

The CNEW SKEW

Copyright © 2004 Central New England Woodturners

November Notices & Editorial

Special points of interest:

- November Editorial
- Contact Points for 2004 Officers
- Reports & Coming Events
- Metallurgy Demystified©
- Nov. Meeting Pictures by Emilio Iannuccillo

Inside this issue:

Editorial & Notices	1
Club Officers	2
President's Message	2
Minutes of Past Mtg.	2
Next Meeting Notice	3
Metallurgy Demystified	3
Show & Tell Pictures	5
Nov. Meeting Photos	6
Coming Events	7
November Demo Pictures	6, 8
Lyle Jamieson Pictures	8

Update: Fall WCC Crafts Fair

At the November meeting, member Paul Charbonneau volunteered to undertake the responsibilities of CNEW chairman for the *WCC Craft Fair*. Over a dozen members also volunteered to be present for setup, sales staffing and takedown for the weekend fair. Paul will be coordinating activities by the various members. As always, the success of the affair will depend upon the efforts of many members. If you want to take part and have not yet signed up, please contact Paul (508-853-7622) or any of the officers of the club (see p. 2).

Old timers may recall that Paul also built the club's Sales Station. That and the other components of the club's booth are stored upstairs at WCC. It is imperative that we get these downstairs BEFORE Thanksgiving, since it will be impossible once the other vendors have set up. A work party to accomplish this will take place on Wednesday evening at 6PM on 11/24/04.

If you want to sell any turnings, it is not necessary to be present. However, you must get your works to the fair on Friday morning, November 26. As usual, the minimum cost is \$10.00 if your pieces do not sell. A small percentage of sales is withheld

to reimburse the club for expenses. In past years, the club has experienced total sales of about \$2500 to \$3000.

The fair runs from 12 Noon on Friday, 11/26 to 5PM Sunday, 11/28. A work party is required to bring the booth materials back up into the WCC attic on Sunday.

Update: Annual Elections.

A brainstorming session at the last meeting produced a number of volunteers for various offices for the coming year. As of this point, the slate of candidates for 2005 is as follows:

President	<u>No Candidate yet</u>
Treasurer:	Rich DiPerna
Internal VP	Bobbie Tornheim
External VP	Reid Gilmore
Tape Libr.	Wayne Moore
Book Libr.	<u>No Candidate yet</u>
Web Site	Dennis Daudelin
Secretary	<u>No Candidate yet</u>
Newsletter	<u>No Candidate yet</u>

See the notice about the December meeting on page 7.

In lieu of an editorial this month, I am delighted to present the following article on tool metallurgy by Lee Valley Tools.

(Continued on page 3)

Club Officers and Contact Info for 2004

President, Reid Gilmore	508-856-5894	<i>reid.gilmore@umassmed.edu</i>
VP, Internal, George Whippen	978-663-4693	<i>gwhippen@verizon.net</i>
VP, External, Charles Turnage	508-770-8072	<i>cat41259@aol.com</i>
Secretary, Bob Iuliano	401-725-7284	<i>bobio@cox.net</i>
Treasurer, Richard DiPerna	508-358-2471	<i>richard@diperna.com</i>
Newsletter, Norm Mancuso	508-653-4195	<i>normancuso@comcast.net</i>
Video Librarian, Al Faul	978-534-3683	<i>alfaul@gis.net</i>
Book Librarian, Glenn Randall	508-836-3814	<i>ageminus@charter.net</i>
Webmaster, Dennis Daudelin	978-456-8005	<i>dennis@daudelin.net</i>

The President's Message

As you read this newsletter it is clear that yet another year is drawing to a close. This time last year I was one of the CNEW members that sat in the back row at the meetings and hoped to learn something from the demos and looked forward to admiring the woodturnings that were bought in by the more experienced members.

One of the perks of being president is that you get the best seat for the *Show and Tell* table throughout each meeting. I know I've learned a lot from looking at all the nice bowls, vases, pens, ornaments, etc., that have been brought into our meetings.

As president of CNEW, I can also thank all of the officers and members for the great job they have done this year to make CNEW a success. Without the schedule of demos (George), newsletter (Norm), website (Dennis), photography (Emilio and Vicky), video library (Al), book library (Glen), craft sales (Charles), wood swaps (Ken, Ray, Wayne, Graeme, Dennis and many more), secretary (Bob), treasurer (Richard), demonstrators (Peter, Will, Bob, Dennis, Frank, Charles, Steve and Angelo) and demo photographer (Richard) there wouldn't have been much point to showing up at the Worcester Center for Crafts on the first Thursday night of every month. Thanks also to all the members who have shared their skills by bringing work into the *Show and Tell*.

