

Montgomery County Woodturners

Volume 2012, Issue 3

March 2012

MCW Newsletter



Montgomery County Woodturners

http://montgomerycountywoodturners.org

Next Meeting and Demonstration (Gary Guenther)

The next meeting will be:

Time: 7:00-9:00 PM Location: Woodworkers Club 4950 Wyaconda Road Rockville, MD 20853 (301) 984-9033	Date:	Thursday, March 15, 201
Location: Woodworkers Club 4950 Wyaconda Road Rockville, MD 20853 (301) 984-9033	Time:	7:00-9:00 PM
(001) 00 - 0000	Location:	Woodworkers Club 4950 Wyaconda Road Rockville, MD 20853 (301) 984-9033
		(001) 504 5000

<u>Agenda</u>

6:45 -7:00 PM Bring a chair, if you wish... be sure to wear your name tag... meet and greet other members... register your items for Show & Tell with Richard Webster... bid on Silent Auction items... sign out and pay Clif Poodry for videos from the club's Lending Library.

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- 7:00 7:15 PM Business Meeting and Show & Tell
- 7:15 8:50 PM Program: David Ellsworth A Hollow Form and a Bowl
- 8:50 9:00 PM Pay for and retrieve your Silent Auction items, pack up, put the lathe and space back in order.

March Program - David Ellsworth

Would you like to spend an unforgettable evening, up close and personal, with world-famous and highly-respected master turner, teacher, author, and tool-maker David Ellsworth? Well, you can do just that on Thursday, March 15 at the Woodworkers Club because he's here for his second visit to MCW, and we are all very excited about it.

Do I really have to say anything about David Ellsworth – probably the most famous woodturner in the world? Not really, but I will anyway, just for the record. David is an icon and a living legend in the woodturning community. Over the past thirty years, David has become known as one of the premier creators of turned wooden vessels. For starters, David "invented" the technique of "blind turning" thin-walled hollow vessels through a small



hole with his home-made bent tools. (His first article, titled "Hollow Turning," appeared in the May/June 1979 issue of *Fine Woodworking* magazine.)



March Program David Ellsworth (cont.)



David is known as a phenomenal teacher. His demos in St. Paul were SRO and far out the doors. David's classic new book is highly recommended and considered by many to be a definitive reference for woodturners. His signature bowl gouge remains one of the current standards. Oh, and he's also a great guy!

His list of achievements and awards is lengthy. David is a founding member of the American Association of Woodturners (AAW); he was its first President from 1986-1991, its first Honorary Lifetime Member, and the most recent POP Merit Award winner. Very appropriately, he got the cover of the June 2011 issue of *American Woodturner* for the 25th anniversary, and there is a very nice article inside. He has written over 50 articles on subjects related to woodturning and operates the Ellsworth School of Woodturning at his studio in Bucks County, PA, where

his classes are perennial favorites. Some of our members have enjoyed his course and hospitality.

You will find his works wherever you find fine turned wood objects. They are included in the permanent collections of 35 museums, including the Smithsonian American Art Museum, the Metropolitan Museum of Art in New York City, the Philadelphia Museum of Art, the Victoria and Albert Museum in London, and the Mint Museum of Craft + Design in Charlotte, North Carolina, as well as countless national and international private collections, including the White House. He was recently honored in Washington, D.C. as a Fellow of the American Craft Council. For more, see <u>www.ellsworthstudios.com</u>. (Check out the interviews.)



For his demo, David will first turn one of his classic hollow forms for us, and he will finish up with a standard bowl form. He has graciously agreed to critique our Show & Tell items (there is a limit of one piece per person), so bring something you would like an honest opinion about. This is how we learn! We'll also have a book signing at the end, so bring your book, if you already own one, or plan to buy one at the store – there will be some available for purchase.

Please come and personally welcome David back to Rockville. You don't want to miss this! Note that, to accommodate David's visit, this event is *one week later* than our normal meeting day. There is a \$10 demo fee. You can't beat that!

Special Points of Interest:

- 2012 MCW Dues
- Beginner's Corner
- Article on Metallurgy
- Woodturner News

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President's Perspective (Bill Long)

We didn't have a 'President's Perspective' for the February Newsletter. Something about yours truly 'getting his feet on the ground' after being elected at the January meeting. Now my feet are officially on the ground and it is time for me to 'give back,' as we say.

The last year has been a profound one for me: returned to turning with the nudging of Norm Sartorius and Steve Keeble; went to David Ellsworth's seminar at the Renwick Gallery in October 2010; attended my first meeting of the Association in November as a guest at the invitation of Phil Brown; joined MCW and the Wood-



workers Club the next month; took Clif Poodry's advanced bowl class at WWC in January 2011; went off later that month to Quakertown, PA, to take David's class; went to the AAW seminar in July; participated with two pieces in the exhibit at VisArts sponsored by the WWC.

But that is just the framework for the turning I have done. All of the members of MMW have helped me along the way, as I flooded the Show and Tell tables with objects, all of which were works in progress for several months. I had to try my hand at every kind of new wood (Crape Myrtle?), to relearn how to sharpen tools, to experiment with superglue, to play with special jigs so I could do things that were a little crazy; to fuss over what finishes to use and why. Drawn, maybe driven, to turn.

Don't think that I am going to turn less, or less dramatically, now that I have taken on some administrative responsibilities. Russller helped me out by bringing one of my early pieces, a white oak goblet on a pedestal, to the critique in January 2011. David Fry felt the "emerging" piece had an almost mythic quality, but felt a natural edge for the bowl rim would have worked better... the finished edge is too stark. Judy Bernstein and Barbara Hall both were drawn to the primitive nature of the piece... how it appears to have been hewn out of a weather-beaten log. Those comments are about the woodturnings I have done and about the turner, as well!



March 2012

GENERAL ANOUNCEMENTS

MCW 2012 Dues

It is that time of the year! Please see Bill Autry and pay your 2012 MCW Membership Dues *which are still at \$20 per year*!

