NEXT MEETING
FEBRUARY 27

FEBRUARY - VOLUME 3, ISSUE 2

ASSOCIATION OF REVOLUTIONARY TURNERS

FEBRUARY 22, 2004

WWW.REVOLUTIONARY-TURNERS.COM

INSIDE THIS ISSUE:

SAFETY TIPS

- **Always wear a face shield!!!**
- **Make sure your tail-stock is LOCKED before turning on the lathe!!!**
- **When you have to chase your lathe around the room, you're turning speed is too high.**

PRESIDENT'S COLUMN

I'm happy to serve as President for the coming year. Something I believe strongly in is that if you receive, you give back. This is just like the wood turner's credo that if you receive wood from someone, they get a turning in exchange. I've received a lot from our club. Now it's my time to reciprocate.

The 2 PT's, Peter Toch and Peter Teubel have done an excellent job in creating our club and getting it to where it is today. I see my job as continuing their efforts to help the club grow, not only in terms of numbers of members, but in value received. To me this means wood turning education and kinship. Based on our last meeting, there is also an interest in extending value and purpose outside of the club to the community service area. Joanne VanPelt has graciously agreed to spearhead this effort. The other 2004 board members, Bobbi Tornheim, Gary Bashian, Dick Vose and Peter Priestner also share the same sense of purpose and commitment to our club.

Consistent with what we believe are those shared by the majority of members, our goals for the coming year are:

• To have quality demo's on a monthly basis using the special expertise of individual club members and at least once during the year import a "name" wood turner.

• To add 1 or 2 selling venues in addition to the current plans for Marshfield, Prowse and Topsfield.

• Offer club equipment for members to use for a nominal rental fee.

• Continue to expand our video and book library for educational purposes.

• Continue the purchase of supplies on a large basis so members can obtain them at wholesale rates.

• Maintain and hopefully expand our wood swap through the "harvesting" program being formulated.

• Establish and implement a Community Service Program.

• Initiate a summer cookout or picnic.

In terms of bio information, I am a MA native and received a BS in Chemical Engineering from Northeastern. From 1971-1973 I was in the army patrolling the Iron Curtain between what was then East and West Germany, (on the western side of course). Most of my professional career was with Bird Machine Co., a manufacturer of large scale machinery for the chemical and other industries. I've lived in many parts of the country and traveled on business all over the world. Many of these places you will never find in a tourist brochure. I began turning in 1994 after seeing a local club demo at an Audubon Nature Park. With the help and support of a very wonderful woman, I am currently trying to make a living as a full-time wood turner.

The doors to my phone, computer, and shop are always open to anyone who wants to voice their opinions and desires for the club. I'm looking forward to 2004.

Ken Lindgren

TURNER OF THE MONTH - DAVID EATON

By Bobbi Tornheim

It is a fitting time to memorialize Dave Eaton as he steps down from his position as External Vice President of our fledgling ART chapter. As many of you who were with us from the beginning remember, our initial President, Peter Toch, left suddenly due to his employment situation. The founding board quickly considered likely prospects for new board members based on very cursory impressions. Dave looked both sensible and personable. And, yes, he was willing to come aboard. (Note the double entendre)

Now, Dave didn't take up much of your time at meetings, and he didn't grandstand about what he did for us, but he quietly researched, organized and helped produce those retail programs and demonstrations that so many of us took part in and profited from. He added a balanced, calm, and selfless perspective to board meetings. A good pick, as it turned out. So here's a little bit about our former External V.P.

Dave was born and raised in Natick. His formal introduction to wood was in shop class in Junior High School. His Mom still has the letter holder box that was his first school project. But really, says Dave, he learned everything he knows from Dad. Father Eaton was chief Boatswain in the U.S. Navy for 30 years, then later Plant Superintendent at Boston University. He was knowledgeable in many aspects of engineering. So following Dad around, Dave picked up plumbing, electric, woodworking, and "how to put things together".

The back yard at Dave's home provided space for building tree houses and clubhouses with and without Dad. His skills led him to become the youngest Eagle Scout in history. With skills learned at home in tow, Dave spent three years at the Boy Scout's Camp Resolute in Bolton as Camp Ranger, a responsibility which required building and maintenance of cabins, rowboats, docks, etc.

