are cut

At this stage, piece should be running balanced, so we can remove the tailstock as it is in the way for refining cuts

### FORMING WINGS AND FINAL BOWL FORM

Start forming the wings

- Single curves tend to be easier to form and sand (as opposed to compound 'S' curves)
- cut like a cove – outside in for one half, inside out for the other half
- Look down from top to see exactly where tool is

As you make cuts from bowl to wing, begin blending bowl portion into the wings

- May need to re-cut bowl all the way from the bottom to the wing
- When shaping outside of bowl, the tendency is to not cut in far enough – if you don't cut in enough, the bowl will be shallow

**NOTE:** Never cut a wing curve that has a smaller radius than your smallest sanding tool  
These curved areas are the most likely place to have ridges and tool marks  
Want to be able to power sand them in some way  
1" radius is great for first time as your 2" sanding disc will work great

As you cut deeper in the wing, you may need to switch to a gouge with a steeper bevel so you can make the corner

If you can't get curve with gouge, use a scraper, preferably a negative rake scraper

- Negative rake scraper has bevel on both edges, but only one is sharpened each time
- Less grabby, cleaner cuts, especially right after sharpening

Want outside of bowl to seamlessly blend into wings – no abrupt meeting or change of direction

### SAND THE BOTTOM

Now is the time to do the sanding on the bottom

Sand trouble spots with lathe off, then power sand with lathe on

Can hand sand with lathe OFF – Do NOT hand sand with lathe on

BE AWARE OF THE WINGS!

Power sand wings with lathe on or off

- Depends on diameter of curve, if curve is too tight, will have to do with lathe off
- If you sand with lathe on, make sure you reverse the lathe on every grit or on every other grit so you wear the sides of the wings evenly

## **TURNING THE TOP/INSIDE**

Reverse chuck on the bottom tenon

Bring up tailstock for support

Work wings first

- Match the bottom curve, if need help, first draw curves on the wings
- Use dark lines, you will see them as piece spins

These bowls are easier if you keep the wing/bowl thickness thicker, i.e., greater than ¼ inch

- I typically go for 3/8 inch thickness
- There will be less wing vibration, less tool bounce

Maintain the wing thickness on the flat portion (the square part of the bowl)

Once wings are done, you can start hollowing the bowl

- I like to keep tailstock in place until it gets in the way, then remove it and finish hollowing
- When hollowing, you want to maintain the thickness of the flat portion of the outside edge

Once get into the main part of bowl, the rest is basic bowl turning

- Thickness of the bowl should be the thickness of the wings
- Beware of making the turn at the bottom of the bowl
- Switch to gouge with steeper bevel as you get to bottom if can't make the curve

When done, sand inside using same techniques as used on outside

## **TURNING OFF BOTTOM TENON**

Three primary ways of finishing the bottom

- Jam chuck
- Vacuum chuck
- Reverse onto waste block with tailstock support

Jam chucks don't typically work on these bowls as the bowl sides are sloped too much to fit snugly on a jam chuck

I use both vacuum and reverse chucking

Vacuum great if want to work unobstructed and get final piece done on the lathe

Reverse chucking using waste block is simple and cheap

- Turn disc shape, roughly the size of the bottom of your bowl
- Give it a curved edge, concave center
- Mount bowl onto this with a piece of leather between waste block and bowl (leather protects wood and gives more friction)
- Use tailstock to support

Do any last refinements to outside shape if needed

Form foot of bowl

Do any finish sanding not already done

Turn tenon down to about ½ inch diameter

Cut tenon with backsaw

Use rotary tool to carve off remaining tenon

Sand foot



[<Link to List of Demonstrations>](#)

## Closed End Pens

Turning closed end pens is usually one of the steps one takes to start getting away from strictly kit pens. Closed-end pens are one way to start modifying kits to make them a bit more unique.



### A closed end pen made by Anthony Turchetta.

A closed end pen is usually made from those pens that have caps such as the Jr Gentleman's or Junior Statesman from Craft Supplies USA (<http://www.woodturnerscatalog.com>) or the baron from Arizona Silhouette (<http://www.arizonasilhouette.com>). There are several other pen kits with caps and all of them

are good candidates for closed end pens. Even the slimline can have the top half turned closed end and made into a unique style or a desk pen.



A closed end pen is a pen with no terminal hardware on the outside end of either the barrel or the cap, or both.

### A double closed end pen: closed end on both the barrel and the cap.

Closed end pens have been very popular on the various penturning forums for several years. The challenge of making closed end pens lies in holding a pen blank with a blind hole since using a standard mandrel as it is designed to be used will not work. A blind hole does not go completely through the pen blank. Using a standard mandrel will not work since the mandrel, used as intended, has to pass through the pen blank and the blank is held in place by bushings and a brass nut. Making a closed end pen requires the mandrel to go into the pen blank but not completely through it. I will show several ways to hold the pen blank to make a closed end pen. Closed end pens have become so popular that one of our suppliers is selling a specialty mandrel for turning closed end pens. More information on these "expanding" closed end pen mandrels will come later.

One draw back to using a special mandrel for making closed end pens is the requirement to have a mandrel for each size of brass tube. Some mandrels are tube size specific but there is one that works with several tube sizes. True, several pen kits use the same size tube, but even more don't! I didn't actually do extensive research but I would guess that it would be necessary to have close to 15 pin chucks or expanding chucks to be able to turn any kits as closed end pens. That gets expensive! Selecting kits that use the same size tubes might allow 4 or 5 different kits to be made as closed end pens using only two or three closed end pen mandrels. This article will show several ways to hold a pen blank for making closed end pens.

Another draw back in making closed end pens is holding the actual closed end pen mandrel. The tool of choice for me, and others, is a collet chuck. The Beall collet chuck uses industry standard ER32 collets from the metal working industry and make them useable in woodturning.

Other similar collet chucks are available from sources such as Penn State Industries and Craft Supplies and their resellers.



**Popular collet chucks for wood turners.**

The Beall collet chuck is on the left and is made in the USA by J. R. Beall and the Beall Tool Co. The other one is sold by PSI and others and is made in China. The wide range of collets, both ASE and metric, and the large gripping surface allows wooden and metal parts to be held without marring. Marring often occurs when using a Jacob's chuck. These special closed end pen mandrels can also be held using scroll chucks with pin jaws. Other scroll chucks and jaw combinations may also work.

**A selection of ER 32 collets**



**PIN CHUCKS**

Pin chucks for turning bowls and other large turnings have been around for some time. A pin chuck is basically a slot cut into a mandrel with a pin dropped into the slot. Someone in the pen turning community adapted that idea, scaled it down and made a closed end pen with a smaller pin chuck. Pin chucks are tube size specific.



**A couple of home made pin chucks.**



**A machine shop made pin chuck with a bushing.**

Placing the brass tube over the pin chuck's slot and pin and then slightly rotating against the rotation of the lathe locks the pen blank in place and holds it securely. Pin chucks can be homemade using a metal lathe and mill. Not all of us have those pieces of equipment. Pin chucks can be made at a machine shop but the

cost of tooling and computer code writing is often much greater than the cost of the actual chuck. I once checked on having some made and the chuck itself cost \$10 each, but the CNC code was going to cost \$250...for each different size pin chuck. Ouch! Once in a while members on one of the penturning message boards will offer making pin chucks for a



reasonable price. I've seen them for sale, ranging \$5 - \$15. This is much more reasonable than using a commercial machine shop. **Pen Point:** Make friends with someone who has a metal lathe and milling machine.



### Pin chuck with brass tube.

Pin chucks can be made using a standard file and/or sandpaper. The only limitation is finding the correct size of rod to use. A pin chuck has to be large enough to just slide inside

the tube of the pen being made. The fit of the rod inside the brass tube has to be such that there is as little slack as possible between the OD of the rod and the ID of the tube. Less slack is better and will make a more accurate pen. Drill rod comes in a wide selection of sizes. If luck has it, the exact size will be available. If not, get the smallest available diameter just larger than the ID of the tube. Hold the drill rod with a chuck of some kind and reduce its diameter until the tube will just slide over it. This can be done with sandpaper or file or both. Then the slot for the pin can be made using a grinding wheel and then finished off with a file. When making a pin chuck I use kits that require little or no sanding on the rod. Drill rod is available from industrial suppliers such as ENCO and MSC DIRECT and can be found on the web at <http://www1.mscdirect.com> and <http://www.use-enco.com>. Be sure to order a small diameter rod for making pins. I use 1/8" drill rod for the pens. Small nails can be used on the pin chucks for smaller tubes such as the 7mm pens. Notice in figure 6 that one of the pin chucks was made from a standard bolt, which had to be sanded down just a tiny bit. I used a grade 5 case hardened bolt.

Harbor Freight sells a set of 28 transfer punches that some pen turners have used to make pin chucks. These punches have several sizes that just fit into the brass tubes of several popular pen kits. Then, only the slot for the pin has to be formed. Here is a link to the set: <http://www.harborfreight.com/28-piece-transfer-punch-set-3577.html>. These punches are also excellent for disassembling pens. Every size I have ever needed has been included in this set.

