North Carolina WOODTURNER

Journal of the North Carolina Woodturners Association
A Chapter of the American Association of Woodturners

Volume 13, Number 6 **June 2003**

Fly Houses
by Lee Holt

THE PRESIDENT'S MESSAGE
By Ron Mechling

Mark St. Leger claims to be a woodturner; however, after his rendition of the fly house, I'm convinced that he is a storyteller. All of us enjoyed Mark's presentation last month.

This month we will have a "log to bowl" in-house demonstration put together by our program leader, Ric Erkes. This is a great opportunity to bring a friend and introduce him/her to the world of woodturning. And, if they become a member, you'll get 5 free tickets for the raffle. As for those of you that are accomplished woodturners, I'm sure you'll pick up some new techniques as well as contribute thoughts of your own to the presentation.

In response to the request in last month's President's Message, we want to thank Terry Kanipe for contributing a CO_2 bottle and gauge to the club. This will allow us to have compressed air for use by our demonstrators without all the noise and set up of a compressor. Terry underwent surgery this past month, so from all of us here we wish you a speedy recover.

Don Hildebran surprised us at the last meeting with a donation of a hollowing tool with laser attachment to be auctioned, to help offset the cost of our new grinder/Wolverine sharpening system. We sincerely appreciate Don's contribution; and the efforts of Sam McDowell in dutifully using his superb auctioning skills to raise $90. Sam could be the official NCW Auctioneer.

At the last meeting we asked for a show of hands from those who would be interested in an early morning session (before one of our 1:00 meetings) of hands on instruction. We were pleased to see so much interest and will put together a session real soon. The Woodworking Shop has generously committed to helping sponsor and promote this unique instruction opportunity. We will publish the details soon

The 17th Annual AAW Symposium will be held in Pasadena, CA from June 27 to June 29. The demonstration rotations will be performed by turners from all over the world and will cover about any style of turning you can imagine. If any of you plan to attend, we would gladly accept a written review for our journal. Next year's symposium will be in Orlando. The AAW is dedicated to providing education, information and organization to woodturners. If you aren't a member, we strongly recommend joining. See Mary at the next meeting for information.

We are looking for a volunteer to substitute for our librarian (Mary) for the meeting in July as she is taking a trip with her grandchildren. See a member of the Board if you are willing to help.

Our next meeting will be on June 14th at 1:00 pm, with the Board Meeting at 10:30 followed by lunch.

Keep on turning, Ron

Member News - by Mary Bachand

Our meeting in May was the first one at which we didn't add any new members, although I did hand out several applications. I waited a week before typing the directory addition to see if those who picked up the forms would join but I haven't received any at this writing.

Long-time member Terrell Kanipe should have a new set of knees now. We wish him a speedy recovery.

Please bring your own cookies to the June meeting. I will be "one-armed" for a while and baking will be next to impossible.

Library News - by Mary Bachand

I have ordered the Alan Lacer video "The Skew Chisel" and the new Mike Darlow book WOODTURNING DESIGN. Hope they are in for our meeting. I've about given up on the videos that I ordered from Craft Supplies. They were ordered several months ago and every time I call, I'm told that they are "back-ordered".

I am greatly concerned about the lack of concern that some people have for our library property. If you remember, last year, member Steve Millwood disappeared with 5 of our videos. Now, I have several members who have had rentals out for months. I've listed their names in the journal and even sent notes but am still unsuccessful in getting them to return the property. PLEASE guys, be gentlemen and return our property.

Some of you, no names mentioned, have rentals out since April and I would appreciate you either mailing it to me or bringing it to our June meeting. Terry Park has had 2 books since November; Joe Jones has had 5 videos since January; Scott Ollis has had 3 videos and 3 books out since March. David Propst has had the Sam McDowell video since Sam did the demo. If you can't attend the meeting and don't want to mail them, just drop them off at the Woodworking Shop and ask them to give the rentals to me.