For those of you who missed the November meeting, various members have been nominated for most of the officer positions for next year, so it will

be safe to show up for the holiday party. If you would like to do a demo next year, or have an idea for a demo, contact Bobbi Tornheim. As in past years we are having a gift swap of turned items for the holiday party, so it is time to crank up the lathe and get creative. We won't be having a *Show and Tell* in December.

Reid Gilmore

Minutes of the Past Meeting

Thirty two members were present at the meeting conducted by President Reid Gilmore. New member Paul Wieloch introduced himself.

We were reminded of Ocean Woodturner's upcoming Demo with Lyle Jamieson at Cold Spring Community Center in R.I. which will cost \$10.00 including lunch and beverage. Emilio has directions. In addition, Angelo Iafra will have Lyle at his house for a private (four) lesson. He will charge \$400.00 for four people. The fee is to be split. There is one opening.

Christian Buchard is offering a 3 day turning workshop in Ashland Oregon. Robert Hamada is putting out a DVD for \$21.95 from Hawaii "*Retrospectives of Career Works*". Arrowmont is offering a scholarship. See Reid Gilmore for details.

AAW board member Ron Alexander sends greetings from AAW. The organization wants more people involved in publishing the monthly maga-

(Continued on page 4)

Next Regular Meeting Thurs. Dec. 2, 2004!

This is the annual election meeting. Following the normal business meeting and election we will undertake our annual holiday celebration. The food will no doubt be excellent as it was last year. There will be no *Show & Tell* at this meeting. In its place, we will have the holiday gift swap. Anyone who wishes to take part in this is requested to bring a small gift turning in a plain brown paper bag with a three-foot string attached. If you bring a gift, you go home with one.

Editorial/Report

(Continued from page 1)

Metallurgy Demystified©

A Buyer's Guide to Tools

While Taiwanese tool manufacturers tout the advantages of high-carbon steel, North American suppliers are often silent about the merits of the far superior high-speed steel. Without adequate information, the unsuspecting woodworker must rely upon the promotional "facts" that manufacturers use to sell their products. The truth about the composition of a tool is not always clearly stated. For example, high-speed steel often has the same amount of carbon as high-carbon steel. And high-speed steels often contain molybdenum or tungsten as their principal alloying element, the same ingredient used in carbide tools.

As you know, higher prices are not always proportional to higher quality. So, rather than purchasing the next tool for which carbide becomes the material of choice, find out which type of a specific tool best fits your needs. To do so, you have to understand a little bit about metallurgy.

All cutting tools can cut materials of a lesser hardness - for a while. Some cutting edges stand up longer than others. This is due to a number of factors other than absolute hardness. Properties such as heat resistance, shock resistance, toughness, hardness and red hardness all affect the durability of a tool.

Alloying elements – carbon, nickel, chromium, vana-

dium, molybdenum and tungsten - affect these attributes in a variety of ways. These elements, when used in isolation or in conjunction with one another, alter the cutting characteristics. But before listing the characteristics of each of these alloys, it is important to understand how a metal behaves under load and why.

Dislocation Theory (or, Why Steel Isn't Mush)

As a metal cools, small particles form in the liquid, and eventually crystals develop in a regular, 3-D geometric pattern. But because the particles solidify randomly throughout the liquid, the crystals or grains will eventually obstruct one another and form grain boundaries. The atoms at the grain boundaries are not as well bonded to their neighbors as they are to others within the same crystal or grain.

Usually there are many breaks (called dislocations) in the neat atomic structure, which allow the atomic bonds to break in a progressive manner, each at very low forces, rather than simultaneously.

Solid metal doesn't become mush because the many dislocation lines interact with one another, impeding the progression of each dislocation. Moreover, since the slip planes of neighboring crystals are rarely in exact orientation with one another, a dislocation is also stopped by a grain boundary. So, the greater the number of crystals in a given area, the greater the strength, hardness and impact resistance, all resulting in higher toughness. The promotion of fine grain size is one of the most important factors influencing toughness.

What Exactly Do All Those Elements Do?