I would offer one word of warning and safety. If a Jacob's chuck is ever used in the head-stock without tailstock support, then the use of draw bar is essential. When purchasing a Jacob's chuck a threaded hole in the MT arbor should be a requirement. I use an all thread rod, large washer, and wing nut to hold a Jacob's chuck securely in the headstock taper.

Richard Kleinhenz has an excellent article about using and making pin chucks: <http://penmakersguild.com/articles/pinchuck.pdf>

### EXPANDING CLOSED END PEN MANDRELS

Expanding closed end pen mandrels are basically hollow tubes with a bolt passing through. An integrated bushing is on one end and the other end has a slit and a cone shaped threaded washer. As the bolt is tightened the cone shaped washer pulls the split end apart and holds the brass tube. These expanding mandrels are sold by Arizona Silhouette: [http://arizonasilhouette.com/Closed\\_End\\_Pen\\_Mandrel.htm](http://arizonasilhouette.com/Closed_End_Pen_Mandrel.htm).



Expanding closed end pen mandrel available from Arizona Silhouette. Picture courtesy of Arizona Silhouette and used with permission.

This mandrel is a clever idea and works great. But, it is a pricey tool and is only useable on one size pen tube. Each different size brass tube requires its own dedicated closed end pen mandrel of this style.

Penn State Industries has their style of an expanding closed end pen mandrel. There are two versions. One is for smaller tubes and the other is for larger tubes. Each one works for several sizes...sort of two sizes fits many unlike the others that are tube size specific. They are called the Grabber (for smaller tubes) and the Big Grabber (for larger tubes) and come in either #1 or #2 MT sizes. I have not used one so I cannot comment on their performance. More information is available from the PSI website or catalog. The website has a short video introducing the two grabbers. The PSI catalog descriptions:

**THE GRABBER (for 7mm and 8mm tubes)**

*Now you can easily turn natural "closed ends" on any 7mm or 8mm pen or project. With our new revolutionary and amazingly simple Closed End Pen Mandrel system you can turn a barrel of virtually endless length and design! Your creative possibilities are endless. Simply twist the mandrel nut; and the silicone rubber on the mandrel expands and "grabs" the project tube internally. The rubber locks and supports the tube as you turn the end. Turn closed ends on nearly any existing 7 and 8mm projects including, pen kits, key chains, letter openers, seam rippers, bottle openers, and more. The patent pending system includes a 7mm sized mandrel shaft with an internal threaded rod, a 1" silicone expansion tube, 6" of extra tubing, 7mm and 8mm internal end bushings and a MT headstock mount. Available in #1 and #2 MT (Morse Taper)*

**THE BIG GRABBER CLOSED END PEN CHUCK (for larger tubes)**

*With this system you can mount and turn closed end barrels from 10.5mm to 9/16 in. - virtually any large tube closed end pen style (in addition to the 4 styles we offer). The system includes accessories common to making the 4 dedicated closed end kits (Apollo Infinity, Majestic Jr., Olympian Elite and Tycoon). For #2 MT (Morse Taper). Included Accessories: End bushings for 10.5mm, 12.5mm and 9/16" tubes; three 6i expansion hose bladders for the 4 projects; Also includes a countersink bushing to providing a recess for the refill end of the closed end pen.*



**The PSI closed end pen mandrel. Picture courtesy of PSI and used with permission.**

Penn State also sells special closed end pen kits for several of their fountain pen and rollerball kits. The pens included are Apollo, Infinity, Majestic Jr., Olympian Elite and Tycoon. Although these special kits are not needed to turn a closed end pen, they do offer a neat style for the clip ends of the caps.



**The PSI Olympian Elite closed end pen. Picture courtesy of PSI and used with permission.**

### WOODEN JAM CHUCK

I noticed a post on IAP by Gerry Rhoades and how he uses a wooden homemade jam chuck for turning closed end pens. Gerry explained to me the idea was shared with him by Mike Vickery. Here is what Gerry had to say about making and using these wooden jam chucks:



“The idea is not mine. I got it from Mike Vickery. We were corresponding about pin chucks and he told me that he sometimes did this (made his own from wood) if he didn't want to wait for a pin chuck to be made or shipped. I use a Beall collet chuck with a  $\frac{3}{4}$ " collet. I've been using a  $\frac{3}{4}$ " poplar dowel. I cut a piece of dowel about 6" long and put it in the collet chuck. I then turn it down until it's close to the inside diameter of the tube. I finish taking it the correct dimension with sandpaper. When the tube will just barely fit, I give it two coats of thin CA and then sand it back down. I also turn a shoulder on it that's about 0.020" larger than the bushing diameter and coat that also with CA. I then force the blank onto it until it meets the shoulder. I use the tailstock just like I would if I was using a dedicated closed end mandrel.” -Thanks Gerry and Mike.

Certainly a Jacob's chuck could be used to hold the  $\frac{3}{4}$ " dowel if a Beall collet chuck or other collet chuck were not available. The dowel could even be held in some scroll chucks with regular or pin jaws.

Wooden jamb chucks as explained above.



The concrete anchors as described.

### CONCRETE ANCHOR TOOL

Another penturning friend, Ron McIntire, showed me how to use a rather unusual piece of hardware for turning closed end pens. This piece of hardware is an anchor used in concrete. The anchor is placed into a hole in concrete and as a bolt is turned the anchor expands and holds inside the hole. Using it to hold a pen blank the hole in the blank and brass tube act as the hole in the concrete and the anchor is expanded holding the pen blank securely. The exposed part of the anchor's bolt is then held in a Jacob's chuck or a collet chuck as mentioned earlier. This is a rather unique idea but only works on a few kits because of the

limited sizes of these anchors. But, it does work and costs very little. The top image is two anchors. One is  $\frac{3}{8}$ " x  $1 \frac{7}{8}$ " and the second one is  $\frac{3}{8}$ " x 3". I removed the sleeve from the shorter bolt and placed it on the longer bolt with washer and nut as shown in the third image. This gives more exposed bolt with which to grab with a chuck to hold for turning. The bottom image is a baron cap tube over the sleeve and the nut was turned against the washer enough to

lock the brass tube in place. I placed the “anchor mandrel” in a Jacob’s chuck and surprisingly it ran straight and true. I noticed no wobble. I did make a pen or two with this anchor and it worked ok. But, I feel more confident using the expanding pen mandrel from Arizona Silhouette. Oh, and the two anchors only cost \$.87. -Thanks Ron for sharing this.

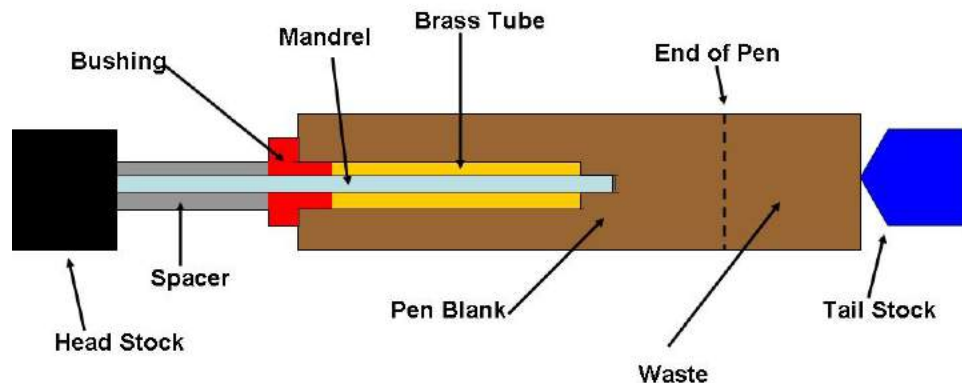
There is a way to turn a closed end pen using a standard mandrel and no other special tooling. It is a very clever way to hold the pen blank and works quite well. When I demo closed end pens I always show the various methods and tools for making these pens. But, I always turn the demo pen this way to show just how easy they are to turn with no special tooling.

### CLOSED END PEN MANDREL ALTERNATIVE

There is an alternative to these special chucks and mandrels. It uses a standard mandrel and one of the kit’s bushing. **Pen Point:** Be sure to use the correct bushing for the end of the pen accepting the mandrel. Cut a blank longer than needed for the pen barrel. I usually make it 3 inches longer than is needed just to be safe. Drill a hole using the suggested bit and make the hole as long as the tube. Making the hole 1/16” longer will give some room to square the end of the blank to the tube. Then, drill another hole, 7/32” in diameter, centered on the first one. The total of the two holes should be long enough to accommodate the rollerball refill and spring, or the ink pump if a fountain pen is being made. Drilling these two holes is easier done on the lathe than on a drill press. The length of the two holes will be different for each pen kit, so take careful measurements.

Contact me at [don@RedRiverPens.com](mailto:don@RedRiverPens.com)

Several pen making articles can be found on my website at [www.RedRiverPens.com](http://www.RedRiverPens.com)



### The “no special tooling” method using a standard mandrel.

Once the holes are drilled, slide a spacer onto the mandrel, then the proper bushing, and then the pen blank. The mandrel should screw into the 7/32” hole and the space should take up the extra room between the end of the bushing and the end of the MT arbor. Experimenting with this 7/32” diameter hole to get the best fit for screwing the mandrel into it. Bring up the tailstock and tighten the blank and bushing against the spacer. A mandrel whose length is adjustable makes this method much easier. The same spacer can be used on every kit. This is one case where a picture is worth a thousand words.

