



High Desert Turning

Calendar Year Membership: \$20 individual, \$25 family Contact John Vogel
jvogel20@comcast.net or 798-9769

Next Regular NMWT Meeting:

May 1, 2010
9:00 AM to Noon
Turning with the Sabos

May Meeting Program

Steve and Madeline Sabo
 Steve: Hot melt glue chucking
 Madeline: Turning with disabilities

Future Meetings 2010

June	To be announced
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July Graeme Priddle

The 2010 programs will be listed next month. If you would like to participate in any of the above or have ideas for a program or topics, please contact Ron Bahm at 881-8845.

April Program Summary

Bill Zerby, presenter: Tool steels and Sharpening Turning Tools

Bill is one of NMWT's founding members and past Presidents. He's been turning for over 25 years and has presented many time at club meetings, for other turning groups, and at the American Association of Woodturners Symposium in 2005. For this presentation, Bill drew on his vast knowledge of metallurgy and turning tool design.

Tool Steels

"If it doesn't shave hair – it's dull!" This was Bill's opening comment. He used the reference of a human hair – one micron – as a point of reference during the

entire presentation. His basic definition of steel was simple: carbon trapped inside iron, or more clearly, steel molecules are formed when, with intense heat, carbon atoms are bonded (trapped) with iron atoms so that when the mixture cools it develops into a crystalline structure of molecules that are extremely stable and hard. Plane steel, often called mild or high carbon steel, is the simplest form.

Tools made of high carbon steel will take a very sharp, keen edge, but will not hold the edge for very long. A very sharp carbon steel tool edge can dull in as short as 30 seconds when put to wood. This type of steel is also very heat sensitive, which will start to change (deform) when heated to only about 350° F. While being sharpened, as soon as carbon steel starts to show straw color, it's reached that temperature and is damaged, no longer suitable for a cutting edge.

Decades ago, higher strength steels were developed for tools in both industrial and household applications. What differentiates these tools is the type and amount of other elements that are added to basic carbon steel to give them higher strength, durability, heat tolerance, and other desired properties. Elements added include Manganese, Chromium, Vanadium, Tungsten, Cobalt, and Molybdenum. The most common element added to make high speed steels (HSS) is Vanadium. M-2 steel, or M-4, are steels that have 2% or 4%, respectively, Vanadium included in the steel "recipe." A key characteristic of high quality steels is hardness, or strength. A scale to rate hardness, know as the Rockwell Scale, ranges from 0, the "hardness" of water, to 100, the hardness of diamond. All steels used for quality turning tools are at a Rockwell hardness of 55 or greater. The steels we commonly use for turning are also highly resistant to heat. It's common for these steels to perform well at temperatures of 2200° F, which makes them immune to damage during sharpening processes that color steel up to cherry red.

OFFICERS, DIRECTORS, & COMMITTEES FOR 2010			Webmaster	Dave Stein	266-0356
President:	Tom Cour	867-8771	Logistics:	Pat Beatty	710-2497
Vice President:	Ron Bahm	881-8845	Newsletter:	Bobby Dickson	681-7685
Treasurer:	John Vogel	798-9769	Photographer:	Bill Kalb	771-1376
Secretary:	Rich McCartney	792-9440	Raffle:	Harley Meuret	891-2170
State Fair:	Bill Mantelli	298-2603	Librarian:	Tom Doering	994-1709
			Equip/Workshops	John Ellis	771-1773

Bill described processes for manufacturing high strength steel. Two processes are very common and similar, Asea Stora Process, ASP, and Crucible Particle Metallurgy, CPM. In both of these approaches the Vanadium and other elements are blended into the steel recipe in a crucible under high heat. However, when Vanadium exceeds 2% it becomes very unstable and is subject to concentration changes as the steel cools. To counteract this, an inert gas is shot into a thin stream of molten steel as it emerges out of the crucible, causing small particles to form which are then trapped, compressed, and pressed into steel blanks for tool manufacturing. ASP and CPM are capable of producing steels with Vanadium concentrations as high as 10%, such as in V-10 steel.