NEXT MEETING: JUNE 14th at 1:00 pm

Coming Events - by Ric Erkes

June 14 - in-house demo - from log to bowl.

Okay, somebody gave you a log. Now what? The plan for June's meeting is to introduce green wood turning to some of our newer members and maybe teach a few tricks to some of our more experienced ones. Several of our members will be discussing green wood turning and trying to pass along as many tips and ideas as they have on how to take a log and turn it into a finished bowl. We'll discuss chain-sawing, roughing and drying it out, use of a bowl gouge, sharpening jigs, and finally how to reverse turn a bowl. Bring your questions! The meeting will run from 1:00-4:00 pm.

July 12 - Matt Birchfield - thin walled lampshade.
Aug. 9 - Chris Ramsey - a wearable hat.
Sept. 13 - Phil Brennion - southwestern style instructions.
Oct. 11 - Charles Farrar (tentative).
Nov. 1st & 2nd - 2003 Carolina Woodturning Symposium .
Dec. 13 - Christmas party.

On a continuing note…the year is almost half over and the Board is starting to think about demonstrators for next year. If you want to demonstrate, or want to see something demonstrated let a Board member know. Also, I want to thank those of you who have volunteered to do the program reviews. There are lots of things that happen behind the scenes and writing the reviews is just one of many areas constantly looking for help. I am trying to maintain enough volunteers to where you'll only have to write one or two a year, and besides it comes with a free tape rental. Remember, as soon as you join the club, you become a full member just like everyone else. If you get something out of the club, consider what you can do to help our club remain vibrant and successful. Thanks for volunteering.

2003 Challenge Projects

June - Croquet ball and mallet. The regulation size of the ball is 3-1/4 to 3-5/8 inches in diameter, and must weigh less than 1 pound. The mallet head should be 8-1/2 to 9 inches in length, and 2-1/8 to 2-3/8 inches in diameter. The faces may be any shape, but must be identical and parallel. Typical dimensions are 2-1/4 inches in diameter by 8-1/2 inches long. The handle should be 32 to 34 inches in length; the first 2/3 of the handle is a little over 1 inch in diameter (this is where you can put your design), tapering to about 7/8 inch. The tenon into the head is 7/8 inches in diameter by 1-3/4 inches long.

July - Squared or cubed turnings
August - Something whimsical.
September - Mushrooms.
October - Whistles.
November - Bring your gallery pieces to the Symposium.
December - Bring your gallery pieces to the annual Christmas party and auction.

Gallery Photographs

Since many of you bring digital cameras to the meetings, feel free to send any photos of the demonstration or gallery pieces to include in the next month's newsletter; email photos to John Uteck at uteck@conninc.com.

Don't forget to take the printed photographs of your gallery pieces for your own albums, with our compliments.

NCW Logo Clothing

NCW clothing is now available. Samples of various sizes of golf shirts, henley t-shirts, and turning smocks will be available at the meetings. Contact John Uteck for details.

Classifieds - Place your free ad in the newsletter!

Mentor Program - For All Levels of Turners

If you are interested in learning new skills, or improving the skills you have, contact one of the following turners for mentoring. Feel free to share your experience with us in the next newsletter, and don't forget to include photos!!

- John Winslett (Tryon, NC) - 828-859-9863.
- Dean Amos (Sandy Ridge, NC) - 336-871-2916.
- David Propst (Valdese, NC) - 828-437-4722.
- Ric Erkes (Davidson, NC) - 704-896-3302.
- Scott Ollis (Hickory, NC) - 828-294-4423.
- David Kaylor (Davidson, NC) - 704-892-8554.
- Sam McDowell (Statesville, NC) - (704) 871-9801.
- Edgar Ingram (Statesville, NC) - 704-876-4576.
- Glenn Mace (Mocksville, NC) - 336-751-1001.
- Dick Nielson (Gastonia, NC) - 704-864-1742.
- Grant McRorie (Rutherfordton, NC) - 828-288-9572.
- Don Olsen (Lincolnton, NC) - 704 735-9335.
- Ron Mechling (Todd, NC) - (336) 385-1250.