I have reported on several methods of holding pen blanks for making closed end pens. In next month’s column I will document the actual making of a closed end pen. I will show the Arizona Silhouette expanding mandrel, the concrete anchor (just for fun), and the “no special tooling” method. This will allow me to share the nuances of each method and how best to make them work correctly. I hope several readers will get one of these methods ready, order a kit or two, and prepare to make a pen that will be truly be different than any other pen they’ve made.

## 27<sup>TH</sup> SWAT SYMPOSIUM

Closed end pens are fun, challenging and unique. Once the skills for turning closed end pens are mastered then they can be used to create unique, challenging and fun projects.



Gavel with a double closed end pen in the handle.



# TURNING 27

WITH CORY WHITE

[<Link to List of Demonstrations>](#)

## Turning Bookends



### INTRODUCTION:

It is often a bonus when something we turn is not only beautiful, but highly functional as well. Woodturned bookends can be just that. This ninety-minute presentation teaches woodturners how to successfully turn a pair of bookends by discussing, and/or demonstrating:

- Wood Selection Specifications
- Equipment, Tools, and Materials
- Production Steps
- Shape and Design Options
- Finishing Considerations
- Suggested Resources

John C. Maxwell writes, "The bookends of success are starting and finishing. Decisions help us start; discipline helps us finish."

### Wood Selection Recommendations:

Wood Species: To ensure the bookends are durable and sturdy, use wood species that are hard, dense and heavy. The online resource, The Wood Database, identifies 66 out of 104 North American Hardwoods that have a Janka Hardness Rating of at least 1000 lbf and an Average Dried Weight of 38 lbs./ft<sup>3</sup>. Of the 66 North American Hardwoods meeting these recommended criteria, my favorites include Black Walnut, Cedar Elm, Green Ash, Honey Locust, Honey Mesquite, Osage Orange (Bois d'Arc), Live Oak, and Pecan.

## 27<sup>TH</sup> SWAT SYMPOSIUM

Species	Janka Hardness lbf	Average Dried Weight lbs/f3
Black Walnut	1010	38
Cedar Elem	1320	41
Green Ash	1200	40
Honey Locust	1580	47
Honey Mesquite	2340	51
Live Oak	2680	63
Osage Orange	2620	54
Pecan	1820	46

- Dimensions: Using wood blanks that are a minimum diameter of 10” and 4” thick provides ample wood material.
- Other Desirable Qualities: Other wood characteristics that can enhance the artistic appeal of the bookends include unusual grain patterns, figure, unique inclusions, voids made by mother nature, spalting, and/or interesting bark (if natural bark edge is incorporated into the design).

### Equipment, Tools and Materials:

- Lathe capable of turning at least 10” diameter wood equipped with normal accessories
- Lathe chuck, faceplate, headstock drive center, live tailstock center
- Basic turning tools: bowl gouge, detail gouge, scrapers, parting tool
- Sandpaper assortment
- Natural clear wood stain
- Polyurethane finish
- Foam and bristle brushes
- Painter’s tape
- Carpenters square
- Painter’s triangles (I found a package of 10 at Home Depot and have listed the link below in **Suggested Resources** below)
- Clear 1/2” stick-on bumpers for bottoms of bookends, four per piece (I found these available in a package of 16 at Hobby Lobby and have listed the link in **Suggested Resources** below)

### Production Steps:

1. Select wood species that meet recommended specifications for durability and sturdiness, as well as its esthetic qualities such as color, grain, and unique features.



2. Mount blank onto lathe with face plate or other desired method.



3. True up piece into a traditional wood bowl blank shape.



4. Turn a tenon on exposed side.





## 27<sup>TH</sup> SWAT SYMPOSIUM

5. Remove from lathe, remove face plate, reverse piece and mount it back onto lathe with tenon in chuck.



6. Once finished turning and while still on the lathe, sand as needed and desired.



7. While still on the lathe, apply natural clear wood stain, followed by at least three coats of polyurethane.



8. While waiting for polyurethane finish to cure, decide if outcome is to be one larger set of bookends or two smaller sets of bookends (see Shape and Design Options below).



9. Once finish has cured, remove piece out of chuck and then remove tenon. I chose to remove the tenon with a sharp chisel. After tenon is removed, sand and then finish center section with clear natural stain and several coats of polyurethane.



10. After polyurethane finish has completely cured, apply wide painter's tape on the surface side along what will be the cutting lines. Draw the cutting lines on the painter's tape. Use a carpenter's square to ensure lines are perpendicular.



## 27<sup>TH</sup> SWAT SYMPOSIUM

11. Put painter's tape on all of the underside surface and perimeter edges to protect the finish during the cutting process.



12. Cut piece by preferred method. I used my miter cut saw.



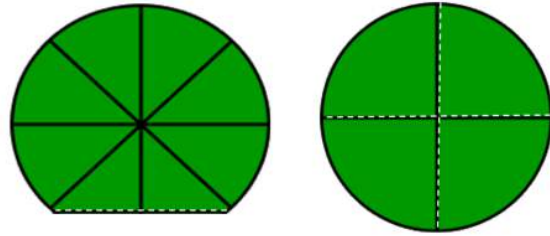
13. Remove painter's tape and finish the new unfinished wood surfaces by sanding, clear stain and then several coats of polyurethane. I found the use of painter's triangles extremely helpful when finishing with the polyurethane coats.



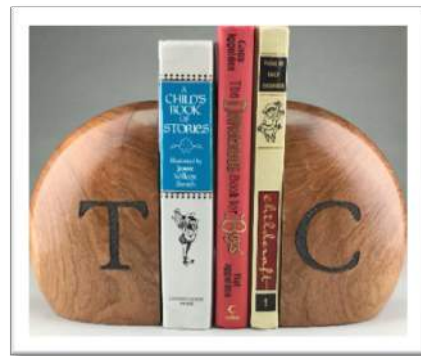
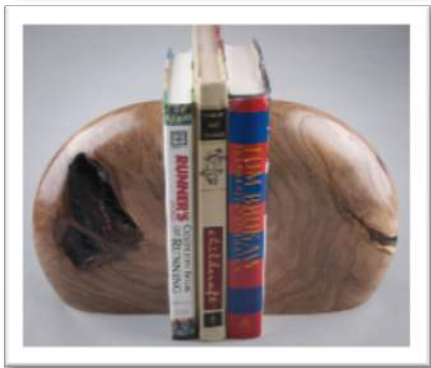
**Shape and Design Options:**

There are at least two shape options:

- One larger bookends set of about 9/10 of the production circle where each bookend would be about 8" tall, 5" wide, and a base of about 3".
- Two sets of smaller bookends that are 1/4 of the production circle where each bookend would be about 5" tall and 5" wide at the base.



Design options are endless. From simple to complex, smooth to highly tactile, the design for the bookends can be almost anything you want them to be. Sources for design inspiration are listed in suggested resources below.



**Finishing Considerations:**

- Apply at least three coats of Polyurethane to form a hard, long-lasting durable finish.
- Apply clear 1/2" stick on bumpers for bottoms of bookends, four per piece

**Suggested Resources:**

- The Wood Database <http://www.wood-database.com/wood-finder/>
- Hobby Lobby clear stick-on bumpers <https://www.hobbylobby.com/Home-Decor-Frames/Frames-Photo-Albums/Hardware-Accessories/Self-Adhesive-Bumpers---1-2/p/38613>
- Painter's Triangles at Home Depot <https://www.homedepot.com/p/HDX-Painter-s-Tripods-10-Pack-PT10-HDX/206509477>
- American Association of Woodturners, The Sphere <http://www.galleryofwoodart.org/The%20Sphere.pdf>
- Turning Gallery <https://www.turninggallery.org/>
- *Conversations with Wood, The Collection of Ruth and David Waterbury*, by Ruth and David Waterbury



## TURNING 27

WITH ALAN & LAUREN ZENRICH

[<Link to List of Demonstrations>](#)

### Eccentric Jewelry Turning - Making Pendants

Why hide your turnings on a shelf? Turned jewelry is displayed proudly to many, many people. Pendants are a pleasure to wear, and to create.

Alan and Lauren Zenreich show the tools, techniques and procedures used to make their wood turned jewelry. Topics include:

- Layout and preparing of blanks for turning
- Affixing work to an indexable offset backing plate using turner's tape
- Multi axis positioning to facilitate boring holes and scribing lines
- Turning the pendants, cutting arcs and beads, smoothing adjoining eccentric surfaces, cutting beads and preparing the work for finishing
- Using the turnings as a canvas by incorporating semi-precious stones and beads, pyrography, archival inks and other embellishments in the pendants and necklaces.
- Assembly techniques for inserting pins and jewelry findings

We first fell into the vortex when visiting a local woodturning show and met with other woodturners at their club booths. After Alan purchased a wood lathe and tools to add to the shop, Lauren quickly proclaimed "we are *making* all holiday presents this season." A year later she had her own lathe, tools and protective gear. Alan is delighted to be one of a select group of happy men who can give the gift of tools for their wives' birthdays.