One summer, Uncle Ray who owned 350 acres of woods in the Berkshires wanted a bridge built across the creek so that he could drive his golf cart over. Dave, together with his mom and dad tackled the job as a family project, using trees, branches and whatever they could get their hands on to make it happen. Sounds like great fun!

Out of the woods for several years, Dave procured his degree in Electrical Engineering from Northeastern, and did some electronics design for a while. Next he worked in Sales and Marketing to a High Tech Electronics firm. This enabled our local boy to go everywhere – Germany, Japan, England, France, Switzerland, and more. All this travel made it clear to Dave that there's no place like home. Six years ago, Dave married Laura, his High School sweetheart. and abandoned his Waltham apartment for a home in Natick.

Now firmly back where he belonged, and a home owner to boot, Dave set up his first woodworking shop. Two years ago Laura bought him a Delta midi lathe for Christmas. In a short time, Dave outgrew this and moved up to a t HP Delta 1642. Meeting our Frank Movitz at an ART meeting inspired Dave to take Frank's course. He was particularly interested in sharpening. He felt so strongly about starting at what he felt was the "first step" that he told Frank that they shouldn't worry about turning much until he knew how to sharpen.

Unlike some of us who are more product oriented, Dave is process oriented and needs to know how to prepare to do something well before he tackles spitting out finished pieces. That's the engineer in him, as well as the willingness to take on the necessary procedural tasks that need doing. Did I mention, that as new V.P. Dave helped touch up the by-laws, assisted getting the e-mail up and running and coordinated the Back Stage Gallery?

Dave thinks about different aspects of turning that may not occur to some of us. He will break a process like sharpening down into philosophical incre-

"...he didn't grandstand about what he did for us..."

TURNER OF THE MONTH - DAVID EATON (CONT.)

ments and consider the theory behind the process, the pros and cons of different profiles, the timing of when to sharpen, etc.

As a relatively new turner, Dave has been evaluating different products for sale and then trying them out in a number of outlets. He has had good success with his bottle stopper tops, pens, letter openers, and bird houses. Lately, he's toyed with the idea of making whirly-gigs. As a partnership, he and Laura find projects that require both wood turning and painting. Dave enjoys making larger greenwood bowls, but is not yet feeling as proficient as he would like. He thinks about the balance of time, money, learning curves and challenges that someone thinking of considering wood turning as more than a hobby must. At this point, Dave insists that it is a hobby. But if he finds the right product…who knows?

Well, there's Dave. I think we all owe him a "thank you" for jumping into the ART mix and donating his skills and energy to all of us. Although he is not staying on formally, he stresses that he is not going away either. Case in point, he latched onto my suggestion that the club have a means of communicating about wood on the hoof opportunities. Dave quickly and cleverly made a vehicle in his website for us to pass on this information and get that wood! (Don't forget to make a contribution to the wood swap, y'all) Just try www.eatonwoodworking.com to check it out.

> " Dave has been evaluating different products for sale "

MEDIA LIBRARY

Current Video Inventory:

* *Turning Wood with Richard Raffan*
* *Turning Boxes with Richard Raffan*
* *Turning Projects with Richard Raffan*
* *Bowl Turning with Del Stubbs*
* *Skill Building Projects with Mark St. Leger*
* *Sharpening Fundamentals*
* *Turning Projects from Scrap with Bob Rosand*
* *Natural Lipped Bowls – Ken Bullock*
* *Wooden Bowls on a Budget – Ken Bullock*
* *Rude Osolnik – Dean of American Woodturners*
* *David Ellsworth Tape #1*
* *David Ellsworth Tape #3*
* *David Ellsworth Tape T*
* *Skew Chisel with Alan Lacer*
* *Turning a Salt & Pepper Mill by Holtham*
* *1996 AAW Symposium - Techniques*
* *1997 AAW Symposium - Techniques*
* *1998 AAW Symposium - Techniques Vol #2*
* *1998 AAW Symposium - Techniques Vol #1*
* *1999 AAW Symposium - Techniques Vol #1*
* *Vessels of Illusion by Trent Bosch*
* *From Tree to Table by Mike Mahoney*
* *Woodturning Wizardry by David Springett*
* *Woodturning - A Foundation Course*
* *Mike Darlow DVD set*

-> Available on VHS tapes

Current Book Inventory:

* *Woodturning - TIME/LIFE Book*
* *The Fine Art of Small-Scale Woodturning*
* *Fundamentals of Woodturning by Mike Darlow*
* *Woodturning Methods by Mike Darlow*

"If anyone would like to donate any ORIGINAL videos (no copies), please contact any of the club's officers."