If you are interested in being a mentor, please let John Uteck know to include your contact information in the Journal.

Tips and Techniques - ideas from the internet. Come see more great ideas at the "Log to Bowl" demonstration on June 14th.

Here's a saw cradle made by David Peebles (dave@bowlturner.com), from 6"x8" treated lumber.

Bowl Blank Sawing Jig - by Bill Grumbine.

email: ultradad@enter.net
http://www.enter.net/~ultradad

This is a bowl blank sawing jig I made after reading about a similar, but more complicated design somewhere on a BB. I built this thing because it is relatively easy to saw log sections in half, but slicing them down for bowl blanks can be slippery and frustrating. This is version 1.0, with improvements already in the works. The improvements will undoubtedly wait until I either saw through this thing or the post comes out, which it is in the process of doing right now. The screws are pulling out of the soft pine. When I rebuild it, the post will be attached by through bolts and nuts. I will also fasten a strip underneath the support for the blank so that the support becomes sacrificial without compromising the integrity of the jig.

It is pretty easy to build and use. I bought a Pony clamp that slides along the pipe but also has a screw adjustment on it, a 24" length of 3/4" black pipe, a pipe flange, and an 8' 2x10. Assembly should be apparent, dimensions are not critical. To use it, place the blank on the jig, and clamp it down. It works quite well, and I have had a significant improvement in sawing out uniform bowl blanks.

Editor's Note:Bill has since made some major changes since he posted this picture. If you go to his personal website listed above, and click on the link entitled Sawing a log for Bowl Blanks, you will have a series of pictures with text on how he has been doing it for the past few years. It is faster, easier, and requires less in the way of set up than the jig he made with the pipe clamp.

For some other ideas, try the following website: http://www.laymar-crafts.co.uk/tip33.htm

Demonstrator Review - by Lee Holt

Mark St Leger, May 10, 2003

Mark has been a High School wood shop teacher for the last 15 years and incorporates creative wood turning in his students courses as well as in his demonstrations in both regional and national symposia. Currently on the AAW Board, and active member in Blue Ridge Wood Turners in South West Virginia with work in two artisan/museums in Virginia.

Always with his High School budget in mind, Mark center-turned a #2MT on each of the SIX projects he built for us, using the same piece of wood for the individual project. With that same piece of wood, when the finished piece was parted off, he had a mandrel he could use for a future piece. He simply tapped the #2MT into the head stock, and had immediate access to the piece with no chuck to interfere.

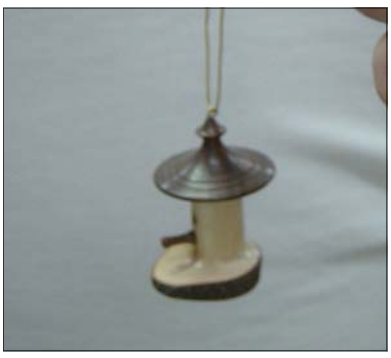
The first project was a **"Tippy Top"** or "a funny little spin top". With a block of wood 1-1/4" square and about 2-1/2" inches long, mark diagonals, and snap-punch centers and put on the lathe between centers. Using a half-inch roughing gouge, and turn to a cylinder. Switch up to a quarter-inch Bedan tool, and use a (hand-made brass #2 MT) gauge to turn a 5/8ths long tenon on the end. Refine to fit the head-stock drive. "This isn't too critical at this point, as long as you get it perfect you're all right" If too loose, wet the tenon for a tight fit. Tap it in the head stock, and begin the project. Turn a 3/8ths tenon with a chamfer on the end, and rough out the egg-shape of the top. He used another hand-made tool (His kids named it the "St. Leger tool") with a finger nail grind on a 3/8" square stock to turn a hollow at the end of the top next to the 3/8" tenon. Use a fine cut here as you don't want to sand the inside; round the sides, and come back and refine the outside shape with the 3/8" bowl gouge. Next sand 100 to 600 grit paper two coats of lacquer, and wax; part off with a butter knife parting tool, and ready for a spin. The rounded shape of the top begins spinning like a normal top, and as it slows, rights itself, and starts spinning on the stem of the top!