It's great collaborating to produce unusual wood turned jewelry. Lauren has a background in art & crafts, having worked with paints, stained glass, enameling, wirework, precious metal clay, polymer clay, beading, and now woodturning. Alan is a former professional still life and special effects photographer. We are both active in community theater... she doing scenic décor, he photographing the productions.

Alan clearly enjoys playing with the shop "toys". As an enthusiast, he delights in sharing his insights and discoveries, tweaks and adaptations. Of course, a camera is always present in the shop to record work in progress images.

We combine different elements and techniques, such as beading (with precious and semi-precious stones), piercing, airbrushing, pyrography and Zentangling, to embellish and/or enhance their designs. Or do nothing at all... it all depends on the wood.

As members of AAW, NJ Woodturners, and Hudson Valley Woodturners, we enjoy demonstrating to local clubs and at woodworking events. Most notably, we have demonstrated to non-local clubs using interactive video, and Alan has mentored demonstrators to do the same.

We especially love going to symposia like this one, demonstrations, workshops, conferences....taking any chance to meet other woodturners, share a meal, and talk about things turning.

#### Session Notes

There are any number of tools and techniques that can be used to produce turned pendants. The tools you use is a matter of personal preference. In our session, we demonstrate some of

the tools and techniques that we happen to use for multi-axis turning, boring holes, making beads, and other pendant making tasks.

Sometimes, it's all about the beauty of the wood, and the turner needs to 'get out of the way', and let the wood be the star. In this very simple example (figure 1), we turned a piece of stabilized buckeye burl to round, and then changed the axis to bore a hole near the edge for the necklace (figure 2). It's finished with Antique Oil, then buffed and waxed.



Figure 1. Buckeye pendant



Figure 2. Bore pendant hole

When experimenting with an eccentric jig, it's fun to cut intersecting arcs into the face of a work piece. The axis is changed by moving the mandrel into one of 8 threaded holes on the back of the jig (figure 3).

To help pre-visualize the new arc patterns, we made a set of transparent templates (one for each offset). For example, in the photo (figure 4), the brown lines show the center position, while the blue lines show where the #2 hole is centered.



Figure 3. Eccentric axes



Figure 4. Eccentric template

The index plate that holds the waste block can be rotated through 24 steps, allowing for many intersecting patterns. By placing the overlay on the work piece, we can better align the arc with any features in the pendant.

## 27<sup>TH</sup> SWAT SYMPOSIUM

The photo below (figure 5) shows a piece of Corian that has two scribed arcs. The arcs were positioned by placing the jig at the #2 axis hole. The first cut was made with the index plate at the 0 position, then the plate rotated 90 degrees to the 18<sup>th</sup> position for the second cut.

The grooves were filled with Inlace with metallic dye, then returned to the lathe for cleanup and final shaping.



Figure 5. Corian inlace pendant

We are partial to circles within circles, particularly negative space that lets us combine the turned item with other media... in these cases, semi-precious stones and beads.  
(Figures 6 and 7)



Figure 6. Pendant blackwood jasper



Figure 7. Pendant padauk jasper

One of the trickier tasks was finding an easy way to bore very tiny holes (.022") in the pendant so that the pins, eyelets and various other jewelry "findings" could be affixed through the wood.

Our setup (figure 8) uses a rotary tool fitted with carbide burr bits (also called micro bits) on a vertical drill press stand. These tiny burrs have a 1/8" shaft, making them easy to handle. They cut very well (even on the sides) but are brittle, so be gentle. The work is easily positioned by

placing it in a micrometer stand. The stand has rubber faced jaws and tilts forward and back for exact placement.



Figure 8. Dremel press      Figure 9. Lauren's workspace setup

We often consider a pendant to be a “canvas” for other techniques. Pyrography, carving, piercing, inking, painting... all ways to be creative. We have repurposed a photo ball head as a work holder (figure 9), so Lauren can more easily do pyrography, piercing, inking, etc. The ball head is affixed through a square dog hole in this 100 year old Christensen work bench. A microphone stand boom arm makes for a comfortable wrist rest.

A plain piece of maple (figure 10) was turned with a raised bead around the central area where Lauren created some Zentangle-inspired patterns using archival ink. The pendant was then coated with General Wood Turners Finish, cut with water and applied with an airbrush.

Sometimes, you have to go with the flow and see how things evolve. The crescent moon necklace (figure 11) was intended to be circular with an offset hole. However, it broke apart while boring a hole. We fixed it (glue is a fine thing), but it broke again. We fixed it again, and it broke again. Clearly it did not want to remain round, so we took the hint, and considered it a redesign opportunity.



Figure 10. Embellished pendant



Figure 11. Pendant moon



## 27<sup>TH</sup> SWAT SYMPOSIUM

We continue to enjoy using various materials, tools and techniques. It takes very little wood to make a pendant, so when we received this unknown burl (figure 12), we decided to do an interesting shape (there are those circles again!), but still show off the wood.

Finally, we've been exploring ways of combining even more media types with the wood. In this case, for a 'Steampunk' effect (figure 13), we cast watch parts in resin, turned the castings round, then inlaid them into ebony pendants.



Figure 12. Autolabe pendant



Figure 13. Steampunk

It's been an interesting journey so far, with many branches in the road ahead.

### Resources

Joyner Off-Center Jig (Pendant backer plate)

- Most bottle stopper mandrels will fit. Mandrel needs a 3/8" x 16tpi thread, you can make your own
- Ruth Niles  
Pendant Samples and step by step <http://nilesbottlestoppers.com/Pendant-chucks.html>
- Steve Worcester [http://www.turningwood.com/pendant\\_jig.htm](http://www.turningwood.com/pendant_jig.htm)

Additional tools/materials

- Turning supplies
  - Abranet sanding sheets [www.turningwood.com](http://www.turningwood.com)
  - Adhesive tape
    - Home depot carpet tape, or preferably
    - Woodcraft Double Faced Turner's tape 1"x36 yards <http://www.woodcraft.com/Product/2000390/3903/DoubleFaced-Tape-1-x-36-yds.aspx>
  - Draw bar shop made 1/4" all thread
  - Universal work holder (pin clamp)
    - Search Google for Universal Work Holder (there are lots of vendors)
    - Ours came from MicroMark (a slightly higher quality than found elsewhere, but pricier) <http://www.micromark.com/universal-clamp,6743.html>
  - Thompson spindle gouge <http://thompsonlathetools.com/>
  - Easy Wood Tools carbide chisels <http://www.easywoodtools.com/>
  - D-Way beading tools <http://www.d-waytools.com/tools-beadiing.html>
  - NanoTools beading tools and small carbide tool (may no longer be available, so check with supplier) <http://www.nanotoolsr.us/www.nanotoolsr.us/HOME.html>

- Jewelry and embellishment
  - Craft stores: Michaels, Joanne's, Blinks
  - Beads: The Innovative Bead Expos: [www.IBExpos.com](http://www.IBExpos.com)
  - Tool and findings: [www.JewelrySupply.com](http://www.JewelrySupply.com), [www.RioGrande.com](http://www.RioGrande.com)
  - [www.zentangle.com](http://www.zentangle.com)
  - [www.tanglepatterns.com](http://www.tanglepatterns.com)

**Alan Z. Videos that might be of interest**

Zentient1 channel on YouTube

<https://www.youtube.com/channel/UC6O1nhjNHf4lo7Ew6KbicaA>

Tips for working with woodturners tape - AAW Woodturning FUNDamentals

<https://www.youtube.com/watch?v=dMH9XYIHeeY>

AAW Fundamentals Sticky Stick - A Lathe Sanding Accessory

<https://www.youtube.com/watch?v=IsK63tSbkfg&t=89s>

Using a drawbar with a Morse taper drive - AAW Woodturning Fundamentals

<https://www.youtube.com/watch?v=Sqg6ClrWk2k>

Using a Morse taper collet in a wood lathe's tailstock

<https://www.youtube.com/watch?v=23VmTDUIQxg>

AAW Fundamentals - Using Magnets in the Woodturning Shop

<https://www.youtube.com/watch?v=cWLNi8kelw4>

Using Live Video in Woodturning Projects

<https://www.youtube.com/watch?v=0kYF3fgwhBs>

Using an inexpensive CCTV camera in making a woodturned hollow form

<https://www.youtube.com/watch?v=pidLwThKHSw>

Woodturning with Physical Limitations

<https://www.youtube.com/watch?v=3gu4Rg8RZBg>

Rethinking Woodturning Demonstrations – 2016

<https://www.youtube.com/watch?v=PnxKFbc0tnk>

Rethinking Woodturning Demonstrations – Panel Discussion 2017

<https://www.youtube.com/watch?v=UjAKn3pzvWc>

**Lauren Z. Video**

Anatomy of a Wood Lathe

<https://vimeo.com/206116445>

Personal Protection for Woodturners

<https://vimeo.com/253526223>

**Older pendant tutorials made by others**

Tutorials

- <http://www.penturners.org/forum/showthread.php?t=49636&highlight=pendant>
- <http://www.penturners.org/forum/showthread.php?t=55731>
- <http://www.penturners.org/forum/showthread.php?t=316>

Videos

- [http://yoyospin.com/videos/pendant\\_1.wmv](http://yoyospin.com/videos/pendant_1.wmv)
- [http://yoyospin.com/videos/pendant\\_2.wmv](http://yoyospin.com/videos/pendant_2.wmv)



## TURNING 27

WITH ALAN & LAUREN ZENRICH

[<Link to List of Demonstrations>](#)

### Embellishing your Projects with Archival Inks and Other Materials

*When the piece is finished, it will be held, hopefully worn, and viewed up close and personal. We want to make sure it is as textured and interesting as possible. The old adage “less is more” doesn’t apply in this case. We want to think about color and design juxtaposition, light, shading and layers of drawing, and whether or not to use the grain as a guide for the design or ignore it completely.*



#### Wood Selection

- Look for light, less-figured wood.
  - The grain should be tight enough not to impede the flow of the pen.
  - Maple, ash, holly, sycamore, yellow heart, dyed or bleached wood
- Working with ink on wood is different from working on paper or canvas. The color and flow of the ink will be different for each piece, so test a small piece first.