CLUB EVENTS

* No club events yet scheduled

FEBRUARY MEETING AGENDA

Remember to bring in some wood for the wood swap to help support the club!

6:30pm—7:00pm
Arrive early for some social time and please remember to **park across the street at the Fleet Bank parking lot.**

7:00pm—7:45pm
* Club business
* Announcements
* Show & tell. Bring your pieces in for discussion

7:45pm to 8:00pm
Break

8:00pm—9:00pm
Demonstration: John Moore
"Turning Thin Stem Goblets"

9:00pm-9:15pm
Break

9:15pm - 10:00pm
Wood Swap

NOTES FROM THE 'NET

Practical Tool Steels

by Russ Fairfield
www.woodturnerruss.com

Too many woodturners are looking for that magical tool that never needs sharpening. Like the 200mpg carburetor, they think that modern technology should be able to provide this to them. The tool manufacturers have capitalized on this desire with "new" tools that are sold on basis of advertising claims such as "new and better", "Powdered Metallurgy" because it is better, "durability", greater hardness, and a lot of technical terms that nobody understands. It must be working because all of the catalogs are filled with these tools. They are purchased solely on the basis that they don't have to sharpened as often.

We never consider such things as whether the steel alloy is even suitable for use as a tool, that it may be too brittle for a small diameter tool, how sharp and edge we can get on it, what grinding wheel and speed should be used, or whether we should be using a coolant for grinding these steels. As Lyn noted, only Jerry Glaser and a few lesser known manufacturers have continued to make turning tools whose metallurgy is matched to the size and use of the tool.

Making a scraper from the new high-alloy steels is a step in the wrong direction. Whether the burr is put on a scraper with the heat from a grinding wheel or by displacement of the steel at the edge with a burnisher, the sharpness and quality of the burr decreases with the increasing alloy and particle sizes in the steel.

We can use a rather simplistic analogy. Think of a piece of high carbon tool steel as a package of "corn flakes", and the high alloy as the same box filled with BBs and golf balls. When softened by the heat from a grinding wheel, the "flakes" at the cutting edge are bent upwards to form a burr that is the thickness of a single flake that is still attached to the other flakes in the package. The "flakes" have enough ductility that they can also be bent with the pressure of a burnishing tool.

The farther we get away from the box filled with "flakes", and more towards the box that is filled with BBs and golf balls, the more difficult it is to form a thin burr on the edge. Some of these high alloys will have 50% of the flakes replaced by the BBs and golf balls. High Speed Steels were developed for machining steel WITHOUT using a coolant, and to still hold their cutting edge into the "red hot" range. We can't generate enough heat with a grinding wheel to displace the edge to form the burr. In the higher alloys, there aren't enough of the "flakes" remaining to form the burr.

Using a burnisher depends on the ductility of the steel. The higher alloys have a stronger bond between the BBs and golf balls, they are less ductile, and it becomes more difficult to move the metal as their number increases.

We have to consider what we are trying to do. These tool alloys were developed for cutting steels and not wood. The mechanics are different. When a steel is cut with a tool, a small crack is propagated ahead of the cutting edge. The tool wear is then the result of erosion of the tool surface behind the cutting edge. It is not unusual to have a burr of metal bond to the cutting edge to fill the void that is created by that small crack.

" These tool alloys were developed for cutting steels and not wood. "

Wood is separated by two mechanisms. The cellulose is either sliced with apart with a very sharp edge, or it is ripped apart with a tearing action. We can use the comparison of "shearing" a sheet of paper with a scissors as opposed to "tearing" it apart with force. We would always prefer the "slicing" to the "tearing". But the "slicing" starts to become the "tearing" as the edge loses its ability to cut through the fibers. It doesn't matter whether the change is because the edge of the sharp "flakes" has worn away, or that the edge was never sharp because it is filled with BBs and golf balls, the result is the same.

This same analogy can be applied to describe the differences in the cutting edge in a "sharp edged" tool that doesn't require a burr. It has to do with the sizes of the particles and how many of them are in the alloy. The edge of a single flat "flake" of steel is sharper than that same edge with a lot of BB's and a few golf balls in it. These BBs and golf balls are

NOTES FROM THE 'NET (CONT.)

harder and will wear less than the "corn flakes", but they will never be as sharp.