Bill passed around a double-ended One-Way bowl gouge that is V-4, or 4% Vanadium. He also showed us some 1/4" round HSS rod for tools available through Enco for about \$3 each. Also passed around was a 3-corner tool made of M-2 steel.

What's the message? The higher % of Vanadium, the larger the crystal, the higher strength, but not as keen and edge. In application, sharper edges not needed for green wood, but are needed for kiln-dried wood and hardwoods. M-2 is the minimum level of steel for both longevity and sharpness.

Titanium Nitride as a coating on HSS helps lubricate the surface and toughens the steel. Especially good for drill bits, but only one turning tool maker, Sorby, is marketing tools with TN coating. Experience so far shows that these tools may have a better edge retention.

Nano-grade carbide (hardening with carbon) is used for very small tools, such as drill bits for microscopic drilling of printed circuit boards.

Grinding Wheels

Bill next turned to the topic of sharpening and grinders. Common wheels used to sharpen woodworking tools using aluminum oxide and silicone carbide are made with binders in a range of hardnesses. The designations I through L are used to designate hardness, with I the softest. K is too hard, while L is a good hardness, allowing more cutting crystals to be brought to the surface as the wheel wears. All wheels need to be dressed frequently to expose new crystals, clean imbedded metal from the surface, and to true the wheel to square.

Bill cautioned us to always have wheel guards on our grinders, and to stand to one side while the wheel is both starting up and while coming to a stop. Wheels

are designed to run with stability at grinding speeds, usually between about 1800 rpm and 3600 rpm.

He showed us a new wheel technology known as "Diamond Resin-bound Wheels." While expensive (\$150 for an 8", vs. \$40 for a standard wheel), they last much longer, up to 10 times that of standard wheels. They must be used at slower speeds, up to 4500 surface feet per minute, so 1750 rpm is OK. They can't be dressed the same way as standard AO or SC wheels. Dressing requires two steps. First, the wheel is "dressed" with a diamond-impregnated bar to clear the surface. Second, the wheel is "conditioned" to remove the resin at the surface and expose the diamonds in the compound. Very little surface is removed during this process, less Diamond Resin-bound Wheels are safer than conventional wheels since the wheel is solid aluminum with a thin layer of grinding material around the perimeter, lasting the life of the wheel. The aluminum core can't explode, unlike conventional AO and SC wheels. Also, they don't heat the steel being sharpened, don't create sparks, and stay larger, creating a preferred shallower hollow grind.

Sharpening

Bill next talked about sharpening turning tools. He showed two general types of bowl gouge sharpening designs, the English grind, which has a 45° bevel and straight cut across the flute, and the Irish grind, or fingernail (David Ellsworth) grind, featuring a more acute bevel and parabolic sides, providing a larger edge for shear scraping. Shear scraping happens when the tool is held on the side, riding the bevel, with the tool held at an angle to the rotation of the turning wood. It requires a very sharp tool, but produces an extremely smooth finishing cut.

The English grind, however, can be easier to cut at the bottom of bowls, without having to reach across the lathe bed to make a full cut. Some discussion was on the angle of the English grind bevel, noting that several well-known turners use the grind at about an 85° bevel, allowing easy access to the bottom surface inside the bowl.

He also talked about the form of grinding the bevels on a skew. The length of the bevels should be about 1.5 times the thickness of the tool, producing a grinding angle of 35° to 40°.

Sandpapers

Various grading systems for sandpaper were described. Two popular grading systems are the Coated Abrasives Manufacturers Institute, or CAMI (pronounced cam-ee) scale, and the Federation of European Producers Association, or FEPA

(pronounced fee-pah) scale coming from Europe. The FEPA scale uses a P- in front of the grit number, while the CAMI scale is just the grit number with no prefix.

Abrasives on the P-scale are graded to tighter tolerances than CAMI-graded abrasives. This means that the CAMI-scale tolerates a wider range of grain sizes within the definition of any specific grit than the P-scale.