Everyone loves the skew, so the next project was **turning an egg** with nothing but the skew. First turn the #2MT on the end with the Skew and then as a roughing gouge, turn the 2-1/4" square block to a cylinder, and then turn a tenon on the tail end with the skew. Remove the drive center, and tap in the tenon; bring the tail stock live center up for support, and start turning the egg-shape. This skew is a tapered grind, and the cutting surface is at the lower third to the center of the bevel. Mark strives to keep the cutting at the center of the skew, so he is less apt to have a catch where the point begins to cut and pushed the tool away from you. This is a "nice exercise", and Mark left the egg attached to the drive center to center the egg when he uses the vacuum chuck for the final sanding.

FLY HOUSE, First using a full-size #2MT wooden mandrel he made with a ½" tenon, slip on a 1-1/2" piece of Rhododendron offset drilled with a 1/2" hole and bring up the tail stock for support. Back in 1995, he was working in his shop, and the flies were buzzing him in the shop, and he realized that they weren't trying to bother him, they simply didn't have anywhere to go! So he came up with the fly house with no further bother.

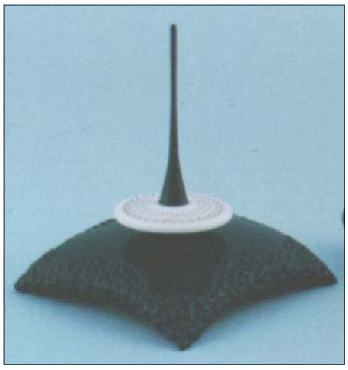
Mark likes to use Rhododendron for the house, and Walnut for the roof, as it give a nice contrast. He now drills the holes after the turning, so he can match the wood better.

With a series of cuts of the 3/8" spindle gouge with bevel rubbing, define the house, and next define the porch on both sides. Now move the tail stock, and turn a hollow on the bottom, as it looks good and you need a place to sign. With a Wal-Mart type Dremel tool drill the two holes. Place the perch hole centered and not too far from the porch, as you don't want too far a jump for the fly.



Back to the lathe and final sanding to 600 grit and two coats of lacquer and wax for final finish; then turn a small tenon on the roof to fit the body. Put a couple of details in the overhang of the roof, and when parting off, cut a nice domed "cathedral" roof inside.

Super glue in the top, and turn the perch. Use the walnut piece still in the lathe, and turn a little finial. The length of the perch is about 3/8". Put a tenon on here, and a cove for the landing strip, and in the middle a nice taper for good control. Check the tenon to fit the house, use 600 paper, and lacquer and wax (not too much wax!). He uses a jewelry hook from Wal-Mart, about 2" long, and CA glue to finish.



Next project is a dancing top that Mark learned from Christof Uderman (his idea), whom he saw at Rhode Island last year at the AAW symposium. Mark makes the top body of Corian, or Blackwood, or other hard wood like dogwood. The stand is a 2" square piece of black wood 1/2" thick, and he turns a convex shape using the chuck and a point for the top to dance in, on one side, and then reverses the piece in the chuck, and turns a convex shape for the bottom and four points to stand on. Then he "stipples" around the edge of the piece for a pleasing effect.