The far end of the alloying spectrum is a "carbide" where all of the flakes have been displaced from the box and it is filled with nothing but the BBs and a few golf balls. They are bonded very tightly together, they are very durable, but they don't make a very sharp edge for "slicing" through wood fibers.

Where we want our tools to fit into this specturm of "corn flakes" to BBs and golf balls is the choice of the user. My choices are as follows....

SKEW

This is a tool where the sharper the edge and the smaller the bevel angle, the better it cuts. It is impossible to make the edge of a skew "too sharp". For this reason, any alloy greater than an M-2 HSS is detrimental to having a "sharp" tool.

SCRAPERS

High Carbon steel makes the better burr, but M-2 HSS is a good compromise between the sharp edge and durability. An M-4 steel is marginal, and anything of a higher alloy than that is a waste of money because the tool is no longer useful.

GOUGES

An M-4 or similar HSS is the best compromise between durability and sharpness for most turning, and I have slowly replaced nearly all of my gouges with the M-4.

I have a 3/4" diameter high-alloy that I reserve for roughing cuts on large pieces, abrasive woods, bark edges, and nails; all places where I want a durable tool and the surface finish and tear-out aren't important. This is also a large diameter tool where strength is more important than flexibility, and I sometimes wish that I had one of them that was 1" diameter.

I still use a High Carbon tool steel as a finishing tool for spindle work because the sharper edge will leave a smoother finish on the surface of the wood.

PARTING TOOL

Like the skew, the parting tool is better when it is sharper. I use a parting tool a lot for spindle turning, and the quality of the cut is important to me. For this reason, I prefer an M-2 steel for this tool. I purchased a 2030 alloy parting tool, but the sharpest edge that I can get on it is about where I would take the M-2 tool back to the grinder. There is no advantage in having an almost dull tool that will stay that way for a longer time.

ROUGHING GOUGES

This is a tool that truely needs to be redesigned. It was originally made to be used as a curved skew for spindle turning where we are riding the bevel and all of the cutting forces are straight back into the handle; and there is very little bending force at the tang. Any use that puts a bending force on the tool can cause a problem and using a less ductile alloy for the tool only increases the problem because then it will break, rather than bend, at the tang. The larger this tool is made the worse the problem becomes because the thickness at the tang remains the same.

The modification of adding a piece of brass rod across the tank is a good one. Besides bing a stiffer tool, the added weight is a benefit. It doesn't even have to be brazed in place to be beneficial. Bedding it into the tool with a flexible epoxy works as well as brazing. I have always wondered why some tool manufacturer hasn't started making them. I used to make this modification to the tools. It seemed like a good way to make a couple dollars, but I had to give up because I couldn't charge enough to compensate for the tool cost and the time required to modify it.

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" There is no advantage in having an almost dull tool that will stay that way for a longer time. "

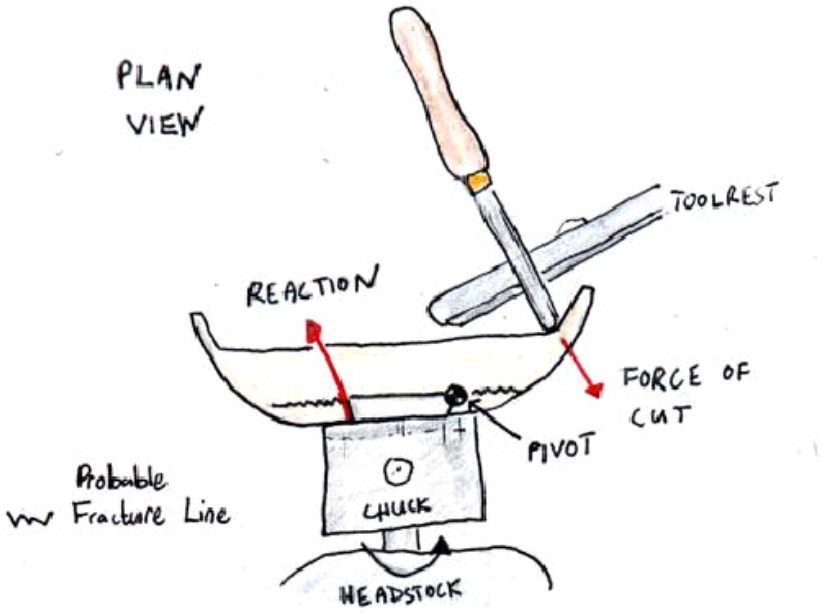
NOTES FROM THE 'NET (CONT.)