Additionally, there is a totally different micron grading system. This system is identified by the Greek letter mu, as in 30 μ . This scale refers to the actual size of the grit, where 1 μ (micron) is about 1/24th of .001". This scale is primarily for products where the grit is applied to polyester films, such as in Micro-Mesh, soft polyester foams, Abralon, and open mesh, Abranet. These products are primarily for achieving a high-polish finish, rather on bare wood.

Tolerances are even tighter for micron grading than either CAMI or FEPA scales. P-graded and micron-graded abrasives give more consistent cuts with fewer stray scratches from outsized minerals.

Another additive to some sandpapers is Stearate. In stearated papers, a lubricating substance is added to the surface coating, along with the AO or SC to aid in sliding the paper over the sanded surface, and to inhibit "loading" of the wood dust into the paper, logging the cutting action.

In addition to Silicone Carbide and Aluminum Oxide, there are two other principal abrasives used in sandpapers, ceramic and garnet. Ceramic is a manufactured substance which has excellent durability, giving papers made with them a longer life and faster cutting. Garnet, which is a natural mineral substance, is crushed to make the abrasive, and contains a wider size range of particles than other abrasives.

Buffing

Lastly, buffing as a step in sharpening was discussed. Buffing polishes the surface of the edge, making the steel cut smoother. Common buffing compounds are Chrome Oxide, usually green, and White Diamond, which is not as fine.

Bill stressed that there were three steps in sharpening to the highest possible edge:

Grinding to get the bevel – the coarsest level
Honing using stones or sandpaper to achieve the basic edge

Polishing with a compound and/or strops to finish the edge and help it perform.

He noted to always buff away from the cutting edge, working just up to the edge. Buffing can remove burrs, but will "soften" the fine edge on the tool, rendering it less sharp and less accurate. Always buff in the direction of the tool point to avoid catching the tool's edge in the buff.

Classes

Woodcraft

www.woodcraft.com

Here are our May to August 2010 Classes. Thanks!

Call ahead for reservations--505-342-9663 We also have drop-in workshops:

MAY

- Beginning Relief Carving, Part 2: (2-Day Class)-- Saturday & Sunday, May 1 & 2, 12-4 pm
- Turning the European Pen: Monday, May 3, 5:30-8:30 pm
- Hand Tool Joinery--Mortise & Tenons: Saturday, May 8, 1-4 pm
- Scroll Saw 103 (Intarsia): (2-Day Class) Monday & Tuesday, May 10 & 11, 5:30-8:30 pm
- Shadow Boxes & Trophy Frames: Saturday, May 15, 10 am - 4 pm
- Handmade Ceramic Knives: Sunday, May 16, 12-4 pm
- Turning an Acrylic Pen: Monday, May 17, 5:30-8:30 pm
- An Evening with Michael Mocho: Shear Scraping Techniques, Tuesday, May 18, 5:30-8:30 pm
- Spanish Colonial Carving: (2-Day Class) Saturday & Sunday, May 22 & 23, 12-4 pm

Drop-in Workshops

- Carving with John Winnett: Friday, May 7, 10 am-1 pm
- Turning with Ray Berry: Every Tuesday morning: 9 am-12 pm

JUNE

- An Evening with Michael Mocho: Turned Boxes & Lidded Containers: Tuesday, June 1, 5:30-8:30 pm
- Beginning Chip Carving: (2-Day Class) Saturday & Sunday, June 5 & 6 1-4 pm
- An Evening with Michael Mocho: Threaded Boxes: Tuesday, June 8, 5:30-8:30 pm
- Handmade Shaker End Table: (3-Day Class) Saturday, June 12, 10 am-5 pm, Sunday, June 13, 11 am-4:30 pm, and Saturday, June 19, 10 am-5 pm