#### Design

- Depends on the qualities of the piece you will be working on.
- Even though a wood is lightly figured with less prominent grain, the grain can still be used as a roadmap for the design.
- The natural wood can be another color in our palette.
- If feeling less adventurous, or have a specific logo to draw, map out the design in pencil first, which can be erased after the design is drawn in pen.
- The Zentangle drawing technique uses sections called “strings” into which designs are drawn. It is a very pattern-oriented method. Designs created by zentanglers can be viewed and downloaded at no cost at
  - [www.Zentangle.com](http://www.Zentangle.com)
  - [www.TanglePatterns.com](http://www.TanglePatterns.com)
- Workbooks, coloring books, observation, take photos, observe, and draw, draw, draw

**Setup, Tools, Supplies and Materials**

Lauren uses a rig that is set up with a light to illuminate her subject, and a photographic ball head that is modified to accept the Joyner indexing plate. You want to be able to work from all directions. The ball head allows easy rotation of the piece. We have several indexing plates in the shop, so Lauren can work on a number of pieces without having to remove them from the waste block after turning. This makes it easier to return the pendants to the lathe, centered precisely, to make changes or clean up errors.



**Archival Ink Pens – Pigment-Based**

Look for archival quality alcohol ink pens. Archival ink will be fade-resistant and purer in color than most other inks. Lauren prefers a pen as the vehicle for the ink as opposed to a paint brush. There is just more control, especially for the “texture” lines. She is always careful not to push hard on the pen. Several brands of pen are available in the marketplace.

- Copic Multiliner SP (favorite)
  - The ink is waterproof and pigment based.
  - Available with pen tip and with a brush tip.
  - The nib and ink cartridges are changeable so you only have to buy the pen body once.
- Faber-Castell Pitt Artist Pens
  - Pigmented India Ink in multiple nib sizes and 58 colors. The ink is waterproof, lightfast, acid-free, and pH-neutral.
  - The pens are not refillable or replaceable.
  - They have sets of colors and shades such as Landscape Colors and Shades of Gray.
- Pigma Micron Pens
  - Acid-free and archival.
  - The pen and brush tips are not replaceable or refillable.

**Archival Ink Pens – Dye-Based**

Copic Sketch Markers are dye-based alcohol pens that are less rich, but more translucent and easily blendable than the pigment-based pens, and they come in nearly 400 colors. However, be aware that using a wipe-on finish might wipe off or smear your work when using dye-based pens, so use a spray.



- Two tips on each pen produce a range of strokes from fine lines to wide color fills.
- Can be used with the Copic Airbrush System
- The ink cartridge is refillable.
- Pens can be found online and at art/crafts stores
  - [www.Amazon.com](http://www.Amazon.com)
  - [www.dickblick.com](http://www.dickblick.com)
  - Michaels, Jo-Ann’s, AC Moore and other fine craft stores

### Hold and Rotate

Use a bean bag or photographers ball head or other custom setup

A wrist rest allows Lauren to anchor her pinky finger as well as support her wrist. Anchoring in this way helps stabilize her hand and makes her drawing more precise.

### Magnification & Lighting

Magnification – Lauren usually use a headband magnifier with 5x magnification. She sometimes use the camera on her iPad mini to magnify a section, especially when working on a specific drawing, but this takes some getting used to since the hand-eye coordination is different than when using the headband magnifier.

- Head magnifier – 5x magnification
- Use cell phone or iPad with Camera App
- Camera-Lucida App (<https://itunes.apple.com/us/app/camera-lucida/id362499096?mt=8>) to overlap graphics
- Using Live Video in Woodturning Projects  
<https://www.youtube.com/watch?v=0kYF3fgwhBs>

Lighting – Ikea 201.696.58 Jansjo Desk Work LED Lamp Light

### Airbrushing with Ink Pens

Copic Airbrush System – Insert the broad or medium-broad end of a Copic Original Marker or Sketch Marker into the air grip and hook it up to an air compressor or compressed air can. Changing colors is as easy as switching markers. The tips are interchangeable.

### Drawing, Shading, Blending, Texturing

- Do not be afraid to draw over your drawing. Make sure to use the workable fixative between layers.
- Pay attention to the light source. Shading, usually with a brush pen, adds depth and a 3-D quality.
- Drawing hash marks, straight and curvy lines, circles, etc. with different size and color pens creates another level of texture, shading and interest to the piece.
- Once you start drawing with the ink, it is difficult to erase, unless you get to it immediately. A kneaded eraser works best. There is a “pencil” eraser (the lead is the eraser), which is good for getting into tight areas.
- New design opportunities are created if you draw something unexpected. If you really don’t like what you have done it can always be sanded, or go back to the lathe, turn it off and start over, or start on another piece.

### Working and Finishing Techniques

Workable Fixative – After each section, it is important to take the piece outside and lightly spray it with a workable fixative. This is not a final finish. This kind of spray is used for charcoal and pastel drawings to prevent smudging and works very well with the ink. The workable fixative dries almost instantly, and you can continue with the area you were working, or go on to the next section

- Blick
- Krylon
- Grumbacher

Final Finish – We use Polycrylic or WTF as the final finish. Hang the pendant by a wire in a box and lightly spray both sides. The wire is fastened to the finding attached to the necklace, making sure to mask it with blue artist tape so it is protected from the spray. The Polycrylic finish takes about a half hour before spraying again. After the first two sprays, gently rub the pendant with 0000 steel wool to remove any roughness. Spray each side a total of 3 or 4 times.

When the pendant is completely dry, use Renaissance Wax and a soft cloth to buff it to a light shine. Renaissance Wax minimizes fingerprints on the piece.

- Minwax water-based Polycrylic spray (clear semi-gloss, gloss, satin)
- Woodturners Finish by General Finishes (WTF)
- 0000 steel wool (first 2 layers)
- Polish with Renaissance Wax & buff

If using dye-based inks, do NOT use a rub-on finish or you will rub OFF your work

### **Assembling Beads Into the Center of a Pendant**

Your design may include a hole in the center of the pendant into which to hang beads. You will need to use a long pin finished with a loop from which to hang the chain.

Use a Dremel tool on a vertical stand, with a very small carbide bur. The pendant is held in a micrometer stand, which allows for precise positioning of the drill bit, and it cushions and protects the piece. The carbide bit should be the size of the pin that will be inserted. Drill the hole through from the top of the piece to the top of the hole.

Determine by eye where the pin will be connected to the bottom of the hole. Carefully drill a short hole at the bottom of the pendant hole for the pin to fit into.

Insert the pin with the loop at the top of the pendant. Fill the pin with the beads and carefully insert the bottom of the pin into the hole drilled at the bottom of the pendant hole.

Add a little wax around the hole so any CA will not stick. Insert a drop of medium CA into the holes using the tiny applicator.



### **Making the Necklace**

There are many ways to attach a chain to a pendant. Sometimes we will turn an off-center hole at the top of the pendant, using the eccentric backer plate during the turning process. A jump ring can be attached (if the hole is very close to the top) or, if the hole is large enough, the chain can be threaded through and back out, creating a knot.

Preferred method is to drill a very small hole in the top of the pendant (see Assembling Beads section). A tiny silver or gold screw eye finding is carefully inserted into the hole, and a drop of CA glue is added for extra hold.

Another way to attach a necklace chain is to use a finding with a combination pin back and a bail. A bail is a component with a loop that is attached by glue to the back of a pendant; a chain is passed through the loop so the pendant will hang from the chain. Adjustments will need to be made if beading is included on the chain. This type of finding allows the owner the flexibility of wearing a hanging necklace or a brooch. The pendant will not have the tendency to flip as much with this finding.

Of course, necklaces can be embellished with precious and semi-precious stones and all sorts of beads that complement the design. Beading is an entirely different subject and can be very addictive.

## ABOUT THE ARTISTS

### STUART BATTY

Boulder, Colorado

Email: [stuartpeterbatty@gmail.com](mailto:stuartpeterbatty@gmail.com)

Stuart is a third-generation apprenticed woodturner, being a full-time production turner and teacher in his father's studio at age 16. At 19, he started working for Craft Supplies in England, at the time the world's largest supplier to woodturners. During his 6 years at Craft Supplies, he was the in-house woodturning teacher and demonstrator. He set up Craft Supplies' first sawmill and was in charge of their import business that sold more than 300 exotic woods around the world. Stuart also developed and tested woodturning tools for Robert Sorby.