Some Thoughts on Internal Chucking

by David Eaves

There have been a few posts recently about the problem of internal dovetail chucking having a tendency of splitting the recess out. Fortunately, out of 17 bowls I've done so far I've only split one out. I thought I knew why at the time it had happened. However, inspired by the other posts and a desire not to do it again I thought I would consider what is happening. Both force wise and consider some real numbers and strengths. I'm new to this game and don't have the years of experience others have, so feel free to add comments or disagree with my reasoning.

Simplified plan view of turning a bowl



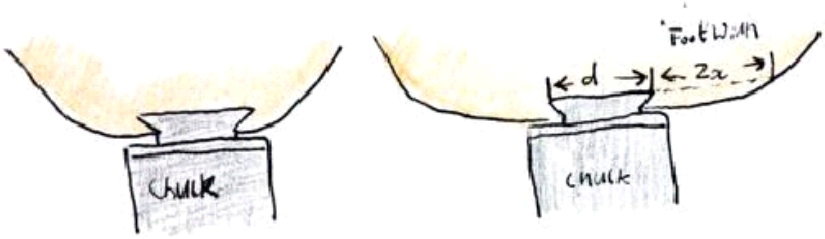
> "...the problem of internal dovetail chucking having a tendency of splitting the recess out. "

This drawing shows the cutting forces simplified. In reality the force will be a 3 dimensional direction due to the resistance to cutting. That will be the dominant direction in the event of a catch too. The general idea is still the same, the recess will be effectively pivoting around the side nearest the tool, and the material from that point onwards will be resisting splitting in tension. (In compression it won't want to split)

From my materials knowledge and the way the force is applied I believe the resistance to split out will be proportional to the area, of the "foot" width and not the distance. I had a good idea what the relationship was so I worked the math out.

Relative strengths for different "Foot" widths

This diagram shows the key dimensions.

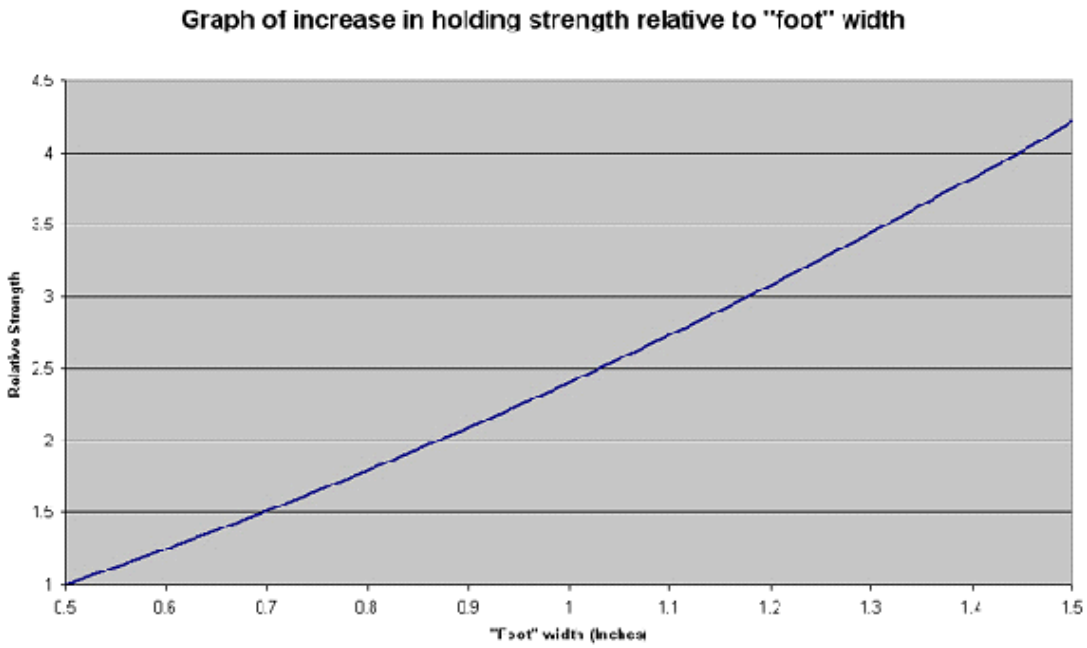


NOTES FROM THE 'NET (CONT.)