MCW Skills Enhancement Program

The March session will focus on any turning technique you like. The session is scheduled for:

• Friday March 16, 2012 - 10:00am - 1:00pm

A minimum of two participants are required for each session, otherwise a session will be cancelled.

MCW Picasa Picture Gallery

Pictures from last month's meeting which includes the S&T Gallery, Meeting Highlights and the featured Demonstration can be found on the MCW Picasa website at:

https://picasaweb.google.com/montgomerycountywoodturners

Financial Report (Phil Brown)

Treasury Report February 27, 2012

February Income:		February Expenses:	
Silent Auction	49	Name Tags	<u>7</u>
Name Tags	7		
Memberships	<u>60</u>	Total Expenses	7
Total Income	\$116		

Total Funds Available 1437.30



February 9, 2012 MCW Business Meeting Minutes (Tim Aley)

President Bill Long called the meeting to order and welcomed over 30 members and guests.

Bill reminded members to support the Woodworkers Club by purchasing items from the shop. We get a 10% discount on meeting days. Come before the meeting starts or the meeting will close about 8:50 to allow for last-minute purchases.

The Skill Enhancement Session in March is, Friday March 16, 2012 from 10:00 AM to 1:00 PM. Bert Bleckwenn will be there to answer questions. Bert and Bill Long will be there to answer questions.

The 2012 dues are due! Please pay Bill Autry ASAP!

Steve Drake just sent out the next Beginner's Corner. Steve updated last month's results.

Don Van Ryk gave an update to the Wounded Warrior Program at the VisArts location. Please sign up to help out.

Bill Autry mentioned that Ingrid Barns is exhibiting in the Sandy Spring Museum and that it is worth the trip.

The MCW Give-Back Challenge was drawn and Mark Verna won the bowl made by Elliot Schantz. Also Ilya Zavorin brought in his segmented bowl for Elliot from last month.

Gary Guenther mentioned that MCW has a Mentor program. New members might benefit from mentoring to improve current skills. This is not the same as the Skill Enhancement program, or taking formal classes at the shop, many of which are taught by member Clif Poodry. Don Couchman is the point of contact and will put members in contact with a mentor.

MCW has a Library of old issues of American Woodturner, books, DVDs, and other materials. Please check out the member's area of the website for a list of items in the library. Contact librarian Clif Poodry if there is something you want to borrow (\$2 per month) and he will be sure to bring it to the next meeting.

The Show & Tell items were photographed by Mike Colella and checked in by Richard Webster.

The Silent Auction table was full of apple tree chunks provided by Bob Browning.

Phil Brown conducted the Show & Tell Member Critique.

Program Chair Gary Guenther led the member discussion on selling your work.



News about our Members (Phil Brown)

During a visit to an exhibit at the Sandy Springs Museum, **Bill Autry** was invited to create and submit a piece for their upcoming juried "Love Notes" exhibit. Over a weekend he designed and carved a European "Love Spoon" with three hearts and celtic knot design, and submitted it by their deadline. From among the 58 entries, Bill's spoon took first place and sold. For an exhibit description see: montgomeryvillage.patch.com/articles/love-letters-at-sandy-spring-museum

Phil Brown will join several other James Renwick Alliance members in describing the many contributions Fleur Bresler has made over the years to promote and enhance awareness of American craft for presentation of a One-Of-A-Kind award to her by the JRA.

On Saturdays beginning at 10 AM, **Clif Poodry** teaches *Introduction to the Lathe* on April 14th, and May 19th, and *Beginning Bowl Turning* on March 3rd, April 28th, and May 26th, and *Advanced Bowl Turning* on March 31st, May 4th, and June 2th at the Woodworkers Club. To register, call 301-984-9033, or go to http://woodworkersclub.com/instruction/

Mark Supik's workshops at 1 N. Haven Street in Baltimore are:

Open Studio, \$30 for 3 hours: Saturday 9 am to noon or 1 pm to 4 pm on March 24th.

<u>The Right Start, Spindle Turning</u>: \$150/day from 8:30 AM to 5:00 PM. All materials and lunch provided on Saturdays March 10th and May 26th, and Sunday, April 15th.

Bowl Turning on Saturday April 14th, and Sundays March 11th and May 27th.

Small class sizes and all skill levels welcome. Advanced turners, please let us know the specific skills you'd like to work on so that we can have the materials ready for you. More details are at: www.marksupikco.com (click on *Get Schooled Here*), or call 410-732-8414. There is always a 20% discount for woodturning club members. For directions to the shop see: www.marksupikco.com/links/directions%20to%20shop.pdf

Show & Tell Record???

Bob Grudberg turned this nearly 3 foot tall segmented lidded vessel. He was asked by a relative at Thanksgiving how large a piece he could turn, and check out the results. One happy turner.



Segmented Lidded vessel 21 1/2" x 33" of Cherry Oak & Walnut



March 2012

Woodturners News

Phil Brown to present award at the James Renwick Alliance Gala on March 24, 2012

Fleur Bresler Receives JRA Award by Clemmer L. Montague President, James Renwick Alliance

Fleur Bresler is truly a one-of-a-kind patron, mentor, and supporter of the craft communities not only in the Washington, D.C., area, but nationally. She has generously supported the Lloyd Her-

man endowment for a curator of American craft for the Renwick Gallery and created an endowment for the current curatorial position.

The James Renwick Alliance is presenting Fleur with its highest award, the One-of-a-Kind, given to those who have contributed significantly to the craft communities. She will be receiving this award on Saturday, March 24, at the Willard Hotel in Washington, D.C., during our major fund raising event, Spring Craft Weekend.



Presenters of the award at the Gala will address the various communities in which Fleur is involved: **Phil Brown**, JRA member and wood turner, will represent the overall wood art community, Judy Weisman, the James Renwick Alliance, and Nicholas R. Bell, The Fleur and Charles Bresler Curator of American Craft and Decorative Arts, will

speak for the Smithsonian American Art Museum communities. Additionally, leaders of two organizations who have benefited greatly from Fleur's generosity have written special tributes to her in our Winter/Spring newsmagazine The *Quarterly*, Robert Buchanan and Karan Askin of the VisArts Center, Rockville, MD, and Albert LeCoff of the Center for Art in Wood in Philadelphia, (published on March 1, 2012.)