Stuart has been a professional woodturner for 37 years. Stuart's style of work is greatly influenced by his background as a spindle turner with precise cuts and sharp detail. Stuart uses very simple tools and tool shapes to create his pieces. His work is pure lathe work, with no carving or surface texturing. Stuart also has artwork displayed in the permanent White House collection. Stuart believes we have only skimmed the surface of the potential of a wood lathe. With production woodturning as his background, his foundation in woodturning helped him perfect the "Push Cut" style and other useful techniques, such as "Negative Rake Scraping".

[<Link to List of Demonstrations>](#)

### JIM BURT

Knox City, Texas

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Email: [jaburt999@aol.com](mailto:jaburt999@aol.com)

Jim began turning wood in 1991. He is a member of the South Plains Woodturners and has demonstrated at a number of clubs. In addition to classic forms, he enjoys turning novel, exploratory forms.



[<Link to List of Demonstrations>](#)

### ANDY CHEN

College Station, Texas

Email: [andychentx@gmail.com](mailto:andychentx@gmail.com)

Andrew (Andy) Chen is from College Station, Texas. He is a self-taught wood enthusiast and has been woodworking almost his entire adult life. Early on he built furniture entirely with tight-fitting joinery (without nails and screws). This provided him with the knowledge of cutting wood accurately that is the foundation for the segmented turning that he started in 1992. He is a well recognized turner and has demonstrated at numerous turning clubs and regional and national symposia and internationally. He has taught at Arrowmont. His woodturnings are in many private collections. His segmented work has been shown in galleries in Kerrville, TX (Kerr Arts and Cultural Center), Houston, TX (Houston Center for Contemporary Craft) and they were represented by Whistle Pik Galleries in Fredericksburg, TX. He was invited to participate in a del Mano Gallery's exhibition, Piece by Piece, in 2013. His work has also been included in the photo gallery of Ron Hampton's book: Segmented Turning: A Complete Guide. He is the founder and de facto president of the Brazos Valley Turners in the Bryan/College Station area of Texas since 1998.



[<Link to List of Demonstrations>](#)

**JIM CREEL**

Hammond, Louisiana

Email: [jscreeel@charter.net](mailto:jscreeel@charter.net)

Jim Creel started woodturning in the mid 90's to make chair rungs for antique chairs, then the lathe was pushed to a back corner of the shop. Jim's main focus was on woodcarving and flint knapping that consumed his hobby time. It wasn't until 2009 that he pulled the old lathe out of the cobwebs and dust and started to turn a few bowls and functional items to go along with the woodcarving. Then the bug bit deep and after retiring, Jim became fully immersed with every concept of turning. Going through the gambit of every phase of turning, bowls, pens hollow vessels, piercing and carving, he saw his interest headed more to the artistic side of turning. By 2012 Jim was a full time turned wood artist. Within the next two years, Jim had been the featured 3D artist in several galleries, and made the back cover of the American Woodturner magazine December 2014 issue, demonstrated at the SWAT Symposium, and assisted at John C. Campbell folk school teaching finial turning. Feeling the need to share his turning skills, he began traveling around the southeast giving demos and workshops at numerous clubs and organizations. Jim continues toward the artistic side of turning, using many things to enhance his creations. From metallic paints and patinas, to carving, to copper leaves and wire, all blend together to express Jim's art form.

[<Link to List of Demonstrations>](#)**JERRY DE GROOT**

Pipe Creek, TX

Email: [jerrydegroot37@yahoo.com](mailto:jerrydegroot37@yahoo.com)

Jerry DeGroot grew up on a farm in Michigan, where he began his artisan career as a scientific glassblower at Michigan State University, also producing glass wedding cake tops as a side business. After moving to San Antonio, Texas, in the mid-1980's to expand his glass business, Jerry's interest in woodworking began, and he started to add scrollsaw work to his glass wedding cake tops. He eventually retired from the cake top business to do woodworking full-time. He opened a sawmill operation in Pipe Creek, Texas which allows him to get the raw materials for his art just right. Jerry's scrollsaw art focuses on unique 3D ornaments, wall plaques and woven baskets. Working mainly in mesquite for its strong, unique grain and stable properties, his woodworking operation was featured in *Scrollsaw Woodworking & Crafts* magazine. Always open to new things, a decade ago Jerry stumbled into a woodturning class. Right away, he knew it was for him! Now, Jerry turns almost every day, specializing in hollow Christmas tree ornaments and bowl work.

[<Link to List of Demonstrations>](#)**CINDY DROZDA**

Boulder, CO

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\*\*\*No information available\*\*\*

[<Link to List of Demonstrations>](#)



## **DENNIS FORD**

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Website: [denniswoodart.com](http://denniswoodart.com)



I grew up in Morton Texas and now live in Lufkin Texas. I love building things, there is a sense of satisfaction from knowing "I made that" whether the item is wood, metal, concrete or software. I have enjoyed woodworking most of my life. I have a good set of woodworking tools that I have accumulated over the years and a few metal working tools. I do mostly wood turning, it allows me to focus on "form" more than "function". The lathe is my primary tool, most of the other tooling is used to support my wood-turning.

My inspiration comes from many sources, but the main source is in the wood I use. The swirling grain patterns and subtle colors contain a natural beauty that I try to display in a finished item. One challenge is to visualize an item inside a chunk of wood. The next challenge is to cut away everything that is not that item.

I use mostly local wood, and often am given wood from trees that were blown down by storms. The pieces that most people do not want make the best turnings (crotch sections, burls, spalted wood etc.) I sometimes use purchased wood for small items or for accent pieces on larger work.

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## **KEITH GOTSCHALL**

Salida, Colorado

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Website: [keithgotschall.com](http://keithgotschall.com)



Keith's background is in woodworking, having been in the furniture making business since the early 1980s. He ended up at a firm that specialized in unique furniture designs, eventually becoming shop foreman. The furniture was wacky, and a real challenge to build. Eventually, Keith and another employee pooled their resources and opened their own shop. That was in 1989, and for the next ten years he built and designed his own furniture, for public and private clients, in and out of Colorado.

During an Open Studio gallery tour Keith was re-introduced to the world of woodturning. Not only was the old fire rekindled from way back in high school, he immediately saw that woodturning had taken on a whole new place in the world. Immediately hooked, Keith bought a lathe, chuck and tools by the end of that month. Within a years time, he had turned his focus to production wood turning. Keith made salad bowls for the wholesale market, craft type items for weekend art and craft shows, and hollow vessels etc. for the gallery market. In 2002, Keith moved to Salida, Colorado, a small town of 5,000 or so. He now works on production and architectural projects, some art work as well as the occasional furniture commission. Keith still works with a few galleries, as well as, traveling the country doing demos and hands on teaching. He has taught classes for John C. Campbell folk school in North Carolina, Craft Supply in Utah, Anderson Ranch in Snowmass Colorado and for the Center for Furniture Craftmanship in Maine.

Currently, Keith has his shop right next to his house, 900 square feet of workspace, though it is often full of wood chips, dust and projects. He works on a VB-36 lathe for bowl work, a converted Vicmark long bed that can turn 12 feet between centers, and a couple mini lathes as well. He also has a full set up for making furniture etc. Keith enjoys the older cast iron

machines, and has found some real gems that he has reconditioned for use; in particular an 8 foot long jointer made by Yates, circa 1940.

For fun, Keith skis, hikes and climbs. He mountain bikes and is an avid archer and shooter as well. Though Keith loves to travel, he very much enjoys living in the Colorado mountains. Keith is a member of his county's Search and Rescue team and gives back to his community in this way. He has recently purchased a motorcycle and enjoys exploring the old mining districts and ghost towns in his area.

In his demos, Keith likes to reflect on the confusion and difficulty that he experienced when he started. Though Keith had a head start with his furniture work, knowing about wood, and edge tools, and sanding /finishing; it took a little while to really understand what was going on with the turning. He was lucky to have some very good teachers, some of the best in the world! Keith tries to bring the enthusiasm of a beginner to his demos, and also clear up and address some of the problems that we all face in our turning. Keith often has people come up afterwards and thank him for going over "the basics". Many have never mastered the basic cuts in woodturning and get frustrated when trying them. Keith really enjoys when he sees confusion turn to enlightenment of the faces of attendees, even advanced turners often learn something in the most basic of demonstrations.

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## **ASHLEY HARWOOD**

Charleston, South Carolina

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Instagram [@ashleygharwood](#)



Ashley Harwood currently lives in Charleston, SC, where she creates her work and teaches at her personal studio. She has demonstrated in a number of professional venues throughout the US and abroad, as far away as Australia. Her teaching focuses on fine spindle turning and the Push Cut method of bowl turning along with the 40/40 grind on a bowl gouge. She received a BFA from Carnegie Mellon with a focus in sculpture and installation art, and her design aesthetic is heavily influenced by her background in glassblowing. When she is not teaching, Ashley creates custom production turnings for various clients including furniture, hardware, and lighting companies. Her own works are pieces that are completed entirely on the lathe, without carving, texturing, or burning. She uses simple, classic forms along with distinctive design elements that result in an approachable body of work with a high level of craftsmanship. The scale of her work spans from delicate finials to massive table pedestals that weigh hundreds of pounds when mounted on the lathe.