- Beginning Pen Turning--The Slimline Pen: Monday, June 14, 5:30-8:30 pm
- Sharpening Turning Tools: Tuesday, June 15, 5:30-8:30 pm
- Turning a Natural Edge Bowl: Tuesday, June 22, 5:30-8:30 pm
- Sliding-Lid Bandsaw Box: (2-Day Class) Saturday & Sunday, June 26 & 27, 12-4 pm
- Turning The Cigar Pen: Monday, June 28, 5:30-8:30 pm
- Power Tool Tips & Tricks--The Table Saw: Tuesday, June 29, 5:30-7:00 pm

Drop-in Workshops

- Carving with John Winnett: Friday, June 11: 10am-1pm
- Turning with Ray Berry: Every Tuesday Morning: 9 am to 12 pm

JULY

- Exceptional Pen Finishes: Monday, July 5, 5:30-8:30 pm
- Beginning Relief Carving, Part 1: (2-Day Class) Saturday & Sunday, July 10 & 11, 12-4 pm
- Power Tool Tips & Tricks--the Router: Tuesday, July 13, 5:30-7 pm
- The Worksharp 3000 Sharpening System: Wednesday, July 14, 5:30-8:30 pm
- Router 101: Saturday, July 17, 10 am-5 pm
- Turn a Vintage Baseball Bat: Sunday, July 18, 12-4 pm
- Pen Inlay: Monday, July 19, 5:30-8:30 pm
- Beginning Pyrography: (2-Day Class) Saturday, July 24, 10 am -2 pm & Sunday, July 25, 12 - 4:00 pm
- Power Tool Tips & Tricks--The Bandsaw: Tuesday, July 27, 5:30-7:00 pm
- The Lap-Sharp Sharpening System: Wednesday, July 28, 5:30-8:30 pm
- The Koch Sharpening System: Saturday, July 31, 1-4:00 pm

Drop-In Workshops

- Carving with John Winnett: Friday, July 9, 10 am to 1 pm
- Turning with Ray Berry: Every Tuesday Morning, 9 am to 12 pm

NEW DROP IN WORKSHOP

- **Hand Tool Workshop--The 1st & 3rd Wednesday of each month: 5:30-8:30 pm**

Description: James will be on hand the 1st and 3rd Wednesday of each month to personally help you learn to use traditional hand tools. Bring in your flea market finds, your great grandfather's hand-tool "treasures" and learn to tune them up and use them correctly. If you are having difficulty with a woodworking project, James can show you a hand-tool solution. Drop in between 5:30 and 8:30 pm for help. Cost is reasonable--just \$35 for the 3-hour

session. That's a great deal for such personal attention.

AUGUST

- An Evening with Michael Mocho: Making Connections: Tuesday, August 3, 5:30-8:30 pm
- Building a Shaker Shelf: (2-Day Class) Saturday, August 7, 10 am - 5:30 pm & Sunday, August 8, 11 am - 4:00 pm
- Beginning Pen Turning--the Slimline Pen: Monday, August 9, 5:30-8:30 pm
- Power Tool Tips & Tricks--The Chop Saw: Tuesday, August 10, 5:30-7:00 pm
- Intermediate Pyrography: (2-Day Class) Saturday, August 14, 10 am - 2 pm and Sunday, August 15, 12 - 4:00 pm
- An Evening with Michael Mocho: Sculptural Techniques for Small Turnings: Tuesday, August 17, 5:30-8:30 pm
- Comparing Sharpening Systems: Koch, Tormek, Sorby ProEdge, WorkSharp 3000, and the Lap-Sharp: Saturday, August 21, 1-4 pm
- The Cigar Pen: Monday, August 23, 5:30-8:30 pm
- Power Tool Tips & Tricks--the Dill Press: Tuesday, August 24, 5:30-7:00 pm
- Beginning Relief Carving Part 2: (2-Day Class) Saturday & Sunday, August 28 & 29, 12 - 4 pm

Drop-In Workshops

- Carving with John Winnett: Friday, July 9, 10 am to 1 pm
- Turning with Ray Berry: Every Tuesday Morning, 9 am to 12 pm
- Hand Tool Workshop--The 1st & 3rd Wednesday of each month: 5:30-8:30 pm

If you have any questions, give me a call.