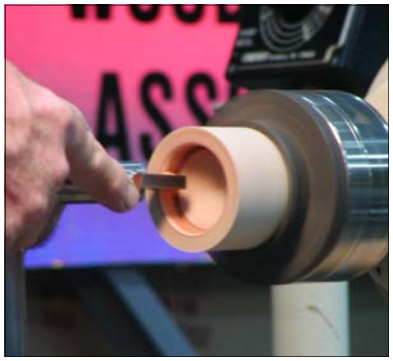
Next he turns the top using one of his #2MT mandrels for a glue block. He uses 1/2" thick Corian for the top and resaws it on the band saw to 3/16" thick, cut into one inch square and drill a 1/4" hole in the center, and turn a tenon on the mandrel to accept the 1/4" hole. True and shape the outside with the 3/8" spindle gouge. Use nice light cuts and taper the Corian. Add chatter work, so outline the area with a point, and use a piece of black wood to high light the design left by the chatter tool. Flip over the piece, and shape and taper the other side. Use the chatter tool and finish the top body.

Now a shaft for the spinning top. True up the face of the mandrel for a glue block, and CA glue on a piece of (black wood in this case) contrasting wood about 1/2" square, and 2-1/2" long. Find the center of the end with a skew, and bring up the tail stock for support, and go down 1/8" before switching to another tool. Use the Bedan tool or a small skew to start the diameter down to a small thin piece. The effect of the top is actually "dancing" at the bottom of the top, and causing the eye to see two tops at the same time.

He likes to use the Bedan tool since he learned from J.F. Esculon. He hugged the lathe body, and used his left hand as the tool rest supporting the wood, and riding the Bedan on the top of the tool rest he goes down to about a 1/16" diameter. He turns to a consistent 1/16" diameter for about an inch, and then puts on a nice taper, and then turns a 1/16" diameter tenon that will go through the Corian body. He turned an edge about 1/8" and a recess on that with the corner of his Bedan for the glue to go to when gluing up. He refined the taper, and sanded from 300 to 600 grit, supporting with the other hand. Next parting off using the Bedan on edge like a skew and making a rounded point for the bottom of the top. Now we glue that on the Corian with CA glue. The finish on these tops is done on the buffing wheel with Tripoli, and buffing wax for a very fine finish.

He was going to do "revolving Spheres" but would have been too time consuming, so he completed **a threaded box**. The revolving spheres is four spheres with a stand that holds them stacked and when you spin the tops they revolve around each other. This idea comes from Jim Bohmer of Akron, Ohio. *(With permission from Jim Bohmer, a discussion of the "Dynamic Spheres" is included in this Journal - ed.)*

He will use the maple for the box, but his preference for threads is cocobolo. The maple block is 2" square, and about 3" long. Rough out the blank and turn a tenon on both sides. Mark the center (plus 1/8") and part off into two pieces. Next into chuck and hollow out to about 3/4" depth. He used a ball end-mill cutter (from MSC Supply) mounted into a tool, and very quickly cut to depth. The cutter works well in end-grain wood. Make a 90 degree edge and a recess for the threads to go, and the thread chaser will not hit the back wall.



Round off the edge, hone the thread chaser on top and edge of the first thread only. Since maple is subject to tear-out, he uses "the magic juice" to saturate the wood. He now uses "Joy" cut with 50/50 water. Touch the thread chaser to the edge of the wood to "strike" a thread, get into a rhythm to start a pattern, add Joy magic, make the thread a bit deeper and carefully add pressure to the arm brace cutting a deeper thread each time. Cutting above center about 10 degrees. This is 20 threads per inch which he likes for his boxes.

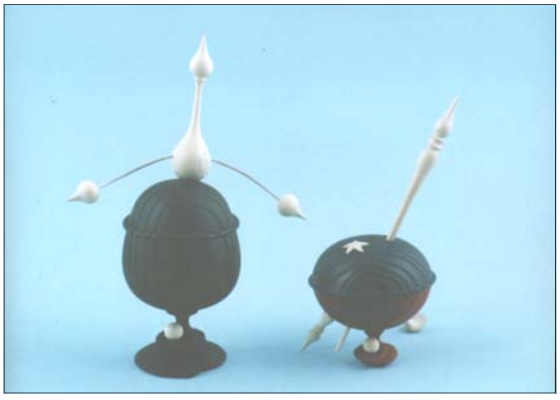
He now waxes the threads, and marks his piece for the number one jaws, so he can re-chuck later, and put the other half on. Turn a tenon on this piece so he can do the outside threads, measure the inside piece, and mark a little bit larger that needed. Back to the Bedan, and turn down to the caliper reading. Make sure 90 degrees from the inside wall; break the leading edge where you strike the threads. Now make a relief cut where the threads can end. He find it is harder to make the inside threads than the outside with the maple.