We invite you and members of your organization to attend this special evening of recognition for Fleur. Her family will be there, and she also considers those in the wood art community as her extended family.

A Bit of Wood Turning History (from Phil Brown)



I began learning to turn wood in the summer of 1975 with the aid of a book Two or three years later I was accepted in a three-day woodturning workshop organized by Albert LeCoff, his brother Allan, and Palmer Sharpless. In 1986, a year after AAW was formed, Albert LeCoff went his own way by organizing the Wood Turning Center in Philadelphia. Over the past 25 years, the Center provided important exhibiting services to woodturners, its publications helped inform the public about our field, and its annual International Turning Exchange helped expand skills, collaborative work, and artistic development in our field. The Center also developed a research library and an important collection of turned work. From its humble beginnings, it has gained direction and expanded importance from its board of directors, plus financial and material support from many sources. The Center now has a new name and location (141 North Third Street) with a large exhibit gallery, excellent open storage for its collection, library and office space, and a retail store in a prime downtown Philadelphia location. This achievement could hardly have been imagined 25 years ago.

An article about the new location and opening exhibition follows. Plan to make a visit to the Center, and also visit these spaces all within easy walking distance: Snyderman-Works Galleries (craft art) at 303 Cherry Street; Wexler Gallery (art furniture), 201 North Third Street; Moderne Gallery (Nakashima, Esherick, and other American craft furniture), 111 North Third Street; and The Clay Studio, 137-139 North Second Street. And if you like fiber, see: www.fiberphiladelphia.org/ for a list of special exhibits in March and April.



Woodturners News (cont.)

Against the Grain

A 25-year retrospective of the Wood Turning Center reveals the collection of craft and design as an adventurous art form. By Amy S. Rosenberg, Inquirer Staff Writer, February 19, 2012

A year ago, when Tyler School of Art professor Gerard Brown was asked to curate a 25-year retrospective of the Wood Turning Center, which was soon to be renamed the Center for Art in Wood, he headed for the basement of what was then the center's home, on a dead-end street at Fifth and Vine, to check out the collection.

He found a lot more than the "10,000 bowls" the center's old image and origins might have suggested. "There are issues of gender and identity, pieces that have a kind of incredible sense of humor, work that has wit and charm about it, work that ties into the history of furniture and into contemporary aesthetics.

"It's astonishing," Brown said last week, three months into the exhibition at the center's new space at 141 N. Third St., which already has been visited by close to 4,000 people. "The field came together in the '70s out of a bunch of guys - mostly guys - working in their toolsheds and basements, and now can be taken seriously as a form of art and sculpture and craft.

"It's something people discovered was incredibly basic," he said, "a way of making something, like a kind of paintbrush."

Brown's inventive, thoughtful show resolutely makes the case that Albert LeCoff, the center's founder and heart, has been making for 35 years, the first 10 out of his Germantown home (where his dogs were trained not to gnaw on any wood objects). Wood turning - shaping blocks of wood on a spinning lathe - could find an identity in art.

LeCoff, 61, is now ensconced in the Center for Art in Wood's sharp new digs in a former gym at Third and Quarry Streets, down the block from the original John Grass Wood Turning Co. founded in 1868, and surrounded by old machinery shops, new boutiques, and furniture-makers. He can hardly believe that his vision of wood turning as art, or art turning in wood, or wood in art, or however you want to spin it (the board debated which should come first in the new name, wood or art) has been so magnificently realized.



"I couldn't be happier here," he said. "We're among boutiques and major galleries. I joke that the biggest unexpected bill is cleaning the windows from people leaning against us with their faces trying to see what's inside."

At the old location, near the egress from the Ben Franklin Bridge, LeCoff said, he was lucky to get 2,500 visitors in a year. It was mostly a twist on the joke - if wood turns on a dead-end street, does anybody notice? Not really.

A visit to the white-walled, large-windowed Gerry Lenfest Gallery facing Cafe Olé across Quarry Street reveals a collection that literally spins right

off its lathe and works energetically as modern art, mostly out of wood.

Brown organized the exhibition of 100 objects (about 10 percent of the total permanent collection) around what he calls "conversations" - groupings of bowls or sculptures or tools, objects of one color,

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Woodturners News (cont.)



and even things that make little or no use of wood. There are botanical and natural works, human-anatomy-inspired pieces, furniture that dares you to sit, political works confronting war, and themes of memory.

There are provocative meta works such as Art Object to Be Destroyed, by Hilary Pfeifer, Dennis Carr, and Neil Scobie, a bowlish object stuck with match sticks ready for igniting. "Despite its Duchampian wit," Brown wrote, the piece "suggests a desire to be kept apart from conversations that steer too deep into art territory." And Joe Dickey's Offering Bowl,

made of weeping willow and almost totally open at the bottom, challenges the very definition of a vessel, not to mention the idea of an offering to God.

There are bowls that look like lace, wood sculpture from burls that evoke the flutter of a butterfly's wings, pieces that take on gender and human form, bowls that show virtuosic forms of shaping and finishing,

furniture that works as near-theater. The exhibition pops with the feel of a contemporary-art gallery.

Brown said he viewed the Center for Art in Wood as an example of how craft-based art was becoming more provocative and lively than more art-based art these days. He feels that the Art Alliance's recent refocus on craft is an indicator of the liveliness of the field, not a retreat from more adventurous art forms.

"It's a real interesting tension in the art world and the craft world," he said. "I would say there are more exciting and vibrant things happening in the world of craft and design than in the art world right now. Craft and design are in many ways doing the work that art could be doing but isn't because it's pretending to be philosophy."

Curating a show grounded in so traditional a craft as wood turning and finding so much modern sensibility was very satisfying, he said.

"As a culture, we make art. As a society, we make art. To that end, heck yeah, what's going on at the center is art. It pays attention to ideas, craftsmanship, and intimate knowledge of the materials."