Carbon (C), added to all steels, increases hardness (though at the expense of ductility). No cutting tools are made of low-carbon steel (less than 0.3% carbon), as there would be insufficient carbon to allow hardening to any significant degree. Medium-carbon steel (0.3 to 0.6% carbon) possesses increased hardenability and toughness. High-carbon steel (0.6 to 1.2% carbon) has very good wear resistance and hardenability, but is not as tough as carbon steel with lower carbon contents. Toughness is necessary when, for instance, a drill bit encounters a hard pin knot. A high-carbon steel drill bit will have reasonable longevity between sharpenings, but if its cutting edge encounters an abrupt change in the material, it is

(Continued on page 7)

November Minutes

(Continued from page 2)

zine. He is looking for articles. Submission guidelines are on the website. AAW is also soliciting grants from people to improve their woodturning education

Craft Supplies is offering the following deal. If anyone places an order for \$100.00 or more, a \$15.00 voucher will be sent after Dec. 15th. *Ocean Woodturners* can get 15% off all woodturning books.

Joe Harbey announced that there will be a general \$10.00 fee for entrance to the *Eastern States Exposition*. This will be held in January of 2005 from the 14th to the 16th. For information call 1-800-525-7480 or www.woodworkserents.com

Officers need to be replaced for the coming year. There is no nominating committee. Will any of the current officers stay? Norm Mancuso suggested that each officer be responsible for replacing themselves. A general discussion yielded the list given on page 1. We still need a President, Newsletter Editor and a Recording Secretary.

The *Fall Craft Fair* is coming up on November 26th to 28th. We will have the same booth which needs to be put together. The materials need to come down from the attic. Help will be needed Weds at 6 pm. We will need a chairman for the sale as well as a credit machine. Charles Turnage volunteered to loan us his machine. Paul Charbonneau volunteered to be chairman. Rick Gonzales volunteered to be in charge of taking the booth down at 4 pm on Sunday.

To sign up for wood harvest information go to CNEW.org, the bottom of the homepage, and sign up by entering your e-mail address.

Approximately twelve CNEW members attended the *Totally Turning* symposium in Albany over the Halloween weekend and all had a thoroughly enjoyable experience and recommend it for the future. There were approximately 350 turned items in the instant gallery and Will Hunt's pieces

received acclaim at the critique.

Our Holiday meeting will be held in lieu of our December regular meeting. We will elect and install new officers for those positions we were able to fill. So far we have no secretary so these may be the last minutes for the foreseeable future. Bring a turning in a bag with a string to participate in our annual grab bag. A great way to collect some fine work from other members. There will be no *Show and Tell* at this meeting or wood swap as we will just be enjoying each other's company, gifts, and edible treats.

Treasurer Richard DiPerna reported we have as much money as we started with and maybe a small surplus. Dues will not have to be raised as we had a really great year with the wood swap. Hats off to Ken Dubay who generally supplies most of the wood.

Our member list is available from our web site. www.cnew.org. You can click onto *CNEW email@yahoo.com* and sign up for our email notices. Anyone who cannot and would like an updated membership list contact Dennis or Richard.

Bobbie Tornheim and Bobio Iuliano

Please Return Books and Tapes!

Al Faul has requested that members who have borrowed books and tapes from the club's libraries to please return them as soon as they are finished. Members should recall that the late fee is the same as that for a one-month rental, not that \$2 will break anyone. Please be considerate of your fellow members who may want to read or view that same book or tape.

The article on Tool Steels is reprinted by courtesy of Lee Valley & Veritas. Lee Valley Tools has markedly broadened its offerings of turning tools and supplies. Call 1-800-267-8735 or email customerservice@leevalley.com for a comprehensive catalog. While you are at it, compare some of the prices for these tools with those from other suppliers. You will be favorably impressed. As a teaser, Sorby Steb Centers at \$49.95, \$10 cheaper than at most other retailers! Similar savings are available on Kelton tools.



The October Meeting
Show and Tell Pictures by Emilio Iannuccillo



The November Meeting Views from the Floor.

Due to an oversight, captions are unavailable for the pictures of the *Show & Tell* items on this page and also on page 5. Sorry about that! My apologies to the craftsmen and to the other members of the club.



Peppermills & Saltshakers! Dennis Daudelin treated us all to a detailed presentation on the production of these items, as well as some useful procurement information! See the remaining pictures (by Emilio, of course) on page 8 of the newsletter.