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## **GEORGE HATFIELD**

Sydney, Australia

My name is George Hatfield I live in Sydney Australia. A brief resume of my experiences: ~ at the age of sixteen I successfully completed a woodturning apprenticeship in a furniture factory, which manufactured reproduction period furniture. Sixty years later (including retirement) I am still in the field of woodturning. During that time I have spent eleven years in the trade of woodturning in furniture factories, and thirty-five years as teacher of Woodmachining and Woodturning teaching apprentices at a Government Technical Colleges in Sydney Australia. In January 2003 I retire from my real job but still feel I have a lot share. I have also done a considerable amount of demonstrating nationally and internationally. I have demonstrated in all states of Australia, and in England, USA and New Zealand.



## 27<sup>TH</sup> SWAT SYMPOSIUM

I presented a paper on Woodturning Education in Australia at the first World Turning Conference in Delaware USA in 1993. I have demonstrated extensively all over America including Delaware, New Jersey, Maryland, Washington DC, Tennessee, Texas, Alabama, Georgia, Washington State, Oregon, Kansas, California and New York. The 1997 AAW National Symposium in San Antonio Texas, 2001 AAW National Symposium in Tacoma and the 2004 AAW National Symposium in Orlando. My demonstrations were videoed by the AAW at the San Antonio and Orlando symposiums.

I have been an associate editor for the "Australian Woodworker" magazine for over twenty years. During that time I have had over one hundred woodturning articles published. I have also had over thirty articles published in the English "Woodturning" magazine and several published in the AAW American Woodturner, the most recent "The Cutting Process" in the Summer 1999 edition.

One of my articles "Skewing a Bead" was used on the AAW Internet web sight as an example of the educational information supplied by the AAW. I specialize in Architectural (traditional) detail woodturning and after sixty years experience in the woodturning field I feel I have a great deal to offer.

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### ZAC HIGGINS

Carson City, Nevada

Website: [nvwoodwerks.com/](http://nvwoodwerks.com/)

Instagram [@NVWoodwerks](#)



Zac has been a woodworker for over a decade, and caught the woodturning bug in 2012. With a desire to create unique pens using local materials, he learned about resin casting and quickly realized that any material could be cast in resin and turned on a lathe. After he cast his first batch of pen blanks, he was hooked. Resin casting and blank making has become his passion leading to a full time business selling unique pen blanks to other pen makers.

Having so much fun with the craft, he decided to share the knowledge he had accumulated over the years and hopefully introduce others to the wonderful world of resin casting and blank making through YouTube. Experimenting with different materials cast in resin has become an obsession and eventually led to his popular "Dunkin Junk" series on YouTube where anything and everything is dunked in resin to see how it will turn out. In 2014, he started live streaming his Dunkin Junk experiments on the internet where the audience can watch the entire process live and even participate choosing materials, colors, and what types of blanks to make. The best part of resin casting for Zac is there is always something new to try out.

When he's not playing with resin, Zac is an avid snowboarder in search of fresh powder and could never turn down a good action movie!

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### JEFF HORNUNG

Florissant, Missouri

website: [thewalnutlog.com](http://thewalnutlog.com)

Email: [me@jeffhornung.com](mailto:me@jeffhornung.com)



I was born in St. Louis in 1968, raised in Maryland Heights and currently live in Florissant. This area is my home, my stomping grounds and sometimes the source of my current canvas...wood. Starting in 1984 I watched, helped and then worked in the family ceramics business. Casting, cleaning greenware, glazing, running kilns and sweeping up. In 1991 the business morphed into a retail florist and I worked my way up to Lead Fresh Floral Designer. I still carry an FTD Master Floral Designer

certification and worked in the industry for 24 years. During these years I was also a musician (piano, sax, bassoon and bass guitar) and a Dj, running my own mobile company and working in 2 popular local clubs.

In spring of 2011 all of that changed. A car accident caused a minor concussion and major post-concussion syndrome complications that created a physical disconnect between my creative mind and the logical side. Creativity was literally “turned off” for most of 18 months. My wife “made” me take a class at John C Campbell Folk School to get away and relax for a week. Woodturning was what I picked even though I had no experience but could probably identify a lathe if I saw one in a catalog. First day of class I really didn’t want to be there and had a serious headache. We had spent a lot of money to get there so I decided to just give it a try. Now, I’m sure this isn’t what actually happened but the way I remember it is the moment the tool touched the first piece, my headache stopped. I had an old wobbly lathe lined up off Craigslist by the time we got home, and haven’t looked back since. I really started working on making pens as that’s all I could do with the equipment I had. With some experience and confidence, I bought more equipment and ended up going back to John C Campbell for another week of class. For the record, JCCFS is now one of my absolute most favorite places on the planet and I have been there 5 times with the 5th trip as an actual assistant woodturning instructor.

In March of 2016 I left the floral industry to pursue woodturning full time. As a supply vendor my company, The Walnut Log LLC, has grown in leaps and bounds. I can provide other woodturners with the products they need to pursue their passion. As a woodturning artist, my own work has also grown to the point where I have recently stepped out from beneath the banner of “The Walnut Log” and am actively establishing myself as an independent. I have pieces in two museums and private collections, several local specialty shops, art galleries and just released my very first full collection at the Craft Alliance Gallery Shop

I have been one of the woodturning instructors at the Craft Alliance Grand Center location for over 2 years and love being able to share what I have learned with my students. I’m also now one of the Studio Chairs and run with Woodturning studio as well. I have several private students who come to my studio on a regular basis, am a local woodturning demonstrator, a regional Symposium demonstrator and in June of 2018 I cross the pond to become an International Demonstrator as well.

October 7, 2017 marked 5 years as a woodturner. My work continues to evolve and St. Louis continues to inspire me.

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## **SAMMY LONG**

Brandon, Mississippi

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As a young person, being an artist was the last thing I ever thought I would be. Both of my parents had tinkered with crafting, but none of their projects interested me. Following high school, I enrolled in a technical program to become a machinist. Little did I know that those skills would be used to create my work. I spent most of my career working in the gas pipeline industry.



I guess you would have called me a tinkerer. I had a little shop behind my house and when my children were young, we were always building something or fixing something. It wasn’t until my father-in-law cleaned out his shop and gave me a simple small wood lathe that I found my passion. I began by turning some candle sticks from discarded pallets, then small bowls and weed pots. I began going to classes each summer. My wife always compared my classes to summer camp because I was always so excited to leave and even more excited when I came

## 27<sup>TH</sup> SWAT SYMPOSIUM

home with new skills and projects. I learned from many master turners who each left a mark on my work. Currently, I teach and demo for local clubs, The Mississippi Craftsmen's Guild and have taught at the Appalachian Center for Crafts. Woodturning has allowed me to use gifts that I didn't know I had. I have met and turned with some outstanding turners who are also outstanding men and women I now refer to as my friends. Power carving has been my greatest challenge since taking a class from Dixie Biggs in 2013. She continues to inspire me as I pursue my latest passion.

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### TOD RAINES

Allen, Texas

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[woodturningtoolstore.com](http://woodturningtoolstore.com)



I enjoy the process of turning and I use a mix of planning and serendipity as the creative process evolves. Since woodturning is a subtractive art form there needs to be some planning involved along with knowledge of the natural medium and its tendencies. It is the unknown and spontaneous nature of working wood that intrigues me but also the process of how to get to the final piece. I enjoy showing others this craft and enabling their wonder in what is hidden within the wood.

I got involved with the Dallas Area Woodturners club (an American Association of Woodturners affiliate) in 2007, which connected me with the woodturning community. Through the club and its many members, I learned and grew a lot as a turner. In 2016, I became the treasurer of our club and continue in that position today.

After a long tenure in the telecommunication industry, which ended in 2016, I decided that I needed a new direction in my work life. With the loving support of my wife, in April of 2017, I started Woodturning Tool Store, an e-commerce business selling woodturning tools.

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### TONI RANSFIELD

Phenix City, Alabama

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Website: [www.Exclusivdesignz.com](http://www.Exclusivdesignz.com)



Toni Ransfield is an Award Winning Polymer Clay Artist and an acknowledged Pen Maker. Her Polymer Clay art has been seen all over the world through numerous publications. Originally from the Beautiful Garden State, New Jersey she is now residing in Alabama. She has been working with Clay since the 80's and discovered Polymer Clay in the early 90's. Polymer Clay provides her with the versatility to create a multitude of designs given the vast color palette that the clays offer.

Her inspiration comes from nature and her surroundings. Millefiori, which is an ancient glass technique, meaning "one thousand flowers", is her true passion. Making large canes with a pattern that can be seen throughout the whole cane and then applied in slices to create a beautiful array of She has taught in Alabama, New Jersey, New York, North Carolina, Connecticut, Tennessee, Georgia and New Zealand and has been featured in several print pieces, including a Kurt Hertzog article, "Journey from Penturning to Pen Making," for Woodturning Design magazine (June 2013). As well as, a proud member of The Pen Makers Guild.