The new Center for Art in Wood, formerly the Wood Turning Center, now at 141 N. Third, seen from the second floor offices, library, storage, and display area for the permanent collection. (TOM GRALISH / Philly Inquirer Staff Photographer)

Mark Sfirri, an artist with several pieces in the collection, credited LeCoff with the vision to turn the Wood Turning Center into something more ambitious.

"Once again, Albert is one who has always looked at people for new ideas and encouraged them," he said. "Albert has this incredible vision. He's taking on big tasks, going for it. There was a quantum leap from what was originally in his house to the Vine Street address. That was like, wow, I can't believe it. Here, it's even greater."



March 2012

Woodturners News (cont.)

Sfirri says the current exhibition has been provocative in seeing works from artists who don't necessarily know one another displayed together. A grouping that pairs thick-walled bowls by Robyn Horn and Jim Partridge challenges the idea that the thinness coveted by turners is the only standard of excellence. "Both wrestle forms on the heavy side," Sfirri noted.

Since 1995, LeCoff has brought artists together for two-month residencies at the University of the Arts. Many pieces in the current show grew out of those residencies.

In the new location, he's seeing about 400 people on First Fridays, and is working with Cafe Olé on evenings of art and dinner. He's planning future exhibitions (the current one runs through April 21) that play on traditional wood-turning forms and inspirations - "Hooked on Wood: The Allure of the Fish Decoy" and "Life Aquatic," in which six artists will show work inspired by the sea.

In the new location, the permanent collection is housed on shelves in the open-walled mezzanine, a huge upgrade from the basement on Vine Street. There's room as well for an extensive library and archives. In connection with the current exhibition, the center has produced a handsome portfolio with individual plates of every object. Metal garage doors in the front will be replaced, soon, by wooden ones.

"The space is really museum-quality space," says LeCoff, who like many of the artists was first exposed to wood turning in a shop class. "We truly are a destination within the heart of the gallery district."



View of the storage and display space for the permanent collection, on second floor of the Center for Art in Wood.

(TOM GRALISH / Staff Photographer)

The Center for Art in Wood, 141 N. Third St., Philadelphia

Hours: 10 a.m. to 5 p.m., Tuesday to Saturday.

Admission: Free (donation appreciated).

Information: 215-923-8000, or www.centerforartinwood.org

Contact staff writer Amy S. Rosenberg at 215-854-2681, arosenberg@phillynews.com

Link to Article: http://www.philly.com/philly/entertainment/139509503.html



March 2012

The Beginner's Corner (Steve Drake)



Sharpening your Tools

For this article, I asked how people sharpen their woodturning tools. I got 17 responses, or 24% of the membership and it proved that there are a variety of ways we sharpen our tools. As one person put it, a good sharpening system makes wood turning a pleasure while a poorly sharpened tool is just an invitation to a fight that you are going to lose.

Universally, everyone had some type of electric grinder. It was a fairly even split between fast and slow grinders but the 8" wheel far out numbered the 6" wheel. This could be due to the 8" wheel being 1" wide whereas the 6" wheel is only ³/₄" wide. Multiple members complained about sliding off the edge of a narrow 6" wheel as the reason they use a wider 8" wheel. The other advantage of an 8" wheel is that it presents a flatter surface to the edge of a gouge. The curve of the wheel creates a slight concavity on the underside of a gouge edge that can lead to a ridging effect when making certain cuts. The 8" wheel reduces this effect. The surface speed of an 8" fast grinder is over 125 ft/sec whereas the 6" fast grinder is under 95 ft/sec. The slow speed grinders turn at 61 and 45 ft/sec respectively. As such, while modern tools will not overheat on a high speed grinder, care does need to be taken as a high speed grinder can be very aggressive in removing metal.

Almost everyone uses a 120 grit wheel for their best sharpening but most used a coarser wheel when they wanted to shape a tool to a new purpose. Everyone that mentioned a diamond wheel dresser said that they are a must-have item for good wheel maintenance. There were also several people that mentioned that it helps reduce vibration and improves sharpening if some effort is put into balancing the wheel as best you can.

Most members have the Wolverine system or a comparable homemade system. While several of the most experienced members freehand sharpen their tools, the general feeling is that a jig system allows a beginner to spend more time learning to turn and less time sharpening. About a third of the members use the Ellsworth sharpening jig on their systems and most of them swear by it. Three members have a Tormek system and two have a Worksharp system. These members like these systems for their speed and convenience but there does seem to be a learning curve to using them to their best advantage. One member uses the Wolverine system for general sharpening and the Tormek for a final sharpening. Whatever the sharpening system being used, it is important to remember that, once a tool is shaped well, only a little bit of metal needs to be removed to re-sharpen it.



The Beginner's Corner (Steve Drake)

Sharpening your Tools (cont.)

About 80% of the members hone their tools. The most common tools to be honed are the skew and the parting tool due to their flat edges and ease of honing. Gouges are generally only honed on the inside to remove any burs but a couple members said they hone their gouges before they make the final cuts to a piece. While most people use a stone or diamond imbedded steel for honing, one member felt that Herb's Yellowstone and a leather strop actually gives the finest edge.

When asked about how to recognize that a tool needs sharpening, there were a variety of answers that all boiled down to "when it feels wrong, sharpen". Signs to look for are when a tool is catching, giving poor shavings, has more tearing out of the end grain, or needs more force then usual. One objective way to tell if the tool needs sharpening is to look at the edge. A sharp edge will not reflect light because there is so little material at the point. As it is used, the edge becomes rounded over and dull. The round-ing over creates a larger surface and if you look at an edge under a bright light, you can see a reflection where the edge should be. At this point, it's dull and you needed to sharpen or hone about 5 minutes ago.

One other bit of general advice is to sharpen any tool just before you get ready to make your final cuts. This helps avoid last minute disasters.

Several members mentioned various sharpening and shaping aids. Among these are the Profile-Pro and Raptor from Craft Supplies. While the Profile-Pro had positive comments, the Raptor had mixed opinions. One member really likes the Veritas Skew Grinding jig for sharpening curved skews. Opinions were less complimentary for the Tru-Grind bowl gouge jig from Woodworkers Supply and the Apprentice Universal Tool Support from Craft Supplies. There are a multitude of sites on the web for demonstrations of sharpening techniques. One that was pointed out as being especially helpful is listed below.