In these diagrams *d* is the chuck diameter, this was assumed to be 2" (50mm). The distance *x* I have called the "foot" width. This is the width from the edge of the chuck to the edge of the bowl. In the diagram on the left it is *x* and on the right it has increased to 2*x*.

By working out what area is available to resist splitting, the strength relative to a starting diameter can be determined. In the calculations I started with 0.5" (12.5mm) as the minimum, and worked it out up to 1.5" (75mm)

This graph shows the results.



" Any remaining odors of paint or stinking wood will kill a sale immediately. "

The diameter is plotted along the horizontal scale, and the strength at 0.5" is taken as 1. The vertical scale then gives the strength relative to this. For example, if *x* is doubled the relative strength increases by a factor of 2.4.

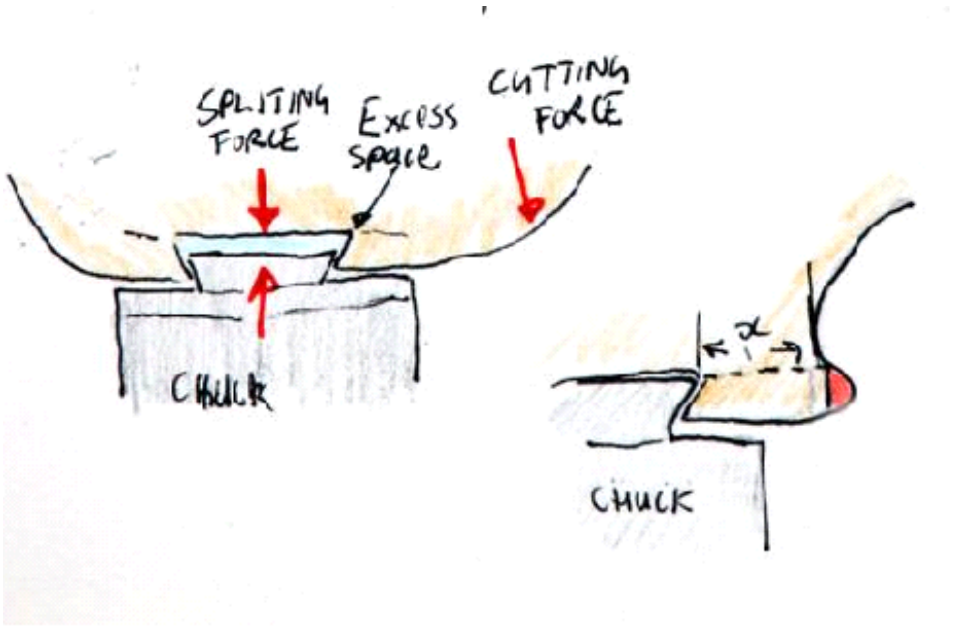
Key Observations

You can use this chart to work out the relative increase in strength. The relationship is not entirely linear, in all cases the strength increase is greater than the increase in foot width (this effect would be more pronounced if smaller dimensions were considered too)

Additional Notes

I've also thought about the depth of the recess. It goes without saying if it is more shallow there will be less strength. But what if you go deeper and there is a void. Is this a problem?

NOTES FROM THE 'NET (CONT.)



In the above left diagram, the illustration shows the void created by a dovetail deeper than the chuck depth. If you consider a force from cutting pushing back towards the headstock, the red arrows show what happens. This pushing has the effect of wanting to push the chuck into the wood, this will have a tendency to make it want to split open, and/or move around. Therefore I think it is best if the chuck contacts the base as closely as possible. This failure is what I believe caused my bowl to jump out. I had cut a recess deeper by mistake than the recommended depth for my jaws.

Finally, the above right diagram just shows that if you use that profile, the red shaded section does not contribute to supporting the bowl.

" Also the grain alignment will affect how it stays in. "

Assumptions

There are a number of simplifications, in the model. For a start as wood is not homogeneous and the stresses generated will not be uniform (which will cause other effects). Also the grain alignment will affect how it stays in. This model assumes normal bowl alignment. If the internal recess was into end grain it would be highly unstable and likely to split out. In that case a compression grip would be much safer and stronger.