No brace this time as the threads are on the end of the cutter. Extremely slow speed and come over one thread at a time, and follow the pattern he struck. It looks so easy, doesn't it! Stop often and check the fit. Refine the threads, so the wood grain just about matches up, and do the final match after the piece has dried in the shop for awhile.

With the threading complete, Mark used this box for his **sphere demo**. Measure depth, turn down, finish cut, sand the inside. Put the other end into the chuck, and finish the face of the box until the center lines up. Put the box between centers, and turn it round - "when you get it perfect, stop". This is the first axis - draw a pencil line in the center, and refine the round shape. Use a piece of PVC tubing turned flat to use as a gauge, and when close to perfect sphere turn the tenons down to about 1/4" and cut off.

Axis two is between the two recess pieces of the spherical chuck we made. Turn off the tenons using the "shadow" or perfect sphere the eye sees, and carefully sheer cut the sphere. Stop and check where this cut and the last cut intersect, and mark and again sheer cut to close to perfect sphere. Another pencil line, and move that line to the cups for axis three. Now the box is finished except for refining the outside which in this case is a sphere. Now sand up using the vacuum chuck, so no marks will be on the box. Marks vacuum chuck is homemade, but the materials and pump can be commercially purchased. His chuck is wooden turned with a piece of Neoprene rubber to hold the ball. Go through the progression of grits, and turn the ball in the chuck and finish the end.

The Stacking Top is his final project for the day. Same piece of wood with #2MT on the end, and turn round cylinder; turn to a taper for the first top, and turn a tenon from the handle, and part off top #1. Normally the top would have chatter work and color or finish. Second top is larger in size, so turn down to cylinder; add a tenon on both ends. Install into the chuck and carefully tighten, and turn the point of the top. Reverse the top in the chuck to the handle end, and turn down with a skew and cone the inside of the handle and make sure the nub is not in there. Shape the handle with a nice taper and add chatter work as you like both in and outside. Sometimes they need tuning so they can go back in the vacuum chuck as required.



So finish! Spin the big top first, and then spin the little top into the recess in the big top, and you have the stacking tops with both spinning at once!

Mark St Leger is a terrific teacher and turner; I wish we had had more time for some of his other projects with our day at North Carolina Woodturners, May 10, 2003.

By Lee Holt, NCW member since June 1992

Dynamic Spheres

(Turnings That Move)

by Jim Bohmer in Akron, Ohio
Member of the North Coast Woodturners - Cleveland, Ohio

My active wood turning career has spanned the last decade. As I became more proficient, I tried making a wide assortment of items, such as: pens, bottle stoppers, candlesticks, gavels, bowls, gavels, etc., but never anything of a spherical shape. The making of wooden balls have long interested me, but motivation and the chance of ruining good wood by doing something that I was unfamiliar with, held me back. Recently, a second exposure to a Christian Buchard Demo overcame my fears, and my sphere career began.

At the time of my sphere "enthusiasm boost" I found a 2 1/2" x 10" x 6'-0" slab of figured hard maple that had been neglected and set aside for 20 years at a local lumber mill. Prompted by a club "turn and learn" contest to make a sphere of 3" or more in diameter, I glued a sandwich of a piece of 3/4" walnut inside, contained by two pieces of hard maple.