In summary, the consensus of the club is that you should;

- Use a grinder fast or slow is OK, 8" preferred, 120 grit for sharpening, 60-80 grit for shaping, use a wheel dresser.
- Use some type of jig system Wolverine most common but other systems are available.
- Hone the flat tools and maybe hone a gouges before a final cut.
- Sharpen if it feels wrong Can look at edge for a reflection but only remove a tiny amount of metal when sharpening.
- Be aware that there are a number of sharpening aids out there with some good, mixed, and poor reviews.

Sharpening is critical to your success! When you get your turning tools out, get out the sharpening tools as well. They are just as vital!

References:

www.woodworkingonline.com/2008/09/23/podcast-37-turning-tools-sharpen-your-skills-with-sharp-tools/



By Carl Powell

What's Important in a Woodturning Tool?

The ideal woodturning tool would have the perfect shape for the task at hand, be exceedingly sharp and never wear out (or at least be trivial to resharpen). Lots of advertisements not withstanding, no such tools exist. With the materials available in the real world we can't have all of those things, at least not at the same time. Inevitably we (or the tool manufacturers) have to make tradeoffs, with the result being a collection of different tool materials with different properties. To get as close to our perfect tool as possible, we need to evaluate those materials on their hardness, their ability to hold a sharp edge, and the durability of that edge.



Hardness

Generally speaking, a harder material can take and hold a finer edge. Razors are made of very hard steel for just that reason. This would seem to indicate that a harder material is better than a softer one, but there is a tradeoff involved. The tradeoff is that hardness is almost always accompanied by brittleness. While a straight razor might take a beautiful cut if used on a lathe, you'd be likely to lose a chunk out of your edge the first time you hit a pin knot or interrupted cut (if you were lucky enough that the entire blade did not shatter from the impact). Converting a straight razor into a realistic woodturning tool would involve making compromises in at least one of two areas. Either hardness could be reduced to increase toughness (i.e., reduce brittleness), or the shape of the edge could be beefed up so there was more material supporting the brittle edge. High hardness can also have a negative impact on shaping and sharpening, since a harder material will be harder and slower to grind.

The most common way to measure the hardness of steels used for woodworking/woodturning tools is the Rockwell C scale. A 150 kilogram force is applied to a 120 degree diamond cone pressing on the item to be measured. The hardness is calculated by measuring the depth of the indentation created by the test. The result is expressed as a hardness value with HRC or RC as an identifier, higher numbers indicating harder steel. Hardness of around HRC 60 and above is considered good for woodturning tools.

Sharpness

There are two aspects of sharpness. I'll follow Leonard Lee from his book on sharpening and refer to them as shape and keenness. An edge is formed by the intersection of two flat surfaces. The important part of the shape of an edge is the angle it includes, i.e., the angle between those two flat faces. See Figure 1. While the surfaces differ from tool to tool (the two bevels of a skew, the bevel and the flute for a gouge, and the two sides of the burr for a scraper), the included angle will influence both the finest cut that can be made and the durability of the edge. A straight razor has a very small included angle at its edge, while a wedge for splitting firewood has a much larger one to handle the forces that are applied to it. A razor would crumple if used as a wedge, while a wedge could never be sharpened enough to function as a razor (unless it was radically reshaped).





Figure 1: Included Angle

Sharpness (cont.)

Keenness is a measure of how regular the edge is, or equivalently the smoothness of the two surfaces that form the edge. One could use a strop to hone the edge of a splitting wedge to make the edge as keen as that of a razor. It would function better than if the edge were rough, but typically not enough to be worth the effort. Sharpening a razor with a file, on the other hand, would leave an edge so rough that it would not be suitable for shaving.

Durability of the Edge

As noted above, shape and hardness impact the durability of an edge. High hardness will result in an edge that lasts longer but also one that is more fragile. It will also make the edge harder to shape or sharpen since the effectiveness of a sharpening agent depends on how much harder it is than the item being sharpened. Altering the shape can also make an edge more robust, but at the expense of reducing sharpness.

So far, this discussion applies to all forms of edged tools. Woodturning tools have an additional property that affects how durable an edge is: red hardness. Woodturning tools are unusual among non-powered tools in that they are subjected to very high heat (due to the friction of rubbing against the motorized wood). Red hardness is a measure of how hard a material remains when subjected to heat. Some steels, for example, will soften when heated beyond a certain point leading to rapid edge erosion of tools made with those steels. High red hardness means that the material will not soften appreciably when subjected to the temperatures commonly seen in woodturning. Higher red hardness often comes with being somewhat harder to grind, but this is usually not a large factor.

Heat Treating Steel

Heat treating involved three different processes, annealing, hardening and tempering. Annealing makes steel soft. To anneal steel, you heat it to its "critical temperature" (which varies between different types of steel) and then allow it to cool slowly. In hardening, the steel is again heated to its critical temperature but is then quenched to cool it very rapidly. Different types of steel do best when quenched in a particular way: air (slow), oil (faster) or water (fastest). Fully hardened steel is too brittle to be used in many applications, so it is often tempered to reduce the hardness and increase toughness. Since tempering softens steel, low tempering temperatures mean poor red hardness.

Cryogenic hardening is a process that has been around for a while, but seems to go in and out of favor. There is some evidence that it can increase both the hardness and the toughness of some steels, but only those that retain some amount of austenite (a phase of steel) at room temperature. A study by James Staley (referenced below) indicates that cryogenic treatment probably does not affect steels that are triple tempered (usually high speed steels).



Figure 2: Temperatures for Steel. Top temperatures are giving off light (e.g., glowing red hot), bottom temperatures are colors of iron oxides



Figure 3: Oxide colors on a piece of steel



Materials

Now that we know the properties that we would like for our ideal tool, we can start looking at the materials available to us to see how that rate on those properties. While we could potentially look at any material, there are two types that seem to have the best combinations of the properties we care about while still being affordable: steels and carbide.