We are always looking for articles, book & video reviews, etc. Send them via mail or email (see page 2) to the Editor. The deadline for ALL inclusions to the monthly newsletter is the 15th

Coming Events

Thurs. Dec. 2, 2004 CNEW Meeting

This is the annual election meeting. Following the normal business meeting and election we will undertake our annual holiday celebration. The food will no doubt be excellent as it was last year. There will no *Show & Tell* or *Wood Swap* at this meeting. In their place, we will have the holiday gift swap. Anyone who wishes to take part in this is requested to bring a small gift turning in a plain brown paper bag with a three-foot string attached. If you bring a gift, you go home with one.

Thurs. Jan. 6, 2005 CNEW Monthly Meeting

No program scheduled as of this date.

Metallurgy Demystified

(Continued from page 3)

likely to fail at that contact point.

Another drawback of high-carbon steel tools is their inability to hold an edge at elevated temperatures. Beyond 400°F, high-carbon steel begins to lose its hardness. The tips of cutting edges are often subjected to such temperatures, and once their hardness is lost, the edge breaks down in ductile failure.

Nickel (Ni) increases toughness and impact resistance, while reducing the tendency to distort as the material is quenched during the hardening process.

Vanadium (V) is another alloying material that forms strong carbides. These carbides do not readily disperse into the molten steel, so as solidification progresses, grain growth is inhibited.

Chromium (Cr), when added to steel during the manufacturing process, joins with carbon to form chromium carbides. This increases the material's ability to harden, as well as its abrasion and wear resistance.

Molybdenum (Mo), like chromium, joins with carbon to form stable carbides but resists grain growth at elevated temperatures. Consequently, fine grain size is retained. It is resistant to tempering, and promotes excep-

tional toughness. Although molybdenum is not as good as tungsten at promoting red hardness at very high temperatures, it costs less, and is adequate for less extreme temperatures.

Tungsten (W) is very effective at promoting the formation of stable carbides at high temperatures. When the tungsten content is more than 18%, and when it is combined with lesser percentages of chromium and vanadium, the most common formulation of high-speed steel is formed.

Such steel is made by conventional processes (melting the mixture). However, if a material can be made without some of the softer binding agents, such as iron, a greater concentration of the harder alloying elements is possible. This is how carbide, or as it is more correctly (and aptly) named, "cemented carbide" is made.

To produce tungsten carbide, tungsten powder is mixed with carbon at a ratio of approximately 94% to 6%. Small amounts of cobalt are then added, which will act as the binding element. When this powdered mixture is held under high pressures and temperatures (about 2500°F), tungsten carbide is formed, held together in a matrix of cobalt. The result is an extremely hard, but brittle, cutting material. Provided sudden shocks can be avoided, failure occurs most frequently when the lower-melting cobalt wears away, exposing poorly held carbide particles, which are apt to break off. The higher melting temperatures of tantalum and titanium make them more suitable as binding elements. They form "tantalum carbide" and "titanium carbide", which cost more.

Coated Carbide is a recent development and is produced by a very thin application of an even harder and extremely brittle alloy, to any grade of carbide. Titanium Nitride or "*TIN*" coating as it is often called, is the most popular hard coating, and is easily recognized by its gold color. This vapor deposition coating is so hard that it can only be applied .0002 to .0003" thick, otherwise it would fracture within itself. It must also be supported by a tougher, but very hard material, such as carbide. It is the combination of the extremely hard, thin coating, plus the substrate's ability to provide the required toughness, that makes *TIN* coated tools effective. The only drawback (besides the added cost) is that it is removed at the first resharpening.

To be continued next month

Reprinted with permission of Lee Valley Tools, Ltd.
©Copyright 1998 to 2004 by Lee Valley Tools Ltd. and Veritas® Tools Inc.
All rights reserved.

The CNEW SKEW

CENTRAL NEW ENGLAND
WOODTURNERS

Central New England
Woodturners
c/o Worcester Center for Crafts
25 Sagamore Road
Worcester, MA 01605

Phone: 508-753-8183
Fax: 508-797-5626
Email: nrmancuso@comcast.net



Central New England Woodturners

A Chapter of the American Association of Woodturners



We're on the Web!
www.cnew.org

Fold line



Above: Peppermill production by Dennis Daudelin
Below: Ocean Woodturner's Lyle Jamieson Demo