Thanks, Becky Weaver
505-342-9663

Santa Fe Community College
www.sfccnm.edu

Santa Fe Community College offers both credit and noncredit courses taught by some of the most prominent artisans in the woodworking field. Classes are offered in Fall, Spring, and Summer sessions. For more information on SFCC classes contact club member Al Mirman, one of the Woodturning instructors, at 771-0490. Information can also be found at SFCC's web site.

Discounts & Rebates

Woodworker's Supply
Meeting Day Sale

www.woodworker.com

Specials for May 1 meeting will be Page 32-33 from Catalog #246C. Adhesives and tools

Woodcraft
www.woodcraft.com
Wood of the month
 Olive Wood

Check the store flyer for current specials. As always, we look forward to seeing you at Woodcraft
 Bill Zerby, Manager

CLUB CREDIT FOR NMWT MEMBERS
 Woodcraft donates a portion of every sale to NMWT members to the club each year. It's not automatic, however. YOU MUST tell the cashier to "Credit this sale to the NMWT Store Donation" when you pay for your items.

Crafts Supply
www.woodturnerscatalog.com

Offers a discount to members on large orders. Craft Supply has implemented a new club support program. Visit their web site or phone Kathy Lawrence at 1-800-551-8876

Albuquerque Hardwood Lumber Co
 NMWT members receive Wholesale Prices. ABQ Lumber has hardwoods, Lampine, Thermofused Melamine, plywood, veneers, and furniture grade white pine.

For Sale!

Dear Wood Turners,
 My name is Michael Pierpoint. After twenty years in the navy and traveling to many places I have gathered various pieces of wood for future projects. I have made some projects, but my collection has outgrown my ability to create. Additionally, my wife and I are downsizing and moving to Guadalajara, Mexico. Although I would love to take all of this project wood with me I see that it would be impossible. (the customs people would probably frown on all of this uncured wood crossing the border). I have two juniper stumps (from California) with nice root figure; a section of Norfolk Island Pine (from Hawaii) (possibly Cook Pine I didn't see the whole tree); several branches of Cook Pine (1 to 2 inches in diameter I did see these trees); 1 chunk of Keawe (also from Hawaii) (Same genus as Mesquite, but harder) and a few other odds and ends. If anyone in your club would be interested in any of this wood please let me know at this email address or at (505) 792-9122. Thank you
 Michael J. Pierpoint

Remember, your items for sale will run for one month unless you request an extension. There is no charge

for listing items, and we welcome members to use this space for anything related to woodturning.

→ **You can also run an ad to FIND or TRADE something?**

NMWT Mentor List

Members are always welcome to contact the people on the following list for guidance to better turning ideas, and techniques -- Free to members so give a Mentor a call!

Name	Phone	Description
Bill Zerby	891-9188	Basic spindle turning & tool sharpening
Bob Clancy	281-4469	Basic turning & bowl turning
Dan Shipman	296-9754	Basic turning, hollowing & segmented construction
Irling Smith	865-9230	Segmented turning & design
John Ellis	771-1773	Basic turning, plates, tools & handles
Red Hollenbach	823-2260	Basic turning & small items
Ed Hume	291-9792	Preparation, inlay & polishing Turquoise
Ron Phillips	867-0612	Specialty tools, rests & steadies
Janet Smith	823-2439	Pen turning & finishing

President's Corner

Revised NMWT By-Laws

I am writing this just after the April Board of Directors meeting. At this meeting the Board approved the newly revised NMWT By-Laws to be presented for approval to a General Meeting of the club membership at the May 1, 2010 workshop. A committee composed of Rich McCartney, chairman and members John Vogel, Ron Bahm and Jim Griffin worked very hard to present to you a document that accurately describes how the NMWT does and should operate. The By-Laws were deliberately written in a very general form giving the Board of Directors some flexibility so that minor decisions could be made with board approval and not require the approval of the club membership.

Accompanying the By-Laws but not a part of the By-Laws are NMWT Policies and Procedures. This

document is issued by the Board and contains guidelines for actual club operations and can be changed and updated by the Board without approval of the entire membership.