You can see some of her amazing pens on her website [www.Exclusivdesignz.com](http://www.Exclusivdesignz.com), as well as, purchase pen blanks for making your very own pens [www.claypenblanks.com](http://www.claypenblanks.com) AND you can buy

Polymer Clay Canes to design your very own creations from her Etsy shop  
[www.etsy.com/shop/toninz](http://www.etsy.com/shop/toninz).

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## **JOHN SCHLOBOHM**

Dickinson, Texas

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\*\*\*No information available\*\*\*



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## **LEE SKY**

Oakland Park, Florida

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Website: [leeskywoodart.com](http://leeskywoodart.com)



I've worked with my hands most of my life, taking apart everything I could get my hands on as a child, to building tree forts with neighborhood friends and working construction in my early teenage years with my dad back home in Iowa. Every year, junior and senior high school woodshops and metal shops were my favorite courses.

I began woodturning in 2000, taking a class at our local Woodcraft store, and soon after joined the Gold Coast Woodturners. George Snyder allowed me to join him in his shop in Oakland Park, Florida, where I spent all my free time turning mountains of shavings. I purchased all his equipment from his wife after he passed away in 2004, and it has been my studio since.

What draws me to woodturning are the limitless opportunities we have when starting with a wood blank and the instant gratification creating a new piece. I love taking a raw piece of wood and creating art by featuring the grain patterns, bark inclusions, color variations, and movement inherent with this medium.

I've been a chapter mentor since 2003 and began as a woodturning instructor in 2004. I've served as vice president and president of Gold Coast Woodturners and am a current member of Palm Beach County Woodturners, South Florida Woodturners Guild, and the South Florida Woodworkers Guild. I enjoy teaching and tool making and demonstrate frequently both locally and in the Bahamas.

[<Link to List of Demonstrations>](#)

## **JOHN SOLBERG**

Denton, Texas

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I was first introduced to the lathe at the Keller Middle School about 15 years ago when my wife asked me to go with her to a woodcarving class she was taking. Not being a carver I was able to use a lathe they had in their wood shop and turn my first pen. After that evening I was hooked and the next week I had my first lathe, a Jet Mini. In 2007 I attended the AAW

Symposium in Portland OR and bought a Powermatic 3520B from Woodcraft at the show. After turning about 1,000 pens I have moved on to turning just about anything both between centers and side grain in a chuck. I particularly like turning bowls for the Empty Bowls Program.



## 27<sup>TH</sup> SWAT SYMPOSIUM

I am an active member of three woodturning clubs. The Dallas Area Woodturners, Woodturners of North Texas in Fort Worth, and the Golden Triangle Woodturners of Denton. I enjoyed the challenge of being President of GTW a few years ago. I have attended SWAT ever since I became interested in woodturning and have been a demonstrator three times. Demonstrations include: A Closed End Pen, An Off Axis Duck, and The Bruised Brothers with Peter Tkacs on Vacuum Chucking.

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### JAMES THURMAN

Denton, Texas

Website: [www.jamesthurman.com](http://www.jamesthurman.com)



James Thurman is an Associate Professor at the University of North Texas' College of Visual Arts & Design, where he coordinates the 3D Core program as well as teaches in the Metalsmithing & Jewelry area. He received his MFA in Metalsmithing from the Cranbrook Academy of Art and his BFA in Sculpture from Carnegie Mellon University. In 2010, he completed a four-year term on the Board of Directors of the Society of North American Goldsmiths and is now currently serving as Editor of Technical Articles for the organization. In 2012, he was a Fulbright Specialist Scholar, working with Kadir Has University in Istanbul, Turkey, on curricular development.

A prolific and highly active studio artist for more than fifteen years, his work has been included in hundreds of national and international curated and juried exhibitions as well as ten solo exhibitions in the past ten years. In addition to the exhibition of his work, James regularly lectures and gives workshops about his work and the unique technical aspects of his studio production, including a laminated composite material he developed, "Thurmanite." Recent engagements have included The Glass Furnace (Istanbul, Turkey), Penland School of Crafts, Arrowmont School of Arts and Crafts, the Museum of Fine Arts Houston Glassell School, Pittsburgh Center for the Arts, and the Yuma Symposium.

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### DAN TILDEN

Ashland, Oregon

Website: [tildenwoodturning.com](http://tildenwoodturning.com)



Fine woodworking is my passion. Using the natural features from the tree, I turn hollow vessels, pots, and bowls on a wood lathe to create an elegant shape while keeping the piece in the most natural state possible. Using a natural edge opening, drying wet wood to warp and move, and using a knot or void in the shape adds character to the piece and lets the piece "speak for itself". What some woodworkers may consider a flaw in the wood, I use to my advantage.

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### CRAIG TIMMERMAN

Austin, Texas

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Website: [armadillowoodworks.com](http://armadillowoodworks.com)



After many years in the computer and software industry, Craig Timmerman has been a full-time artist and production wood turner since 2008. In addition to demonstrating and teaching at many AAW chapters, he has demonstrated at AAW Symposiums, numerous SWAT symposiums, the Utah Symposium, the North Dakota Symposium, and the Rocky Mountain Symposium.

He picked up woodturning twenty years ago when he took a weekend class at a local store. After that weekend the wood working equipment in his shop ceased to be used for anything except woodturning. His specialties include non-round turnings, hollow forms, spheres, lamps, and production gift items. Many of his pieces combine multiple turnings and bent laminations. He works primarily with reclaimed timber accentuating the flaws by making them the focal point of the piece; often filling them with crushed stone.

Craig's work is in several central Texas galleries and can also be found on his website, [armadillowoodworks.com](http://armadillowoodworks.com). He also does a few art shows each year, including the Armadillo Christmas Bazaar-Austin's oldest Christmas art show. He has been married to his wife Tina for 35 years and they live just outside Austin with their two cats. If life wasn't busy enough, Craig also sings barbershop and a cappella music.

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## **DONALD WARD**

Wichita Falls, Texas

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I am a retired public school teacher and I taught in Texas public schools for 35 years. I taught high school mathematics for 32 years at Holliday High School in Holliday, Texas and retired in June of 2006.

I have always enjoyed woodworking and developed an interest in woodturning in 1998. Having always loved pens, especially older fountain pens, I was quite excited in 2001 when I discovered that I could make pens on my wood lathe. I turned my first pen and was hooked. I have studied, learned, grown and developed, not only in my turning, but also in my pen making. I have become an accomplished pen maker and continue to strive to make my artwork through pens unique and beautiful. I am a member of the American Association of Woodturners, Wichita Falls Woodturners, International Association of Penturners, and have been accepted into the Penmaker's Guild. Along with my love of turning, especially pens, I find time to help new penturners develop their skills. I've done demonstrations at the Penturner's Rendezvous in Provo Utah. I was a member of a group of penturners who were successful in getting a penturning track included at the yearly symposium sponsored by the Southwestern Association of Woodturners and have demonstrated pen making at the symposium in 2005 and 2006.

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## **CORY WHITE**

Rowlett, Texas

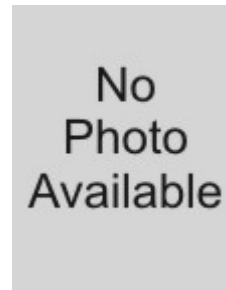
Email: [wherewoodisart@gmail.com](mailto:wherewoodisart@gmail.com)

Website: [wherewoodisart.com](http://wherewoodisart.com)

For as long as I can remember, I have seen value in what can be, rather than what is. Recently retired after 32 years in Texas Public Education, I am now able to give my full focus to woodturning. The passion I puts into each of my pieces is a direct reflection of the joy I experiences in the creation process. I turn a variety of one-of-a-kind pieces, but each creation ensures that the stories of times past live on in new and creative forms using locally harvested north American hardwoods or from logs from trees with sentimental value or a special history.

Cory is a member of the Hunt County Woodturners, where he serves as Secretary and is on the teaching team for beginner woodturning training, the Dallas Area Woodturners, and the American Association of Woodturners.

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## **ALAN & LAUREN ZENRICH**

Oradell, New Jersey

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Facebook: [StudioZ42](#)



Alan has been turning for nine years, and in a previous life was an advertising and special effects photographer. He is spearheading an initiative to show how clubs can have demonstrators present to their group remotely, via video and audio over the Internet.

Alan is also involved in the AAW initiative to catalog available demonstrators and topics, with the goal of producing a tool to connect demonstrators and their AAW club audiences. Additionally, he is a contributing editor to the AAW Woodturning FUNDamentals and has produced a series of how-to videos for the program.

Lauren is best known for ink embellishments for her wood turned jewelry, spheres and shaving/makeup brushes. She has been turning for 7 years and works with many different media and techniques, including archival inks, piercing, airbrush, paints, pyrography, beading, wire, enamel, encaustic wax and polymer and precious metal clay. Lauren is a member of AAW and Women In Turning (WIT), and has produced videos on the anatomy of a wood lathe and one on personal safety in the workshop. She has done scenic decor for over 35 productions at her local community theater, and will be decorating her 17th children's show this year.

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