Steels

Steel is an alloy of iron and carbon, with the amount of carbon being between 0.2% and 2.1% by weight. Below 0.2%, there is not enough carbon to be considered steel, and alloys with more than 2.1% are considered cast iron because of their lower melting point and good castability. If present in sufficient quantities, carbon allows the hardness and toughness of the steel to be adjusted by heat treating.

Low Carbon, Medium Carbon and Mild Steels

These are the common steels we see in nails, bolts, car body panels and countless other day-to-day steel items. They cannot be hardened enough to take or hold a good edge. They can be easily formed to any shape and are reasonably tough. Their use in wood turning is very limited, mostly to making specially shaped scrapers for one or two cuts.

High Carbon and Alloy Tool Steels (HCS)

These steels have enough carbon in them to be hardened above HRC 60 so excellent tools can be made from them. They will readily take a very sharp edge and are quick and easy to sharpen. Many people claim that you can put a better edge on one of these steels than on any other type. They are inexpensive and readily available. O-1, W-1, A-2 and 1095 are all examples of steel types that fall into this category.

The big downfall of this type of steel for woodturning is lack of red hardness. Most woodworkers (and many people who sharpen their own lawnmower blades) know that "bluing" an edge by grinding too hot ruins the edge. The blue color shows that the steel has been heated to approximately 590 degrees Fahrenheit, a temperature easily obtainable when woodturning. Once softened by hitting this temperature, the edge will rapidly degrade. Softening starts as low as 420 degrees while higher temperatures can "burn" the steel by releasing the carbon present in the material. This will leave soft iron behind, which will not last long at all.

High carbon steel tools were the standard in woodturning for many years so there are large numbers of them available on the used market at very reasonable prices. Several woodturners have said they keep a high-carbon steel skew honed to a razor edge for use on the final cut, believing that it will take and hold a finer edge than any other material. Ernie Connover also likes to use high-carbon steel scrapers, since the burr doesn't last long enough for red hardness to be much of a factor and it's quicker and easier to produce a new burr than with high speed steel. (He also likes the fact that they can be easily made from scrap steel so they can be very inexpensive.)



High Speed Steel (HSS)

The addition of Molybdenum or Tungsten to steel enormously increases red hardness. Rather than going soft at 590 degrees as with HCS, HSS would need to be heated to something near red hot (1400 degrees) for an equivalent amount of softening. Those kind of temperatures are difficult to achieve when woodturning, so the edges on HSS tools generally last up to 10 times as long as an equivalent HCS tool for woodturning use.

HSS turning tools are often harder than similar HCS tools, due in part to HSS having a higher maximum hardness and a higher toughness for the same hardness. The bottom line for the turner is that well-made HSS tools can have any of the shapes as those made of HCS but with better performance in all but one area: grinding. For sharpening, the difference is some loss of keenness compared to HCS, but heavy reshaping will take longer unless something like a seeded-gel wheel is used. A HSS scraper will also be far harder to burnish a burr onto, although I've heard of no real differences between HSS and HCS scrapers when the burr is raised on a grinder.

HSS is trickier to harden and temper than HCS. For best results the steel must be preheated to a hold temperature, then raised to the hardening temperature. Since the hardening temperature (~2100 degrees) is white hot, this process is frequently done in a salt bath to prevent the steel from oxidizing. The steel is then quenched either in air or in molten salt and then air. (Never put hot HSS into water to cool it, as this can result in micro-fractures that will ruin at least the part of the tools that has been doused.) Once the steel is hardened, it needs to be immediately tempered. Triple tempering is the norm since it appears that a single tempering cycle will leave the steel very hard. The fact that these processes have much tighter limits than hardening for HCS may be one of the reasons that there is so much variation in tools from some manufacturers. A factory with poor controls will get it right every once in a while by blind luck, while one that is well regulated will crank out a quality product every time.

HSS comes in several different varieties, such as M-2 (the most common for woodturning tools), M-42 and T-1. I have not read anything to indicate that any particular type is much better for woodturning, and M-2 appears to be the most economical.

Powder Metallurgy

Relatively new to the woodturning market, powder metallurgy steels are created by sintering powdered steel into the desired shape. The powder is created by atomizing molten steel so that it forms into tiny spherical particles. These cool so rapidly that the elements in the steel do not have chance to separate, resulting in a more uniform product.

Powder steels have a greater toughness (and hence last longer) than regular steels but are otherwise very similar to the type of steel they are made from. They appear to be a good value for an experienced turner, but the wear advantage might be lost for a beginner who is just learning to sharpen (and hence grinding away a lot of steel from his tools). The results from James Staley's research indicate that the wear factors quoted by manufacturers are inflated, at least for woodturning. Using M2 HSS as the baseline, he measured the following increases in wear resistance for various types of powder steels.

Type of Powdered Steel Wear Factor M4 1.2 10V 1.25 ASP30 1.4 1.8 ProPM T15 1.9 Rex86 2.0 2.05 15V ASP60 2.4

Table 1: Comparative Wear Factors for Powdered Metal Steels

To compare the prices of tools with different compositions, divide the cost of the tool by the wear factor. This will normalize the cost of the tool over time. For example, if an M2 gouge cost \$50, an equivalent ProPM gouge cost \$85 and the ASP60 version cost \$120, the normalized costs would be \$50 for the M2 gouge (\$50/1.0), the ProPM would be \$47.22 (\$85/1.8) and the ASP60 would be \$50 as well (\$120/2.4). This says that if you used the gouge enough to go through several of them during your lifetime, buying the ProPM would cost the least over the long haul. On the other hand, if you try the gouge once and decide you don't like it, you lose the least with the M2 model.

Carbide

When woodworkers speak of carbide, they are almost always referring to a mixture of Tungsten Carbide with Nickel or Cobalt and other binders. This is a substance that has been around for decades in other areas of wood and metal working, but is just now really taking off with woodturners.

The attraction of carbide is that it is very hard (twice as hard as the hardest steels and so hard it cannot be measured on the Rockwell C scale) and it wears very well. Once sharpened, a carbide tool does not need to be resharpened for a long period of use. That's a good thing because it is so hard that only something like a diamond stone will sharpen it in a reasonable amount of time. Carbide also has excellent red hardness since it won't really soften until you melt the binder.