The resulting sphere was a success, but it lacked character and wasn't very interesting. So, how could I make it better? Being an engineer and having a brother that worked for Timken for 39 years, I was well acquainted with bearings and raceways, so if I made a couple more 5 1/2" balls, put all three on a turned raceway and put a 4" ball on top to spin. It worked, but not very well, and the smallish ball on top looked out of proportion to the larger spheres on the bottom. This effort wasn't successful in gaining fame or fortune, as it didn't quite meet the criteria of the contest, and was outclassed by better sphere craftsmanship.

Undaunted, I proceeded to "brainstorm" how I could make my fledgling idea better. I got some solid advice from an artist friend. She thought the spheres should be all of the same size, and smaller. So more laminations of maple and walnut later, I had four 4" blocks glued up, that I turned into spheres. I had a nice piece of 2" curly walnut just waiting to be the raceway, and I lucked into everything working properly with the initial raceway turning.

The two axioms for function movement that I had so conveniently "lucked into" turned out to be: 1) The three bottom balls must be slightly loose (not touching) when resting on the raceway and 2): The raceway must be grooved to afford the balls a two point track to roll on. More of this will come when we get into construction.

I displayed my "Dynamic Spheres" at our club's Show and Tell table and I was quite elated over the attention and comment it received. In May of last year (2002), a Woodturning Contest was sponsored by the East Cleveland Woodcraft Store, for their Northeastern Ohio customers. I was happily surprised when the "Spheres" won over many very creative and beautifully executed projects. Talk about an instant boost of motivation, not to mention receiving a Jet mini lathe as the reward.

I busily made a couple more examples and exhibited them at last years Instant Gallery at the Symposium in Providence. Without a "SPIN ME" sign, my work seemed to be overshadowed by all the neat and great static turnings that were exhibited. When the spinning movement is demonstrated, people are quick to become interested and also give the spheres a spin.

A plain ball, even made from exotic wood, lacks character when spinning. The laminated balls with ¼" dark strips look good, but it's hard to get all of the joints tight. Also, in time, as every wood species expands and contracts differently, surface irregularities occur. After laminating my first projects, subsequent projects have been made with 6 contrasting plugs that create interest when the balls rotate.

Construction is straight forward, and fun. The spheres need to be made of a heavy, dense wood. The more mass that they have, the better and longer they spin. I like Cocobolo, because it is heavy and dark and is beautiful! The insert plugs need to contrast….I picked Birdseye Maple for its light color and figure, but as the eyes only appear in side grain, strings of blocks need to be glued up in preparation for turning a length of plugs. A size of

13/8" round seemed about right initially, and I have used this plug size exclusively. Care needs to be given to the location of the plug glue joints, when plugs are cut for insertion into the sphere blanks.

Making the sphere blanks starts with rough planning to an approximate 4" square size, and cutting them to a 4-1/4" + length. Then the center of the four sides and two ends are drilled with a 1-3/8" Forstner bit for 1/4" long plugs on the sides and 3/8" plugs in each end. The center of the end plugs are the lathe centers.

Making spheres: A sharp roughing gouge makes quick work of rounding the blank into a cylinder. Using a caliper turn a diameter that can be held for all four turnings. This diameter becomes the reference diameter for all the sphere work.

For second axis cuts I use a spindle gouge. A bowl gouge could also work. Using a circle template as a sight gauge, the curve is roughed in on the second axis. One half inch round tabs, plus or minus, are left at each end. I like to "sneak in" to the size at the ends with fine cuts to thwart end grain pullout that can ruin your day. Final sizing is done with shear scraping using a bowl gouge. Particular attention needs to be given to getting the top 60 degrees of the turning (30 degrees each side of the vertical) truly round. This can be verified using a 1-1/2" ring laid on the wood, which will touch at all points when the diameter is correct. Using the caliper with the reference diameter will verify the right diameter.

Saw off the end tabs….not too close. Position the turning on the third axis using approximately 2" cups for head and tail attachment. Carefully remove the remnants of the tabs and then shear scrape to remove the ghosts. The caliper with the reference diameter should now fit the third axis. Rotate once more 90 degrees to the first axis and shear scrape away the final ghosts. Sand to at least 400 grit, rotating the turning to keep the sanding uniform. Repeat four times and you have the spheres.