John Leavy
Lilac

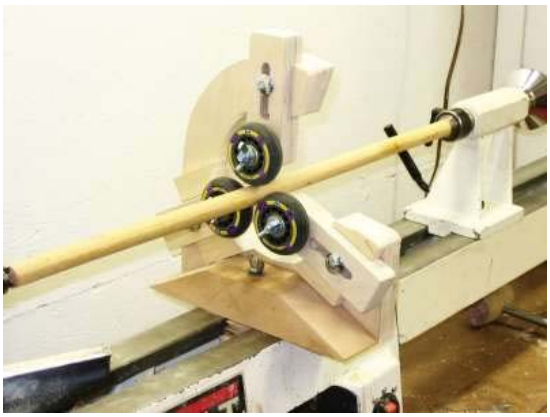
John Leavy
Spaulted Beech

MONTHLY SHOP TIPS

Buffing Pens

by Russ Fairfield

Chuck up a 3/4" lambs wool paint roller between centers (using your own turned end plugs). Use Tripoli on the left, white diamond in the middle and carnauba on the right.



Shop-made Center Steady by John Leavy

John Leavy
Cherry

OTHER EVENTS

Tuesday, February 24, 6pm—9pm

Peter Teubel will be teaching "The Art of Pen Turning" at the Woodcraft store in Woburn on . In addition to making a European designer pen in class, all students will take home 2 addition pen kits (complete with wood blanks), a set of pen bushings, and a complete set of pen turning tools. Cost is $80.

Sunday, February 29, 10am—4pm

Peter Teubel will be teaching a special "Vacuum Chucking" class in his shop in Milford, MA. This class was held last month at the Woodcraft store in Woburn, MA., with great success. In this class, students will learn how to make their own vacuum chucking system for a fraction of the cost of commercial units. Peter will demonstrate how to "machine" and assemble the rotary bearing unit and turn an adapter to match your lathe's hollow spindle. Students will then learn to make vacuum drum chucks of various sizes. All students will take home a completed rotary bearing adapter, at least one finished vacuum drum chuck, and all the materials needed for two addition vacuum drum chucks. Class is limited to 3 students. **A second class will be held on Sunday March 7, 10am—4pm if the first one is filled**. Contact Peter directly at: pteubel@comcast.net or (508) 632-4932. Cost is $130 (all materials included).

Saturday, March 27, 9am—5pm

Beth Ireland is back to teach this informative and useful class at the Woodcraft store in Woburn. She will be covering chucks of all kinds to solve virtually any problem you may be having. Jamb chucks, screw chucks, morse taper chucks, manufactured chucks and handmade chucks. You will learn how to chuck wet bowls, natural edge bowls, odd shaped vessels, delicate work, heavy work and more. Students will also make their own chuck in class. Cost is $100.

" Send your tips to Peter Teubel for publication in our Monthly Shop Tips section! "

VENDOR NEWS

10% off EVERYTHING Sale
Woodcraft Store in Woburn

On Thursday, February 26th, the Woodcraft store in Woburn is having their semi-annual "10% off Everything" sale. That means not only tools, but also power equipment and workbenches (two items usually excluded from our club discount program). Want that new lathe? This is the time to get it!

A.R.T. MENTORING PROGRAM

Our Mentoring program is designed to help the novice as well as the intermediate turners in the club. Take advantage of the Mentors listed below. They've all agreed to spend a few hours with anyone to help the beginner get started or the intermediate to advance their skills. All it takes is a phone call to make an appointment.

Peter Teubel - Milford, MA
(508) 662-4932
pteubel@comcast.net

Mike Green - Lowell, MA
978-459-8308
mgreenburl@juno.com

Frank Movitz - Marblehead, MA
781-631-4411
gwpb@attbi.com

Derrick TePaske - Belmont, MA
617-489-0169
go.den@verizon.net

Steve Reznek - Concord, MA
978-287-4821
reznek@aol.com

Jack Grube - Londonderry, NH
603-432-4060
jackgrube@aol.com

Dietrich Kulze - Billerica, MA
978-663-5241
dk3@reuse.com

David Vaughn - Reading, MA
781-944-3389
janvaughn@comcast.net

"All it takes is a phone call to make an appointment."

CLASSIFIEDS

Look! No Batteries Required...Ever Again! Batteryless, 110 VAC Powered Laser Pointer for those deep hollowing jobs. Plugs into any standard 110 VAC outlet. Use with deep hollowing systems such as the Jamieson, Kelton, Oneway, Pro-Forme, Dave Reeks, homemade, etc. varieties.