A copy of each document will be distributed to each member either by email or USPS mail. before the May1, 2010 General Meeting and workshop. In addition a copy of the approved By-Laws and Policy and Procedures will be given to each new member.

The By-Laws will be presented to members for approval at the May 1 meeting.

Two months ago we circulated a questionnaire and the results indicated that the members wanted to know our demographics and what they wanted from the club. So--- we came up with another questionnaire that you completed and returned since the March meeting. **The results from that questionnaire are at the end of this newsletter.**

Gallery Of Turnings



Bill Kalb - Rose of Sharon



Bill Kalb - lapis and corral bottle stopper with turquoise inlay



Jim Preston - wenge, bloodwood, figured walnut, turquoise and silver



Red Hollenbach - shoe basswood, pill bottle sycamore and almin olive



Tom Bailey - segment bowl



Bob Stauch - unknown wood burl



Bob Stauch - closed form dyed bowl



unknown



Ray Berry - 2 corn cob candle holders

The Library Corner

We are in the process of converting all of our tapes to DVD's. The tapes will be available for check-out, but only by request. We have many new DVD's from the Symposium.

NMWT Denim Shirts

Prices for NMWT's Shirts and Hats

Long Sleeve Denim Shirt	\$27.00 including embroidery
Short Sleeve Denim Shirt	\$25.00

Polo (golf) shirt	\$22.00
Short Sleeve T-Shirt	\$15.00
Caps (baseball)	\$11.00
Add \$2 for XXL and \$3 for XXXL	
Names Embroidered on Shirt	\$3.00
Logo on Customer Supplied Garment	\$9.00
Contact: Tom Cour 867-8771	

Lathes

NMWT owns several lathes, which may be checked out. New members who have yet to purchase their own lathe are encouraged to take advantage of this club benefit. If you meet or hear of someone who might benefit from this resource, please pass their name on to John Ellis.

Web Sites

NMWT

www.nmwoodturners.org

Please visit our web site. Webmaster Dave Stein continues to made many additions and improvements that are very useful to club members and the public. If you have not been there lately we now have a slide show on the Home Page and the Gallery is divided into sections with slide shows.

Found a good WEB site? Want to share it with other club members? Then send the info to our web site at: www.nmwoodturners.org

Questions or suggestions are welcome. Please contact the club Webmaster Dave Stein at: dave@seriouslight.com

Suggested Web Sites

www.cleanturn.net
www.pennstateind.com
www.tufftooth.com
www.woodmagazine.com, www.penturners.org
www.woodturnerscatalog.com
www.WoodTurningz.com
www.woodturningvideosplus.com
www.woodweb.com
www.woodworkersjournal.com

For those of you who have equipment or material for sale, you can have it posted here in our newsletter, but another resource is: www.albuquerque.craigslist.org

Results of the Questionnaire
From the President's Corner, p. 6

Total questionnaires completed: good)	47 (just under half, which is
Are you a member of NMWT?	47 yes, 0 no
Are you an AAW member?	32 yes, 15 no
My turning skill is;	
beginner:	5
intermediate:	19
experienced:	15
master:	2
Do you sell your work?	9 yes, 35 no
Do you own a lathe?	46 yes, 1 no
If the opportunity were presented would you:	
attend a tools/jig/fixture hands-on workshop?	47
attend a turning techniques hands-on workshop	42
participate in demos (ie state fair)	25
meet with an NMWT mentor to further my skills	27
become an NMWT mentor	10
participate in a youth turning program	9
Attend a hands-on session with a pro for a fee	37
enter a piece in an exhibition (ie state fair)	31
attend an AAW or regional symposium	25
host a club event	13
serve in an NMWT leadership role	11

These results gives us a clear indication in what activities the members would participate. We already have two professionals scheduled and are working on a tools/jigs/fixtures workshop. If anybody would like to work on a turning techniques work shop please let Tom Cour or John Ellis know.

We are considering a group purchase of individual respirator systems for removal of dust particles down to 0.3 microns. More on this later.