Finishing: I use a 50-50 mixture of lacquer thinner and gloss Deft, brushed on. Steel wool smooth, when dry. Buff to bring out gloss, wax, and buff again.

The finished spheres now become the instrument to dimension the raceway. As the spheres will rotate on the raceway almost touching we can use trigonometry to find that the radius of the center of the raceway track is the hypotenuse of a 30-60-90 triangle with a height of 4". X = 4/sine 60. Using my trusty scientific calculator, X = 4.9". From experiment, a 2" wide groove is sufficient to contain the spheres. This determines the size of the raceway (base), as it needs to be 3" to 4" larger than the calculated raceway center diameter. In our case this makes an approximate diameter of 12". A 2" thickness seems about right. Don't skimp trying to use 3/4" stock. It does not look right and it doesn't have enough mass to stay in place during a hefty spin.

Layout the two inch raceway groove, and using a finished ball or a 4" diameter template, cut the groove to size. I use a screw chuck arrangement to hold the raceway, so I can now remove the chuck with the raceway attached, and trial fit the three balls on the raceway. To work properly, the balls should ride on slight ridges or tracks about an inch or so wide. Also, there needs to be about 1/4" of total space between the balls (loose fit). Final tune the groove to suit. This may take a few trials.

Finish the raceway with custom curves and embellishments as you see fit. I cleanup the bottom and dome out the screw chuck hole using a vacuum chuck. Final finishing is the same as the spheres.

Now the fun commences. Put the balls on the raceway and spin away. When you wear away the finish, it's easy to renew. This is one turning that tends to get a lot of use! As a too hardy spin will separate the balls from the raceway, carpeted floors are a necessity.

http://ncwt.org/newsletters/2003%20Newsletters/2003_04/ncwtnews_03_04.htm

http://ncwt.org/newsletters/2003%20Newsletters/2003_04/ncwtnews_03_04a.htm

MAY GALLERY - Photos by George Wunker

Cherry & Walnut

Lee Holt

Jim Miles

Walnut, Cherry, & Poplar

Box Elder

Dean Amos

Ric Erkes

Paduak & Antler backscratcher

Oak (new design opportunity)

Sam McDowell

Ric Erkes

Ambrosia Maple, Walnut, & Antler

MAY GALLERY

Photos by George Wunker

Ash

Bob Muir

Spalted Maple

Lee Holt

Ambrosia Maple

Don Olsen

Walnut, cherry, & Oak

Jim Miles

NORTH CAROLINA WOODTURNER

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Internet: www.geocities.com/nc_woodturners

MAY GALLERY

Photos by George Wunker

Big Leaf Maple Burl

Dean Amos

Pecan

Jerry Ostrander

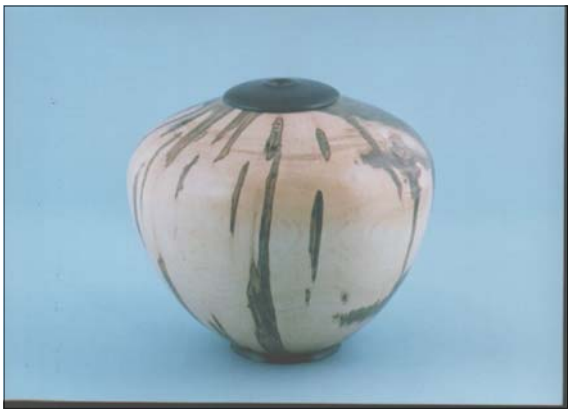
Maple

Sam McDowell

Color Ply

John Richards

Ambrosia Mapl & Ebony



Don Olsen

Poplar

Scott Caskey

Remember, our meetings are always at 1:00 on the second Saturday of the month at Klingspor's Woodworking Shop in Hickory unless otherwise noted in the Journal.

NEXT MEETING: June 14th at *1:00 pm*