The keenness of a piece of carbide will depend on the size of the carbide grains in the binders. Socalled nano-carbides use a very fine grain size, so they are able to take a keener edge. The shape of the edge is still limited, however, due to the brittleness of carbide. Most carbide tools I have looked at have included angles of 45 degrees or more at the edge. I presume that a finer edge would be too prone to chipping.

Most of the carbide tools on the market today are scrapers since scrapers function well with blunt shapes and the inserts are readily available from metalworking supply shops. The difficulty in sharpening makes inserts attractive, since they can be discarded and replaced when dull.



The Bottom Line for a Beginner

Tools of any of these materials will allow you to turn wood, and you can find poor tools and great tools made out of any of them. Which should you choose? Ultimately that is a personal decision but here are a few things to think about.

- High Carbon or Alloy Steel tools will likely be the least expensive because they are currently out of favor. You will need to sharpen them more often, but if you are on a really tight budget they might be a good choice.
- In most cases, normal high speed steel tools are probably your best bet. They are affordable but still last a reasonably long time. Two things to consider are that you are likely to grind off a lot of your tools as you become more comfortable with sharpening, and you will almost certainly acquire some tools early on that you find you don't really use very much. In either case, it's less painful for that to happen with a moderately priced tool than a premium one.
- When you get to the point that you have a set of favorite tools, consider a powdered metal tool if you need to replace one. They make up for the extra cost by lasting longer, so if it is a tool that you will be wearing out, you will come out better in the end.
- If you really hate sharpening, consider a carbide tool. Bear in mind that you'll have a very limited set of tool geometries to select from and that the replacement inserts are not cheap. You might want to consider building one on your own rather than pay \$100 for a \$9 piece of steel.
- Cryogenically cooled tools may or may not be a good choice. It appears the jury is still out on whether they are that much better to justify the price. It's also likely to vary based on which particular steel a given manufacturer uses and how they heat-treat it.
- The reputation of the manufacturer cuts both ways. A premium brand is likely to have better industrial controls and hence produce a more consistent product, but they will also charge a premium price. Personally, I've had good luck with buying less expensive tools since I can often get three or four of them for the same price as the premium brand. I figure that even if the hardening is not as good, I'll spend the same amount of time sharpening (since softer tools sharpen more quickly) and it's unlikely that the premium brand will last 4 times longer.

Disclaimer

I am not a metallurgist, I don't play one on TV and I didn't even spend the night in a Holiday Inn Express. The information in this article comes from a variety of sources that seem to make sense when considered together. They are not the only sources, however, and some of the other things I have read seemed to supply conflicting information. While I have tried to leave out details where there seems to be a lot of disagreement, I don't know if the contradictions are due to my selecting the right sources, the wrong sources, or just not understanding what I was reading. Your mileage may vary, except in California.



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Future Meetings (Gary Guenther)

Suggestions for Future Meetings are Welcome!

Please call Gary at 301-384-7594 with your ideas.

Because of cooperation with Chesapeake, CAW, and the Woodworkers Club, we have a truly outstanding set of programs planned for 2012. Please review the following.

• March 15, 2012 – David Ellsworth – A Hollow Form and a Bowl

See Page 1 for details.

• April 12, 2012 – Mike Hosaluk – topic TBD

Award-winning Mike Hosaluk, from Saskatchewan, Canada, is internationally recognized as one of the world's most creative woodturners and wood artists. In his own right, he is as well known and widely respected as David Ellsworth. It is said that: "his work is humorous and elegant, possesses character and gesture and is full of reference to architecture, nature and culture." Mike says: "The field will grow by questioning the limits. The minute you think you know enough, it will become boring."

Terry Martin says of Mike: "Mike's influences follow him around the world. It is a testament to his influence that imitations of his work have appeared everywhere, straight after his visits." Mike's many and instantly-recognizable signature pieces are in all the best museums, collections, and galleries. He is featured in the book "New Masters of Woodturning". He is an outstanding teacher – I saw him in two rotations in St. Paul. His "how'd he do that?" works are mind bending, and he happily demonstrates his techniques. He is also an author, sells a line of tools, and has a DVD. His web site is http://michaelhosaluk.com. In addition to our demo, he will also be teaching a highly recommended two-day, hands-on Workshop at the Woodworkers Club on the Wednesday and Thursday associated with our meeting. Talk to Matt about signing up, and be sure to mark this demo on your calendars.

• May 10, 2012 – Alan Carter – either 'Suspended' Vessels or 'Split-bowl' Vessels

Alan is a new 'big' name with lots of magazine coverage recently for his "suspended" vessels. Check out his work at <u>www.alancarterstudio.com</u> and the June 2011 issue of Woodturning Design magazine in which he has the cover, and artist's profile, and a good article. His work has also been widely presented in recent issues of *American Woodturner*. He creates vibrant and unusual sculptures that have a strong dynamic presence. He is honored to have been selected to give two woodturning demonstrations at SOFA Chicago this November. SOFA is *the* premiere international 3D art exposition. Alan will be flying in from Illinois to show us some aspects of his acclaimed signature work.

• June 7, 2012 – David Reed Smith – topic TBD

David is a very accomplished basement turner and tool nut who is a member of the Baltimore Area Turners. He is also a widely published, prolific author with something like 60 articles to his name. You have probably seen his articles in *American Woodturner, Woodturning, More Woodturning*, and, recently, in *Woodturning Design*, in which he has an article in nearly every issue. David loves to find ways to do what hasn't been done. He's an expert at finding new jigs and ways to hold things on the lathe to make unusual forms and cuts. Check him out at <u>www.davidreedsmith.com</u>. We'll have him show us one of his current "great ideas". I'm leaning to some of the multi-axis work he's currently doing on spheres, as well as a new tool form he's developed.