Price: $25.00 each.

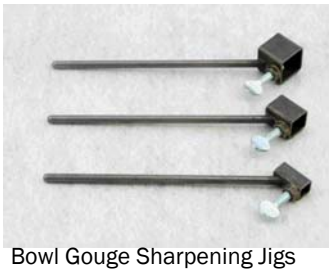
Get perfectly side ground edges on all your bowl gouges. Improved, easy to use gouge sharpening jigs. No matter what the sizes of your gouges, there is a sharpening jig to give you that perfectly ground edge. For use with the Wolverine or similar grinding aid. Three sizes to properly fit all gouges:

Size:	Prices:
Small (up to 3/8" dia.)	$12.00 each
Medium (3/8"– 5/8" dia.)	$12.00 each
Large (5/8"-7/8" dia.)	$12.00 each
Set of all three:	$30.00 (Save $6.00)

Ultra-Thin Kerf Parting Tool. Blade is only 0.050" thin to give those wood saving and grain matching cuts. Overall length approximately 9-1/2" with comfortable handle for good control. Made from hardened High Speed Steel for a lasting edge and stiffness.

Price: $20.00 each.

110 VAC Laser Pointer



Bowl Gouge Sharpening Jigs

Ultra-Thin Parting Tool

Please add $5.00 Shipping and Handling to your order (no matter the number of items ordered being shipped to the same address at the same time).

To order, please make checks payable to Peter Toch and mail to:

Peter Toch
6565 Fairway View Trail
Roanoke, VA 24018

For questions or further information, please contact Peter Toch at (540) 774-4152 or ptoch@adelphia.net

* NOTE: These items are also available thru **Mike Green** at the monthly meetings.

" Classified ads are free for members . Just send your ad to Peter Teubel."

Eucalyptus Burl for Sale

Angelo Iafrate just got in a 600 pound shipment of eucalyptus burl. The price is $4.00 per pound and runs in sizes from about 18" dia to 24" dia burl caps and 4" thick slabs that are 3' x 2'. He's willing to cut some of it up into smaller pieces. Sample can be viewed at www.tamarindwoodturning.com.

Contact Angelo by e-mail, telephone (401)-829-8293 or plan a visit to his shop in Rhode Island (Just be sure to call ahead to arrange a visit).

CLASSIFIEDS (CONT.)

For Sale: Set of 3 Sorby Hollowing Tools.

Good for small stuff. Replaceable swiveling high speed steel cutters. Barely used. I recently acquired a complete set of Kelton Hollowers, so I have no need for these.

Price is $50. Contact Peter Teubel at (508) 662-4932 or pteubel@comcast.net.

" Classified ads are free for members . Just send your ad to Peter Teubel."

MEMBERSHIP HAS ITS PRIVILAGES...

CA Glue & Accelerator Available to Members:

Thin CA Glue	2oz	$4.00
Medium CA Glue	2oz	$4.00
Thick CA Glue	2oz	$4.00
Black Medium CA Glue	2oz	$6.00
Accelerator w/pump	2oz	$3.00
Accelerator Refill	2oz	$2.00

3" Velcro backed sandpaper discs

- 80 to 400 grit	10/pack	$2.00

Association of Revolutionary Turners

"GET INVOLVED"

Editor's Note

Some members have voiced their concern about the size of the newsletter and the time it takes to view online. Yes, its big. Yes, it take a long time to load over a dial-up internet connection. But it only have to take that long **ONCE**. After opening the entire document, simply ***SAVE*** it to your local computer. That way, you'll have a local copy to view and review at any time.....AND IT WILL LOAD FASTER (obviously).

2004 MEMBERSHIP DUES

Dues for 2004 is now due. Please have cash or check ready at the January meeting.

FEB 27 MEETING

- **Demonstration:**
  John Moore—Thin Stem Goblets
- **REMINDER!!! Please park across the street in the Fleet Bank parking lot!!**

~ LEGAL STUFF ~

The Association of Revolutionary Turners (A.R.T.) was founded in 2001 to support the needs of woodturners in eastern Massachusetts. Its purpose is to provide education, information, and organization to those interested in woodturning. We meet on the 4th Thursday of every month at the Woodcraft Store in Woburn, MA. Memberships are on a calendar basis from January 1st through December 31st. Annual dues is $20 per person.

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