Future Meetings (Gary Guenther)

• July 12, 2012 – Selling your Work II

In November, our first "Tree to Lathe" session was only half completed, so we finished it up in December. The same could be said of our first "Selling" discussion in February. It was a big hit, but we ran out of time with a lot of topics not covered. I had a number of emails indicating the desire to hold another session to finish it up properly and get all the good info on the business end, among other things. We will hold that one more session at our first opportunity, in July. This will be another round table discussion for all to participate in.

• August 9, 2012 – Mark Gardner – topic TBD

Mark was a student of the famed Stoney Lamar and is widely known for his own signature sculpture and vessels involving unique shapes, multiple axes, coloring, carving, and texturing. <u>http://</u><u>markgardnerstudio.com</u> He will share with us some of his inventive and distinctive forms.

• September 6, 2012 – Marilyn Campbell – topic TBD

Marilyn's unique forms are easily among the most recognizable examples of wood art. She uses techniques of cutting and gluing, coloring, piercing, and texturing to great effect. <u>www.marilyncampbell.ca</u> Needless to say, she's in all the best collections. We'll learn some unusual techniques from her.

• Late 2012 – Patrick O'Brien – topic TBD

Patrick, a widely-respected CAW member and professional turner, did an excellent demo for us of his signature natural-edge pot in April 2010, and he will be making a return visit to show us what he's currently working on. <u>www.ohbewood.com</u>

2012 Meeting Schedule			
January 12 MCW Show & Tell	February 9 Selling Your Work	March 15 David Ellsworth	
April 12 Mike Hosaluk	May 10 Alan Carter	June 7 David Reed Smith	
July 12 Selling Your Work II	August 9 Mark Gardner	September 6 Marilyn Campbell	
October 11 TBD	November 8 TBD	December 6 TBD	

2012 Meeting and Skills Enhancement Capabilities & Schedule (Bert Bleckwenn)

Bill Long has joined Bert Bleckwenn in staffing future Skills Enhancement Sessions. Bill and Bert will alternate monthly coverage with Bill supervising the Friday sessions and Bert supervising the Sunday sessions. Bert will continue with the signup process, so please send an email to Bert at <u>bableck@gmail.com</u> to sign up for a scheduled session.

The March session will focus on any turning technique you like. The session is scheduled for:

Friday, March 16, 2012 - 10:00am-1:00pm (Bill and Bert will both be at this session)

A minimum of two participants is required for each session, otherwise the session will be cancelled.

Mark your calendars now so you can take advantage of our meetings and Skill Enhancement programs in 2012!

2012 MCW Meeting and Skills Enhancement Schedule			
Month	Meeting Date (7:00-9:00PM)	Skills Enhance- ment Day	Skills Enhancement Date (10:00AM-1:00PM
February	Thursday, February 9, 2012	Sunday	Sunday, February 12, 2012
March	Thursday, March 15, 2012*	Friday	Friday, March 16, 2012
April	Thursday, April 12, 2012	Sunday	Sunday, April 15, 2012
Мау	Thursday, May 10, 2012	Friday	Friday, May 11, 2012
June	Thursday, June 7, 2012	Sunday	Sunday, June 10, 2012
July	Thursday, July 12, 2012	Friday	Friday, July 13, 2012
August	Thursday, August 9, 2012	Sunday	Sunday, August 12, 2012
September	Thursday, September 6, 2012	Friday	Friday, September 7, 2012
October	Thursday, October 11, 2012	Sunday	Sunday, October 14, 2012
November	Thursday, November 8, 2012	Friday	Friday, November 9, 2012
December	Thursday, December 6, 2012	Sunday	Sunday, December 9, 2012

* One week later than our normal schedule

Membership Application Form and Interest Profile

MCW Membership Application forms available at: http://montgomerycountywoodturners.org/Membership.aspx

To become a member or renew, please print out, complete and either mail it or personally deliver it to Bill Autry along with a check for \$20.00, payable to Montgomery County Woodturners. New membership in the 2nd quarter is \$15, 3rd quarter \$10, and 4th quarter \$5. A Family membership is \$30.00/yr. Please ensure you include your email address, as all communications are electronic via our website and periodic email notifications.

Member Discount Program

EXOTIC LUMBER, INC. GAITHERSBURG, MARYLAND - exoticlumberinc.com

With over 130 species in stock, Exotic Lumber has one of the widest selections available on the East Coast. We offer a 10% discount to MCW members. We have warehouse locations in Gaithersburg and Annapolis, where you are welcome to select from our extensive selection of turning blocks.

HARDWOODS, INC. FREDERICK, MARYLAND – hardwoodsincorporated.com

10% off on all turning stock, lumber, moldings, finishes and hardware. 10% off on all Amana router bits and blades that list for \$75.00 and under and 20% off those that list for over \$75.00.5% off all plywood and veneer products.

2Sand.com is a coated abrasive specialist focused on fast service and fair prices providing superior sanding discs, sandpaper sheets, and woodturning tools to woodshops. MCW Member Discount is 10% (discount code available in the restricted area of the MCW Website).

ROCKVILLE WOODWORKERS CLUB - woodworkersclub.com

MCW and other club members, remember to support the Woodworkers Club by purchasing turning supplies during our meetings and save 10% on the retail price.

CRAFT SUPPLIES USA - woodturnerscatalog.com

Club members can save 10% on all finishes & disc abrasives from Craft Supplies USA.

Just mention your club name and save, all year long. You can always see current club specials by clicking on the members login button on their homepage. New 15% specials are updated on the 1st of

the month, which can be accessed on the link above and going to the club member login located at the lower right portion of the page.

HARTVILLE TOOL CLUB – hartvilletool.com

Members get a 15% discount, with MCW receiving a 3% rebate. If you have not signed up for this program, let Stan Wellborn know you want to do so. He will let Hartville know you are an MCW member and sign you up. Catalogs and ordering instructions are available at meetings.

2SAND.COM – 2sand.com or call 800/516-7621

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Montgomery County Woodturners

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Clif Poodry

Phil Brown

Bill Autry

Tim Aley

Carl Powell

Mark Verna

Bert Bleckwenn

Gary Guenther



Montgomery County Woodturners - A local chapter of the American Association of Woodturners (AAW)

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